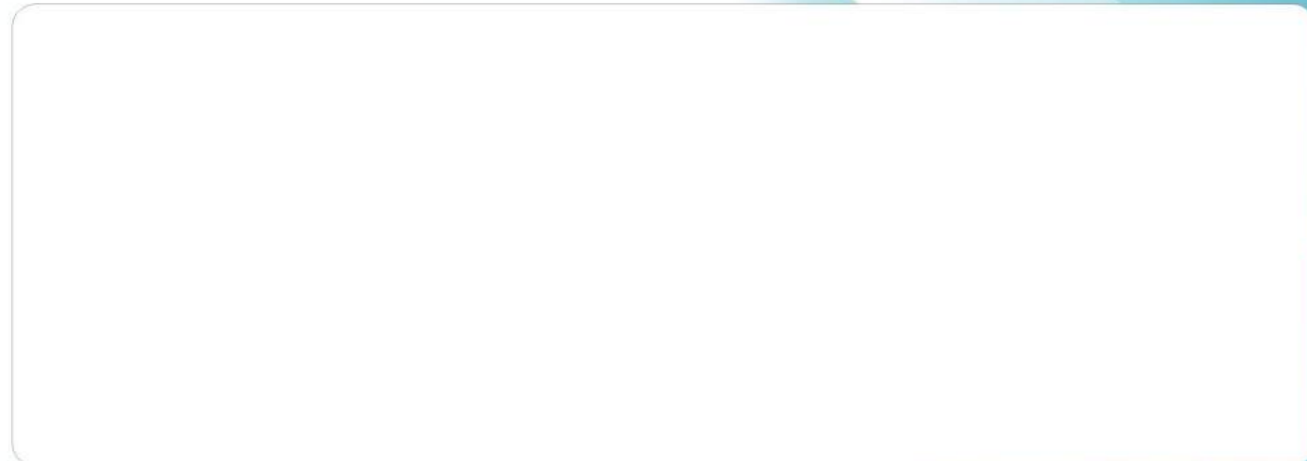


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Issued Date: Feb, 2017 (Ver.18)

**Ambition, Reliability, Commitment, High Quality**



翊嘉電子股份有限公司

- ◆ AC-DC ITE Power Module
- ◆ AC-DC Household Power Module
- ◆ AC-DC Medical Power Module
- ◆ AC-DC ITE Switching Power Supply
- ◆ AC-DC Medical Switching Power Supply
- ◆ AC-DC ITE Full Brick
- ◆ DC-DC Converter

**Company Profile**

Arch Electronics Corp. is a Taiwanese power supply expert with headquarters based in Taipei, Taiwan. With 30 years experience in the industry, we are committed to designing and manufacturing of high quality AC/DC and DC/DC power supply products. Our mission is to provide the most reliable power solution in the market, along with high efficiency, reasonable cost and smallest package.

We currently offer AC/DC encapsulated module, AC/DC switching power, AC/DC medical power available in both circuit board mount and chassis mount types, and DC/DC converter. In order to assure the high quality and safety of our products, both our manufacturing facilities in Taipei, Taiwan and Suzhou, China are certified to ISO9001 and ISO14001. We are consistent in keeping the failure rate lower and longer than warranty period. Our products are also compliant with major international regulations and directives that allow easy integration to a great amount of systems in various industries.

We are determined and committed to providing customers not merely a solution, but also total satisfaction and trustworthiness.

**Position**  
To design and manufacture the power in the smallest compact size in the field. Flexibility is our focus in the design and quick response to the inquiry in meeting customers' expectation. Reliability is emphasised in Arch full range products.

**Philosophy**  
To provide a significantly competitive advantage at quality and price to satisfy our customers.

**Laser Print Technology**  
We are proud to announce the release of our new laser print technology. Due to responsibility of environment and to avoid false products in the market, we made a decision to utilize laser printing on Arch products.

It will be applied in succession since August, 2006.

You will be interested to have a view of the products which are adapted this new technology, kindly check below pictures to have an idea for our announcement.

Besides, with the rapid development in Chinese market, ARCH has implemented our technical knowledge and manufacturing process in our new China factory in SUZHOU since 2007 for enlarge the quantity of production and offer better lead time service. Furthermore,

**Product Range**

**ITE Switching Power Supply**  
60W~600W

**Household Power Module**  
10W ~ 25W

**ITE Power Module**  
2W ~ 150W

**DC-DC Converter**  
1.5W~60W

**ITE Full Brick**  
300W

**ITE Medical Power Module**  
15W~150W

**Medical Switching Power Supply**  
240W~500W



**New Products**



**MQF5000 / E Series**

**ITE & Medical Switching Power Supply**

**500 watt**  
CE CB UL US

MQF5000 Series  
127.8 x 76.2 x 35.0 mm  
5.03 x 3.0 x 1.38 Inches

MQF500E Series  
139.7 x 82.55 x 62.9 mm  
5.5 x 3.25 x 2.48 Inches

- Package: Open Frame / Enclosed
- 240 Watt with Free Air Convection
- 500 Watt with 30 CFM FAN
- 4000VAC Input to Output 2MOPP Insulation
- High Efficiency up to 93%
- With P.F.C. Function >0.94
- Remote ON/OFF Function
- Built-in 12V/0.3A Auxiliary Output
- Standby 5V@1A with Fan, @0.4A without Fan
- EMI for Both Class I (with FG) and Class II (without FG) Configuration
- Suitable for BF Application with Appropriate System Consideration
- UL / IEC / EN 60601 3.1 Edition & UL / IEC / EN 60950 AM2 Safety

more detail please refer to page 42

**MQF2400 / E Series**

**ITE & Medical Switching Power Supply**

**240 watt**  
CE CB UL US

MQF2400 Series  
103.9 x 52.0 x 27.6 mm  
4.1 x 2.05 x 1.087 Inches

MQF240E Series  
104.0 x 62.0 x 49.5 mm  
4.1 x 2.44 x 1.95 Inches

- Package: Open Frame / Enclosed
- 160 Watt with Free Air Convection
- 240 Watt with 10CFM FAN
- 4000VAC Input to Output 2MOPP Insulation
- High Efficiency up to 93.5%
- With P.F.C. Function >0.9
- <0.5W No Load Input Power
- Built-in 12V / 0.5A Fan Supply
- EMI for Both Class I (with FG) and Class II (without FG) Configuration
- Suitable for BF Application with Appropriate System Consideration
- UL / IEC / EN 60601 3.1 Edition & UL / IEC / EN 60950 AM2 Safety

more detail please refer to page 40

**ABR300 / E / U Series**

**AC-DC ITE Full Brick**

**300 watt**  
CE CB UL US

ABR300 Series  
117.3 x 61.5 x 12.7 mm  
4.62 x 2.42 x 0.5 Inches

ABR300E Series  
139.7 x 82.55 x 50.0 mm  
5.5 x 3.25 x 1.97 Inches

ABR300U Series  
139.7 x 82.55 x 40.5 mm  
5.5 x 3.25 x 1.59 Inches

- Package: Brick / Enclosed / U Bracket
- 200 Watt with Free Air Convection (ABR300U)
- 300 Watt with 10CFM FAN (ABR300E/U)
- Power Module for PCB Mountable
- Universal Input: 90-264 VAC
- Full Brick Size with Base Plate
- Over Current Protection
- Over Voltage Protection
- Over Temperature Protection
- Short Circuit Protection
- Remote Sense
- CE, CB and UL Approvals

more detail please refer to page 44-46

**MFC15 / MZC20 / MTC30 / MSC60 Series**

**AC-DC ITE Power Module / AC-DC ITE Medical Power Module**

**15 watt 20 watt 30 watt 60 watt**  
CE CB UL US

MFC15 / MZC20 Series  
52.5 x 27.5 x 23.5 mm  
2.07 x 1.08 x 0.93 Inches

MTC30 Series  
64.1 x 45.6 x 23.5 mm  
2.52 x 1.8 x 0.93 Inches

MSC60 Series  
89.0 x 63.5 x 27.0 mm  
3.5 x 2.5 x 1.06 Inches

- Power Module for PCB Mountable
- Universal Input: 90-264 VAC, 47-440 Hz
- Low Standby <0.1W
- Regulated Output
- Low Ripple and Noise
- Optional with Screw Terminal
- Isolation Class II
- Small Size
- CE, CB and UL Approvals (60950, 60601 3.1 Edition)

more detail please refer to page 34-38

**AOD10 / AFD25 Series**

**AC-DC ITE Power Module / AC-DC Household Power Module**

**10 / 25 watt**  
CE CB UL US

AOD10 Series  
37.0 x 27.5 x 20.0 mm  
1.46 x 1.08 x 0.79 Inches

AFD25 Series  
52.5 x 27.5 x 23.5 mm  
2.07 x 1.08 x 0.93 Inches

- Power Module for PCB Mountable
- Universal Input: 90-264 VAC, 47-440 Hz
- Low Standby <0.1W
- Regulated Output
- Low Ripple and Noise
- Isolation Class II
- Small Size
- CE and UL Approvals (60950, 60335)

more detail please refer to page 32 and 33

**MQC100 / MQC150 Series**

**ITE & Medical Power Module**

**100 / 150 watt**  
CE CB UL US

MQC100 / MQC150 Series  
109.0 x 58.5 x 34.5 mm  
4.3 x 2.3 x 1.58 Inches

- 4000VAC Input to Output 2MOPP Insulation
- High Efficiency up to 93.5%
- With P.F.C. Function >0.9
- <0.5W No Load Input Power
- Protections: Over Load / Over Voltage / Over Temperature / Short Circuit
- Suitable for BF Application with Appropriate System Consideration
- UL / IEC / EN 60601 3.1 Edition & UL / IEC / EN 60950 AM2 Safety

more detail please refer to page 39

**AFC20H Series**

**AC-DC ITE Power Module**

**20 watt**  
CE CB UL US

AFC20H Series  
52.5 x 27.5 x 23.5 mm  
2.07 x 1.08 x 0.93 Inches

- Power Module for PCB Mountable
- Universal Input: 90-305 VAC, 47-440 Hz
- Low Standby <0.1W
- Regulated Output
- Low Ripple and Noise
- Isolation Class II
- Small Size
- CE and UL Approvals (60950)

more detail please refer to page 19

**ST60 Series**

**DC-DC Converter**

**60 watt**  
CE

52.8 x 27.5 x 13.5 mm  
2.08 x 1.08 x 0.53 Inches

- Power Module for PCB Mountable
- 4:1 Wide Input Range
- Operating Temperature: -40°C...+80°C
- Regulated Output and Low Ripple & Noise
- Remote ON/OFF Control

more detail please refer to page 74

AC-DC ITE Power Module

Output Power	Series	Picture	Circuit	I/P Voltage Range (V.AC)	Output Voltage Range (V.DC)	Isolation Voltage (V.AC)	Operating Temperature	Dimension (mm)	Page			
2W	AYC		Class II	90~305	Single 3.3 · 5 · 9 · 12 · 15 · 24	3000	-40°C~80°C	33.7 x 22.2 x 17.0 CE, RoHS, CB	08			
	AZC		Class II	90~305	Single 3.3 · 5 · 9 · 12 · 15 · 24	3000	-40°C~80°C	28.5 x 25.8 x 17.0 CE, RoHS, CB	08			
3W	AIC		Class II	90~264	Single 3.3 · 5 · 9 · 12 · 15 · 24	3000	-40°C~85°C	35.7 x 19.0 x 22.0 CE, RoHS	09			
4W	AOC		Class II	90~264	Single 3.3 · 5 · 8 · 9 · 12 · 14 · 15 · 24	3750	-40°C~70°C	37.0 x 27.5 x 17.5 CE, RoHS, CB	10			
	AOCH	Dual 5/3.3 · 8/5 · 12/5										
5W	AHC		Class II	90~264	Single 3.3 · 5 · 12 · 15 · 24	3000	-25°C~70°C or -40°C~70°C	51.2 x 25.8 x 15.4 CE, RoHS, CB	12			
	AHCN	-40°C~70°C										
7W	AUC		Class II	90~264	Single 5 · 12 · 15 · 24	3000	-40°C~70°C	27.4 x 27.4 x 18.7 CE, RoHS, CB	13			
8W	AHC08		Class II	90~305	Single 3.3 · 3.8 · 5 · 8 · 9 · 12 · 14 · 15 · 24	3000	-40°C~70°C	52.5 x 26.8 x 19.0 CE, RoHS, CB	14			
	ALC	Dual 5/3.3 · 8/5 · 12/5 · 12/7.5										
10W	AFC		Class II	90~264	Single 3.3 · 5 · 12 · 15 · 24	3000	-25°C~70°C or -40°C~70°C	52.5 x 27.5 x 23.5 CE, RoHS, CB	15			
	AFCN	-40°C~70°C										
	AOD10	NEW					Single 5 · 12 · 15 · 24			3000	-40°C~70°C	37.0 x 27.5 x 20.0 CE, RoHS, CB
15W	ANCN		Class II	90~264	Single 5 · 12 · 15 · 24	4000	-40°C~70°C	74.1 x 54.1 x 21.8 CE, RoHS, CB	16			
	APCN	54.7 x 44.9 x 21.0 CE, RoHS, CB										
	ATCN	64.3 x 45.1 x 21.7 CE, RoHS, CB										
	AVC	41.2 x 27.2 x 19.1 CE, RoHS, CB										
	MFC15	NEW						Single 5 · 9 · 12 · 15 · 24		4000	-40°C~80°C	52.5 x 27.5 x 23.5 CE, RoHS, CB
20W	AFC20		Class II	90~264	Single 3.3 · 5 · 12 · 15 · 24	3000	-40°C~70°C	52.5 x 27.5 x 23.5 CE, RoHS, CB	17			
	AFC20H	NEW						Single 3.3 · 5 · 12 · 15 · 24		3000	-40°C~70°C	52.5 x 27.5 x 23.5 CE, RoHS, CB
	AFC20N							Single 3.3 · 5 · 12 · 15 · 24		3000	-40°C~70°C	52.5 x 27.5 x 23.5 CE, RoHS, CB
	AKC	Single 3.3 · 5 · 7.35 · 9 · 12 · 15 · 24						3000		-25°C~70°C	69.5 x 47.5 x 21.7 CE, RoHS, CB	
	MZC20	NEW										Dual ±5 · ±12 · ±15 Triple 5/±12 · 5/±15
25W	AFD25	NEW	Class II	90~264	Single 3.3 · 5 · 12 · 15 · 24	3000	-40°C~70°C	52.5 x 27.5 x 23.5 CE, RoHS, CB	19			
	ASC	Single 3.3 · 5 · 12 · 15 · 24										
30W	ATC30		Class II	90~305	Single 3.3 · 5 · 12 · 15 · 24	3000	-40°C~70°C	64.0 x 45.0 x 23.5 CE, RoHS, CB	22			
	MTC30	NEW						Single 5 · 12 · 15 · 24		4000	-40°C~80°C	64.1 x 45.6 x 23.5 CE, RoHS, CB
	AJC	Single 3.3 · 5 · 9 · 12 · 15 · 24						3000		-40°C~70°C	89.5 x 64.1 x 25.0 CE, RoHS, CB	
ANC50	Dual ±5 · ±12 · ±15 · 5/±12 · 5/±15											
50W	ANC50		Class II	90~264	Single 5 · 12 · 15 · 24 · 48	3000	-40°C~70°C	74.1 x 54.1 x 21.8 CE, RoHS, CB	25			

AC-DC ITE Power Module

Output Power	Series	Picture	Circuit	I/P Voltage Range (V.AC)	Output Voltage Range (V.DC)	Isolation Voltage (V.AC)	Operating Temperature	Dimension (mm)	Page
60W	AEC60		Class I	90~264	Single 5 · 9 · 12 · 15 · 24 · 48	4000	-40°C~70°C	109.0 x 58.5 x 30.0 CE, RoHS	26
	MSC60	NEW	Class II	90~264	Single 5 · 9 · 12 · 15 · 24	4000	-40°C~80°C	89.0 x 63.5 x 27.0 CE, RoHS, CB	27
100W	AQC100		Class I	90~264	Single 12 · 15 · 24 · 48	3000	-25°C~70°C	109.0 x 58.5 x 30.0 CE, RoHS, CB	28
	MQC100	NEW	Class II	90~264	Single 12 · 24 · 48	4000 VAC or 5656 VDC	-30°C~70°C	109.0 x 58.5 x 34.5 CE, RoHS	30
125W	AQC125		Class I	90~264	Single 12 · 15 · 24 · 48	3000	-25°C~70°C	148.0 x 71.0 x 38.0 CE, RoHS, CB	29
150W	MQC150	NEW	Class II	90~264	Single 12 · 24 · 48	4000 VAC or 5656 VDC	-30°C~70°C	109.0 x 58.5 x 34.5 CE, RoHS	30

AC-DC Household Power Module

Output Power	Series	Picture	Circuit	I/P Voltage Range (V.AC)	Output Voltage Range (V.DC)	Isolation Voltage (V.AC)	Operating Temperature	Dimension (mm)	Page
10W	AOD10	NEW	Class II	90~264	Single 5 · 12 · 15 · 24	3000	-40°C~70°C	37.0 x 27.5 x 20.0 CE, RoHS, CB	32
25W	AFD25	NEW	Class II	90~264	Single 3.3 · 5 · 12 · 15 · 24	3000	-40°C~70°C	52.5 x 27.5 x 23.5 CE, RoHS, CB	33

AC-DC ITE Medical Power Module

Output Power	Series	Picture	Circuit	I/P Voltage Range (V.AC)	Output Voltage Range (V.DC)	Isolation Voltage (V.AC)	Operating Temperature	Dimension (mm)	Page
15W	MFC15	NEW	Class II	90~264	Single 5 · 9 · 12 · 15 · 24	4000	-40°C~80°C	52.5 x 27.5 x 23.5 CE, RoHS, CB	34
	MTC	Class II			90~264			Single 3.3 · 5 · 7.35 · 9 · 12 · 15 · 24 Dual ±5 · ±12 · ±15 Triple 5/±12 · 5/±15	
20W	MZC20	NEW	Class II	90~264	Single 12 · 24	4000	-40°C~80°C	52.5 x 27.5 x 23.5 CE, RoHS, CB	34
30W	MTC30	NEW	Class II	90~264	Single 5 · 12 · 15 · 24	4000	-40°C~80°C	64.1 x 45.6 x 23.5 CE, RoHS, CB	36
40W	MSC		Class II	90~264	Single 3.3 · 5 · 9 · 12 · 15 · 24	4000	-25°C~70°C or -40°C~70°C	89.0 x 63.5 x 27.0 CE, RoHS, CB	37
60W	MSC60	NEW			Single 5 · 9 · 12 · 15 · 24				
100W	MQC100	NEW			Single 12 · 24 · 48				
150W	MQC150	NEW	Class II	90~264	Single 12 · 24 · 48	4000 VAC or 5656 VDC	-30°C~70°C	109.0 x 58.5 x 34.5 CE, RoHS	39

AC-DC Medical Switching Power Supply

Output Power	Series	Picture	Package Style	Circuit	I/P Voltage Range (V.AC)	Output Voltage Range (V.DC)	Isolation Voltage (V.AC)	Operating Temperature	Dimension (mm)	Page
240W	MQF2400	NEW	Open Frame	Class II	90~264	12 · 24 · 48	4000 VAC or 5656 VDC	-30°C~70°C	103.9 x 52.0 x 27.6 CE, RoHS	40
	MQF240E	NEW	Enclosed	Class II	90~264	12 · 24 · 48	4000 VAC or 5656 VDC	-30°C~70°C	104.0 x 62.0 x 49.5 CE, RoHS	40
500W	MQF5000	NEW	Open Frame	Class II	90~264	12 · 24 · 48	4000 VAC or 5656 VDC	-30°C~70°C	127.8 x 76.2 x 35.0 CE, RoHS	42
	MQF500E	NEW	Enclosed	Class II	90~264	12 · 24 · 48	4000 VAC or 5656 VDC	-30°C~70°C	139.7 x 82.55 x 62.9 CE, RoHS	42

**AC-DC ITE Full Brick**

Output Power	Series	Picture	Package Style	Circuit	I/P Voltage Range (V.AC)	Output Voltage Range (V.DC)	Isolation Voltage (V.AC)	Operating Temperature	Dimension (mm)	Page
300W	<b>NEW</b> ABR300		Module	Class I	90~264	12、24、28、48	3000 VAC	-40°C~100°C	117.3 x 61.5 x 12.7 CE	44
	<b>NEW</b> ABR300E		Enclosed	Class I	90~264	12、24、28、48	3000 VAC	-40°C~100°C	139.7 x 82.55 x 50.0 CE	45
	<b>NEW</b> ABR300U		U Bracket	Class I	90~264	12、24、28、48	3000 VAC	-40°C~100°C	139.7 x 82.55 x 40.5 CE	46

**AC-DC ITE Switching Power Supply**

Output Power	Series	Picture	Package Style	Circuit	I/P Voltage Range (V.AC)	Output Voltage Range (V.DC)	Isolation Voltage (V.AC)	Operating Temperature	Dimension (mm)	Page
60W	AES600		Open Frame	Class I	90~264	5、9、12、15、24、48	3000 VAC or 4242 VDC	-40°C~70°C	103.9 x 52.1 x 25.4 CE	48
	AES60E		Enclosed	Class I	90~264	5、9、12、15、24、48	3000 VAC or 4242 VDC	-40°C~70°C	105.0 x 58.0 x 38.1 CE	48
	AES60U		U Bracket	Class I	90~264	5、9、12、15、24、48	3000 VAC or 4242 VDC	-40°C~70°C	76.3 x 50.6 x 31.5 CE	50
	SZA600		Open Frame	Class I	90~264	5、12、15、24、48	3000 VAC or 4242 VDC	-30°C~70°C	80.0 x 59.7 x 38.0 CE	50
100W	AQF1000		Open Frame	Class I	90~264	12、15、24、48	3000 VAC or 4242 VDC	-25°C~70°C	103.9 x 54.1 x 25.0 CE	52
160W	AQF160		Open Frame	Class I	90~264	12、15、24、48	3000 VAC or 4242 VDC	-25°C~70°C	103.9 x 52.1 x 29.0 CE	53
180W	AQF1200		Open Frame	Class I	90~264	5、12、15、24、48	4000 VAC or 5656 VDC	-25°C~70°C	127.0 x 76.2 x 29.5 CE	54
	AQF120E		Enclosed	Class I	90~264	5、12、15、24、48	4000 VAC or 5656 VDC	-25°C~70°C	127.0 x 82.2 x 38.1 CE	54
	AQF120U		U Bracket	Class I	90~264	5、12、15、24、48	4000 VAC or 5656 VDC	-25°C~70°C	127.0 x 82.2 x 38.1 CE	54
240W	AQF240E		Enclosed	Class I	90~264	5、12、15、24、28、32、36、48	4000 VAC or 5656 VDC	-10°C~70°C	150.0 x 106.0 x 35.0 CE	56
	AQF240U		U Bracket	Class I	90~264	5、12、15、24、28、32、36、48	4000 VAC or 5656 VDC	-10°C~70°C	150.0 x 106.0 x 35.0 CE	56
	<b>NEW</b> MQF2400		Open Frame	Class II	90~264	12、24、48	4000 VAC or 5656 VDC	-30°C~70°C	103.9 x 52.0 x 27.6 CE	58
	<b>NEW</b> MQF240E		Enclosed	Class II	90~264	12、24、48	4000 VAC or 5656 VDC	-30°C~70°C	104.0 x 62.0 x 49.5 CE	58
360W	AQF360E		Enclosed	Class I	90~264	12、24、36、48、54	3000 VAC or 4242 VDC	-25°C~70°C	172.7 x 81.3 x 53.3 CE	60
	AQF360F		Enclosed	Class I	90~264	12、24、36、48、54	3000 VAC or 4242 VDC	-25°C~70°C	197.7 x 81.3 x 40.0 CE	60
	AQF360U		U Bracket	Class I	90~264	12、24、36、48、54	3000 VAC or 4242 VDC	-25°C~70°C	172.7 x 81.3 x 38.0 CE	60
480W	AQFV480E		Enclosed	Class I	90~264	12、24、36、48	3000 VAC or 4242 VDC	-20°C~70°C	177.8 x 106.5 x 60.3 CE	62
	AQFV480F		Enclosed	Class I	90~264	12、24、36、48	3000 VAC or 4242 VDC	-20°C~70°C	202.8 x 106.5 x 45.0 CE	62
	AQFV480U		U Bracket	Class I	90~264	12、24、36、48	3000 VAC or 4242 VDC	-20°C~70°C	177.8 x 106.5 x 45.0 CE	62
500W	<b>NEW</b> MQF5000		Open Frame	Class II	90~264	12、24、48	4000 VAC or 5656 VDC	-30°C~70°C	127.8 x 76.2 x 35.0 CE	64
	<b>NEW</b> MQF500E		Enclosed	Class II	90~264	12、24、48	4000 VAC or 5656 VDC	-30°C~70°C	139.7 x 82.55 x 62.9 CE	64
600W	AQF600		Enclosed	Class I	90~264	12、24、48、54	3000 VAC or 4242 VDC	-25°C~65°C	228.5 x 105.0 x 44.0 CE	51

**DC-DC Converter**

Output Power	Series	Picture	Input Voltage Range (V.DC)	Output Voltage Range (V.DC)	Isolation Voltage (V.DC)	Operating Temperature	Dimension (mm)	Page
1.5W	SB1R5		4.5~5.5、10.8~13.2 21.6~26.4、43.2~52.8	Single	5、12、15、24	500	-25°C~70°C	31.8 x 20.3 x 10.2 CE
				Dual	±5、±12、±15			
5W	SB05		4:1 Range 9~36 18~75	Single	3.3、5、12、15、24	1600	-25°C~70°C	31.8 x 20.3 x 10.2 CE
				Dual	±5、±12、±15			
	ZA05		4:1 Range 9~36 18~75	Single	3.3、5、12、15、24	1600	-25°C~70°C	31.8 x 20.3 x 10.2 CE
				Dual	±5、±12、±15			
ZC05		4:1 Range 9~36 18~75	Single	3.3、5、12、15、24	1600	-25°C~70°C	31.8 x 20.3 x 10.2 CE	
8W	SB08		2:1 Range 9~18 18~36 36~75	Single	3.3、5、12、15、24	1600	-25°C~70°C	31.8 x 20.3 x 10.2 CE
				Dual	±5、±12、±15			
SH08		4:1 Range 9~36 18~75	Single	3.3、5、12、15、24	1600	-25°C~60°C	31.8 x 20.3 x 11.2 CE	
			Dual	±5、±12、±15				
SH10		2:1 Range 9~18 18~36 36~75	Single	3.3、5、12、15、24	1600	-25°C~60°C	31.8 x 20.3 x 11.2 CE	
			Dual	±5、±12、±15				
ST10		2:1 Range 9~18 18~36 36~75	Single	3.3、5、12、15、24	1600	-25°C~70°C	50.1 x 25.4 x 10.8 CE	
			Dual	±5、±12、±15				
ST15		2:1 Range 9~18 18~36 36~75	Single	3.3、5、12、15、24	1600	-25°C~70°C	50.1 x 25.4 x 10.8 CE	
			Dual	±5、±12、±15				
SW15		2:1 Range 9~18 18~36 36~75	Single	3.3、5、12、15	1600	-40°C~85°C	25.4 x 25.4 x 11.0 CE	
			Dual	±5、±12、±15				
ZB15		2:1 Range 9~18 18~36 36~75	Single	3.3、5、12、15、24	1600	-25°C~70°C	50.1 x 25.4 x 10.8 CE	
			Dual	±5、±12、±15				
ST20		2:1 Range 18~36 36~75	Single	2.5、3.3、5	1600	-25°C~70°C	50.1 x 25.4 x 10.8 CE	
			Dual	±5、±12、±15				
SW20		2:1 Range 9~18 18~36 36~75	Single	3.3、5、12、15	1600	-40°C~85°C	25.4 x 25.4 x 11.0 CE	
			Dual	±5、±12、±15				
30W	ST30		2:1 Range 18~36 36~75	Single	2.5、3.3、5、12、15、24	1600	-40°C~85°C	50.8 x 25.4 x 11.0 CE
				Dual	±5、±12、±15			
60W	<b>NEW</b> ST60		4:1 Range 18~72	Single	12、15、24	1600	-40°C~80°C	52.8 x 27.4 x 14.0 CE

Series Name	Output Power	Input Voltage	Output Voltage & Output Type
<b>SB</b>	<b>1R5</b>	<b>5</b>	<b>12 S</b>
SB1R5	1R5=1.5 watt	2:1 Range	Single: 1.5S=1.5 Vdc Dual: 5D= ±5 Vdc
SB	05=5 watt	3=3.0~3.6 Vdc	1.8S=1.8 Vdc 12D= ±12 Vdc
SH	08=8 watt	5=4.5~5.5 Vdc	2.1S=2.1 Vdc 15D= ±15 Vdc
SW	10=10 watt	12=4.5~13.5 Vdc or 7.0~13.5 Vdc	2.5S=2.5 Vdc
ST	15=15 watt	or 9~18 Vdc or 9~36 Vdc	3.3S=3.3 Vdc
ZA	20=20 watt	or 10.8~13.2 Vdc	5S=5 Vdc Triple: 5S12D=5 / ±12 Vdc
ZB	30=30 watt	24=18~36 Vdc or 18~75 Vdc	12S=12 Vdc
ZC	60=60 watt	or 21.6~26.4 Vdc	15S=15 Vdc
		48=36~75 Vdc or 43.2~52.8 Vdc	24S=24 Vdc
		4:1 Range	
		24F=9~36 Vdc or 10~40 Vdc	
		48F=18~75 Vdc	

**AC-DC ITE Power Module**

Series Name	Output Voltage & Output Type	Option	Option
<b>AFC</b>	<b>3.3 S</b>	<b>E1</b>	<b>A2</b>
AEC60 AFC(20) AFCN AFC20H AFC20N AHC(08) AHCN AIC AJC AKC ALC ANC50 ANCN AOC AOCH AOD10(25) AQC100 ASC ATC ATC30 ATCN AUC AVC AYC AZC MFC15 MQC100(150) MSC60 MTC30 MZC20	Single: 3.3S=3.3 Vdc 5S=5 Vdc 7.35S=7.35 Vdc 8S=8 Vdc 9S=9 Vdc 12S=12 Vdc 14S=14 Vdc 15S=15 Vdc 24S=24 Vdc 48S=48 Vdc  Triple: 5S12D=5 / ±12 Vdc 5S15D=5 / ±15 Vdc	Dual: 5D= ±5 Vdc 12D= ±12 Vdc 15D= ±15 Vdc 5S3.3S= 5 / 3.3 Vdc 5S12S= 5 / 12 Vdc 5S24S= 5 / 24 Vdc 8S5S= 8 / 5 Vdc 12S5S= 12 / 5 Vdc 12S7.5S= 12 / 7.5 Vdc	E1=Operating Starts at -40°C only for AHC / AFC  Din Rail Type only for AKC / AJC / AEC60 / MFC15 / MZC20 / MTC30 / MSC60

**AC-DC Household Power Module**

Series Name	Output Power	Output Voltage & Output Type
<b>AOD</b>	<b>10</b>	<b>12 S</b>
AOD	10=10 watt 25=25 watt	Single: 3.3S=3.3 Vdc 5S=5 Vdc 12S=12 Vdc 15S=15 Vdc 24S=24 Vdc

**AC-DC ITE & Medical Power Module**

Series Name	Output Power	Output Voltage & Output Type	Option	Option
<b>MQC</b>	<b>100</b>	<b>3.3 S</b>	<b>E1</b>	<b>A2</b>
MFC MQC MSC MTC MZC	15=15 watt 20=20 watt 30=30 watt 60=60 watt 100=100 watt 150=150 watt	Single: 3.3S=3.3 Vdc 5S=5 Vdc 7.35S=7.35 Vdc 9S=9 Vdc 12S=12 Vdc 14S=14 Vdc 15S=15 Vdc 24S=24 Vdc 48S=48 Vdc  Triple: 5S12D=5 / ±12 Vdc 5S15D=5 / ±15 Vdc	Dual: 5D= ±5 Vdc 12D= ±12 Vdc 15D= ±15 Vdc 5S12S= 5 / 12 Vdc 5S24S= 5 / 24 Vdc	E1=Operating Starts at -40°C only for MTC (15W) / MSC (40W)  Din Rail Type only for MFC15 / MZC20 / MTC30 / MSC60

**AC-DC Medical Switching Power Supply**

Series Name	Output Power	Package Type	Output Voltage & Output Type
<b>MQF</b>	<b>240</b>	<b>O</b>	<b>12 S</b>
MQF	240=240 watt 500=500 watt	E=Enclosed O=Open Frame	Single: 12S=12 Vdc 24S=24 Vdc 48S=48 Vdc

**AC-DC ITE Full Brick**

Series Name	Output Power	Package Type	Output Voltage & Output Type
<b>ABR</b>	<b>300</b>	<b>O</b>	<b>12 S</b>
ABR	300=300 watt	none=Module E=Enclosed U=U Bracket	Single: 12S=12 Vdc 24S=24 Vdc 28S=28 Vdc 48S=48 Vdc

**AC-DC Switching Power Supply**

Series Name	Output Power	Package Type	Output Voltage & Output Type	Option
<b>AES</b>	<b>60</b>	<b>O</b>	<b>5 S</b>	<b>DRK</b>
AES AQF MQF SZA	60=60 watt 100=100 watt 120=180 watt 160=160 watt 240=240 watt 360=360 watt 480=480 watt 500=500 watt 600=600 watt	E=Enclosed F=Enclosed+Fan O=Open Frame U=U Bracket	Single: 5S=5 Vdc 9S=9 Vdc 12S=12 Vdc 15S=15 Vdc 24S=24 Vdc 28S=28 Vdc 32S=32 Vdc 36S=36 Vdc 48S=48 Vdc 54S=54 Vdc	Din Rail Kit (Enclosed Package Type) only for AES60 / AQF120 / AQF240

**Quotation & Order**

Arch sales respond the inquiries in 24 hours for the standard products. For O.D.M. Projects with completed specification, Arch should quote within 5 days.

Purchase orders must be placed to Arch by mail, e-mail or fax. To avoid any misunderstanding or confusion, Arch would not accept orders by oral discussion.

For order confirmation, Arch will provide Per forma Invoice with shipping schedule by fax, If you fail to receive PI, please contact Arch within 3 working days.

**Delivery & Return**

Most of our standard products are available in the stock and small quantity can be shipped no later than 5 working days. For large quantity or new products, 4-6 weeks lead-time is required.

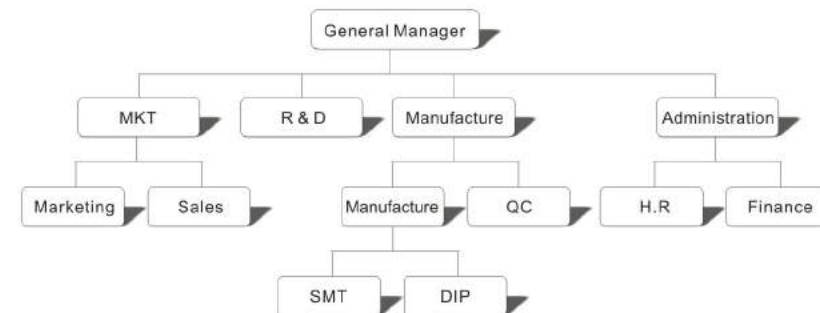
All goods to be returned after RMA number is given by ARCH, otherwise they won't be accepted. All returned goods shall be repaid by customer unless prior confirmation by ARCH.

**Warranty**

All products of Arch are guaranteed in 3 years from the date of the shipment, Customers may consider return for credit or exchange, please make contact with Arch for further information.

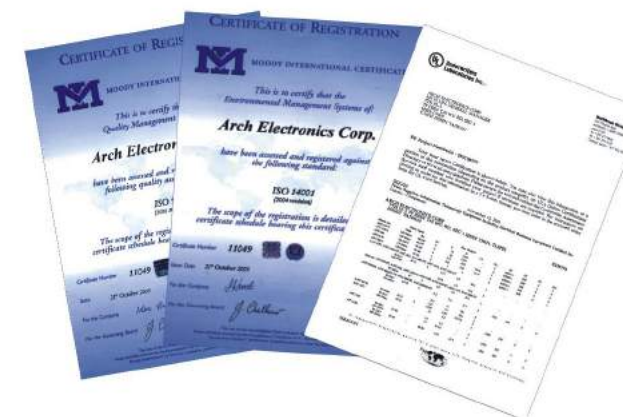
Any product problem please contact sales window for failure analysis or RMA form if required.

**Organization**



**Certifications**

- ISO 9001 Certificate No.11049
- ISO 14001 Certificate No.11049
- CE Approved
- CB Authorisation
- RoHS Compliance



**Attention**

Information furnished by Arch is believed to be accurate and reliable. If there is any variance between the data presented in the catalogue and the specification, the specification sheets should take priority.

Please refer to Arch website [www.archcorp.com.tw](http://www.archcorp.com.tw) for the latest specification information. For continuing product improvement, Arch reserves the right to revise any information in the catalogue without any further notification.

**ODM Welcome**

ARCH is professional Taiwan base power supply manufacturer, two factories in Taipei county and China, received ISO-9001 and ISO-14001 certificate. We have own SMT, DIP lines in Taipei county and China, with highly trained production line employees and complete quality process.

Our experienced R&D team has the strong capacity to meet your requirement. Please contact [sales@archcorp.com.tw](mailto:sales@archcorp.com.tw) for details included NRE quotation.

2 Watt

2 Watt

AYC Series

AZC Series

- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-305 VAC, 47-63 Hz
- ◆ Fully Encapsulated Plastic Case
- ◆ Low Ripple and Noise
- ◆ Low Standby< 0.3W
- ◆ Isolation Class II
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty

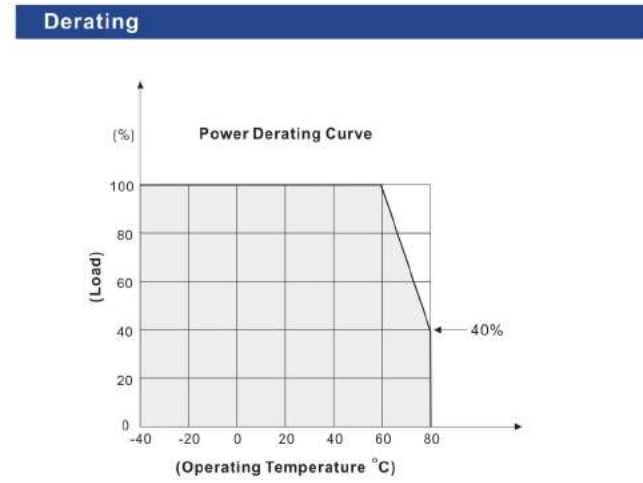


- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-305 VAC, 47-63 Hz
- ◆ Fully Encapsulated Plastic Case
- ◆ Low Ripple and Noise
- ◆ Low Standby< 0.3W
- ◆ Isolation Class II
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty

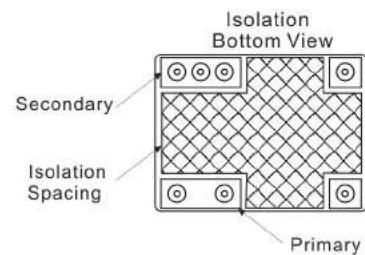
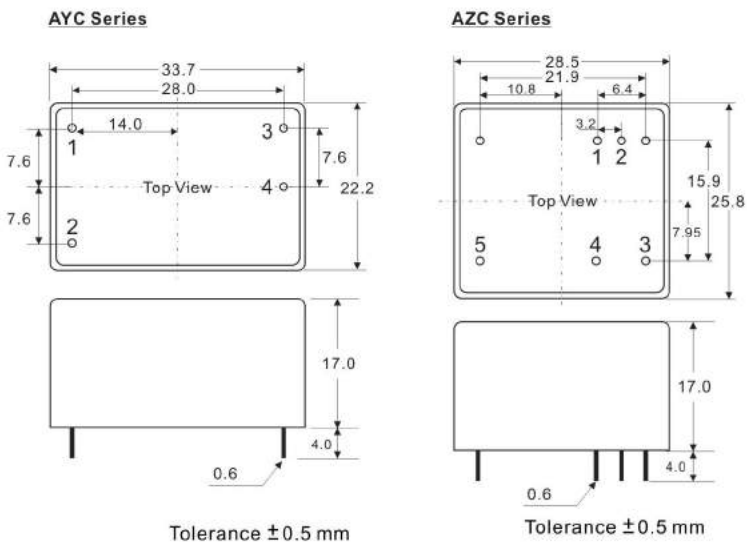


Input Specifications	AYC	AZC
Voltage Range	90 ~ 305 VAC or 120 ~ 430 VDC	
Frequency	47 ~ 63 Hz	
Output Specifications	AYC	AZC
Output Power	2 Watt (max.)	
Voltage Accuracy	±6% (Full Load and Nominal Vin)	
Minimum Load	0% (at Full Load)	
Line Regulation	±5% (LL to HL at Full Load) (typ.)	
Load Regulation	±6% (10% to 100% at Full Load) (typ.)	
Ripple & Noise	300mV (Vp-p) (20MHz bandwidth) (max.)	
Temperature Coefficient	±0.02% / °C	
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)	
General Specifications	AYC	AZC
Efficiency (see table list)	66% to 75% (typ.)	
Isolation Voltage	3000 VAC (min.)	
Isolation Resistance	10 <sup>8</sup> Ω (Input to Output) (min.)	
Operating Temperature	-40°C to +80°C (with Derating)	
Storage Temperature	-40°C to +85°C	
Humidity	95% RH (max.)	
Cooling	Free-air Convection	
Physical Specifications	AYC	AZC
Dimension	33.7 x 22.2 x 17.0 mm	28.5 x 25.8 x 17.0 mm
(Tolerance ±0.5 mm)	1.33 x 0.87 x 0.67 inches	1.12 x 1.02 x 0.67 inches
Weight	20.1 g	19.9 g
Case Material	Plastic resin (flammability to UL 94V-0)	

Models				
▶▶ AYC Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AYC-3.3S	90~305	3.3	600	66
AYC-5S	90~305	5	400	70
AYC-9S	90~305	9	222	73
AYC-12S	90~305	12	167	73
AYC-15S	90~305	15	133	73
AYC-24S	90~305	24	83	75
▶▶ AZC Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AZC-3.3S	90~305	3.3	600	66
AZC-5S	90~305	5	400	70
AZC-9S	90~305	9	222	73
AZC-12S	90~305	12	167	73
AZC-15S	90~305	15	133	73
AZC-24S	90~305	24	83	75



Outline Dimensions & Pin Connections



Pin#	AYC	AZC
1	AC IN (N)	+DC OUT
2	AC IN (L)	-DC OUT
3	-DC OUT	AC IN (N)
4	+DC OUT	AC IN (L)
5		NC

3 Watt

AIC Series

A Type

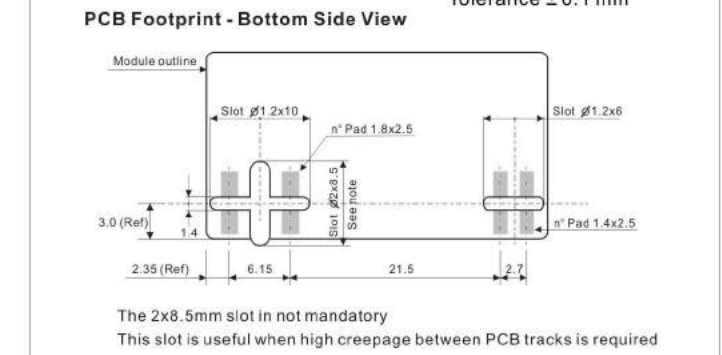
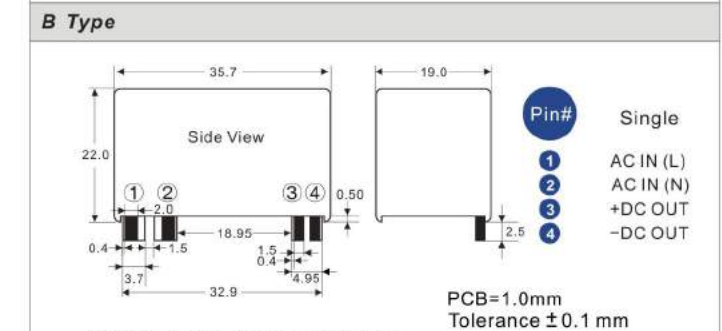
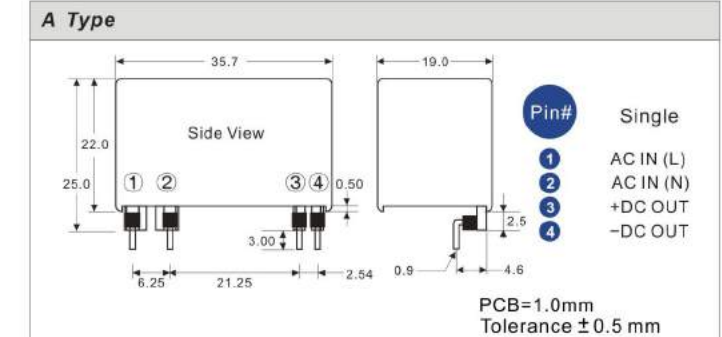
B Type



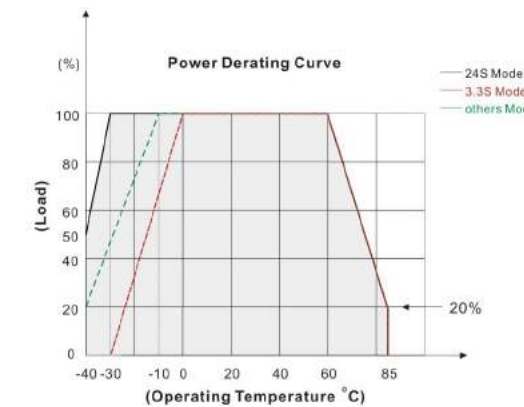
Input Specifications	
Voltage Range	90 ~ 264 VAC or 120 ~ 370 VDC
Frequency	47 ~ 63 Hz
Output Specifications	
Output Power	3 Watt (max.)
Voltage Accuracy	±10% (Full Load and Nominal Vin)
Minimum Load	0% (at Full Load)
Line Regulation	3.3S: ±5% (typ.) others: ±2% (typ.) (LL to HL at Full Load)
Load Regulation	3.3S: ±5% (typ.) others: ±2% (typ.) (0% to 100% at Full Load)
Ripple & Noise	3.3S: <250mV (Vp-p) (max.) 5S: <200mV (Vp-p) (max.) 9S: <150mV (Vp-p) (max.) 12S,15S,24S: <100mV (Vp-p) (max.) (20MHz bandwidth)
Temperature Coefficient	±0.02% / °C (max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)
General Specifications	
Efficiency (see table list)	69% to 77% (typ.)
Isolation Voltage	3750 VAC (min.)
Isolation Resistance	10 <sup>8</sup> Ω (Input to Output) (min.)
Operating Temperature	-40°C to +85°C (with Derating)
Storage Temperature	-40°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Physical Specifications	
Dimension	35.7 x 19.0 x 22.0 mm
(Tolerance ±0.5 mm)	1.41 x 0.75 x 0.86 inches
Weight	26 g
Case Material	Plastic resin (flammability to UL 94V-0)

Models				
▶▶ AIC Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AIC-3.3S	90~264	3.3	900	69
AIC-5S	90~264	5	600	71
AIC-9S	90~264	9	333	76
AIC-12S	90~264	12	250	76
AIC-15S	90~264	15	200	76
AIC-24S	90~264	24	125	77

Outline Dimensions & Pin Connections



Derating



4 Watt

4 Watt

AOC Series

AOCH Series

- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-440 Hz
- ◆ Fully Encapsulated Plastic Case
- ◆ Single and Dual Output
- ◆ Low Ripple and Noise
- ◆ Low Standby < 0.3W
- ◆ Isolation Class II
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty



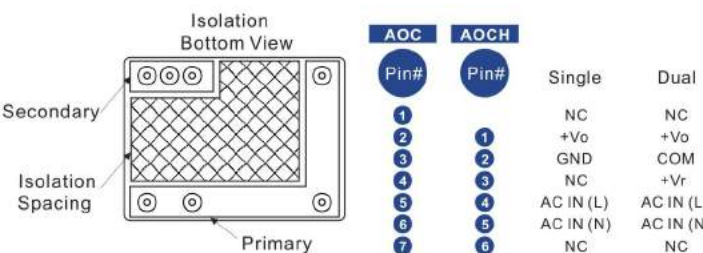
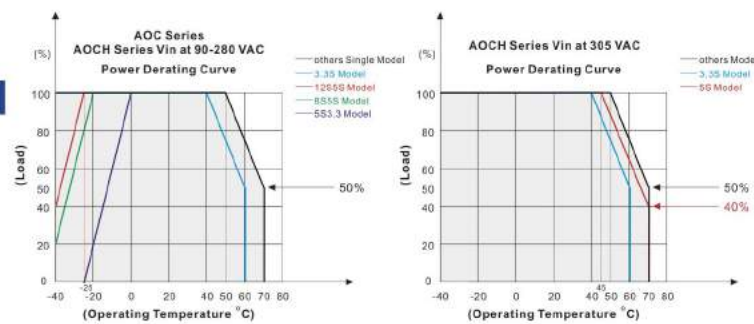
- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-305 VAC, 47-440 Hz
- ◆ Fully Encapsulated Plastic Case
- ◆ Single and Dual Output
- ◆ Low Ripple and Noise
- ◆ Low Standby < 0.3W
- ◆ Isolation Class II
- ◆ CE, UL Approvals
- ◆ 3-Year Warranty



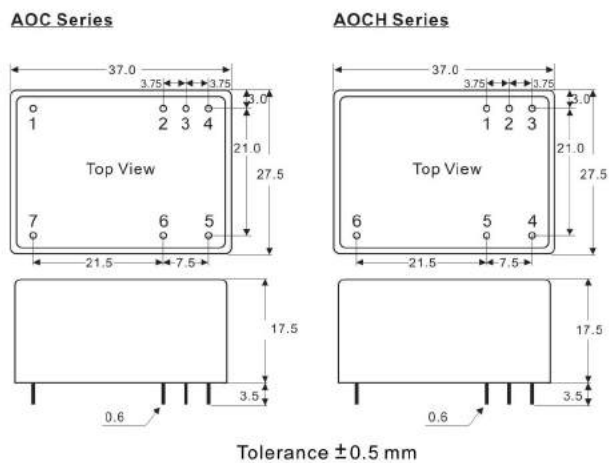
Input Specifications	AOC	AOCH
Voltage Range	90 ~ 264 VAC or 120 ~ 370 VDC	90 ~ 305 VAC or 120 ~ 430 VDC
Frequency	47 ~ 440 Hz	
Output Specifications	AOC	AOCH
Output Power	4 Watt (max.)	
Voltage Accuracy	Single: ±2%	
(Full Load and Nominal Vin)	Dual: Vo:±2% Vr:±5%	
Minimum Load	Single: 0% / Dual: 25% (at Full Load)	
Line Regulation	Single: ±0.2% (typ.)	3.3S:±0.5% (typ.)
(LL to HL at Full Load)	5S~24S: ±0.2% (typ.)	
Load Regulation	Dual: Vo:±0.2% Vr:±3% (typ.)	
(Single: 0% to 100% at Full Load)	3.3S~9S:±1% (typ.)	3.3S:±1.5% (typ.)
(Dual: 25% to 100% at Full Load)	12S~24S:±0.5% (typ.)	5S~24S: ±0.5% (typ.)
Ripple & Noise	3.3S,5S: <250mV (Vp-p) (max.)	
(20MHz bandwidth)	8S,9S,5S3.3S: <200mV (Vp-p) (max.)	
	12S,14S,8S5S: <150mV (Vp-p) (max.)	
	15S,24S,12S5S: <100mV (Vp-p) (max.)	
Temperature Coefficient	±0.02% / °C (max.)	
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)	
General Specifications	AOC	AOCH
Efficiency (see table list)	68% to 77%	(typ.)
Isolation Voltage	3000 VAC (min.)	
Isolation Resistance	10 <sup>8</sup> Ω (Input to Output) (min.)	
Operating Temperature	-40°C to +70°C (with Derating)	
Storage Temperature	-40°C to +85°C	
Humidity	95% RH (max.)	
Cooling	Free-air Convection	
Physical Specifications	AOC	AOCH
Dimension	37.0 x 27.5 x 17.5 mm	
(Tolerance ±0.5 mm)	1.46 x 1.08 x 0.69 inches	
Weight	26 g	
Case Material	Plastic resin (flammability to UL 94V-0)	

Models				
▶▶ AOC Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AOC-3.3S	90~264	3.3	1200	68
AOC-5S	90~264	5	800	72
AOC-8S	90~264	8	500	74
AOC-9S	90~264	9	444	75
AOC-12S	90~264	12	333	76
AOC-14S	90~264	14	286	76
AOC-15S	90~264	15	267	76
AOC-24S	90~264	24	167	77
▶▶ AOC Dual Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AOC-5S3.3S	90~264	Vo:5 Vr:3.3	600 / 150	72
AOC-8S5S	90~264	Vo:8 Vr:5	375 / 120	74
AOC-12S5S	90~264	Vo:12 Vr:5	250 / 120	75
▶▶ AOCH Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AOCH-3.3S	90~305	3.3	1200	68
AOCH-5S	90~305	5	800	72
AOCH-8S	90~305	8	500	74
AOCH-9S	90~305	9	444	75
AOCH-12S	90~305	12	333	76
AOCH-14S	90~305	14	286	76
AOCH-15S	90~305	15	267	76
AOCH-24S	90~305	24	167	77
▶▶ AOCH Dual Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AOCH-5S3.3S	90~305	Vo:5 Vr:3.3	600 / 150	72
AOCH-8S5S	90~305	Vo:8 Vr:5	375 / 120	74
AOCH-12S5S	90~305	Vo:12 Vr:5	250 / 120	75

Derating



Outline Dimensions & Pin Connections



NEW

10 Watt

AOD10 Series

Household Power Module

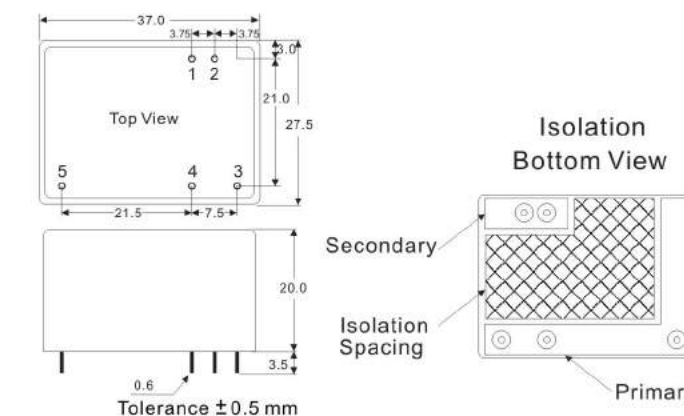
Household Power Module



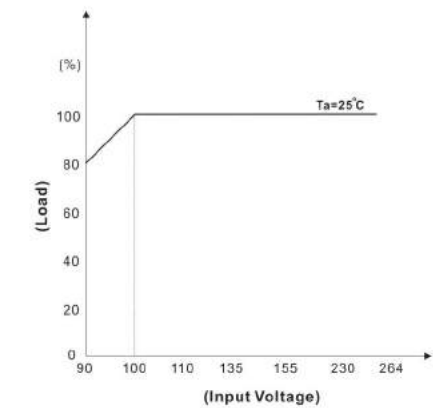
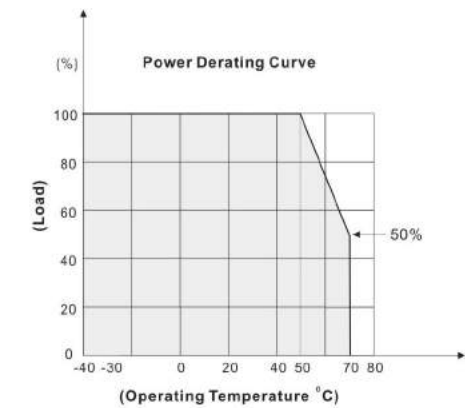
- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-63 Hz
- ◆ Maximum No-Load Watts < 0.1W
- ◆ Low Ripple and Noise
- ◆ Isolation Class II
- ◆ CE, CB, UL Approvals (60950, 60335)
- ◆ 3-Year Warranty

Input Specifications	
Voltage Range	90 ~ 264VAC or 120 ~ 370 VDC
Frequency	47 ~ 440 Hz
Output Specifications	
Output Power	10 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	0% (at Full Load)
Line Regulation	±0.2% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (0% to 100% at Full Load) (typ.)
Ripple & Noise	5S: <150mV (Vp-p) (max.)
(20MHz bandwidth)	12S: <150mV (Vp-p) (max.)
	15S: <160mV (Vp-p) (max.)
	48S: 1% Vout (Vp-p) (max.)
Temperature Coefficient	±0.02% / °C (max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)
General Specifications	
Efficiency (see table list)	80% to 85% (typ.)
Isolation Voltage	3000 VAC (min.)
Isolation Resistance	10 <sup>8</sup> Ω (Input to Output) (min.)
Operating Temperature	-40°C to +70°C (with Derating)
Storage Temperature	-40°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Physical Specifications	
Dimension	37.0 x 27.5 x 20.0 mm
(Tolerance ±0.5 mm)	1.46 x 1.08 x 0.79 inches
Weight	35 g
Case Material	Plastic resin (flammability to UL 94V-0)

Outline Dimensions & Pin Connections



Derating



5 Watt

5 Watt

AHC Series

AHCN Series

- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-440 Hz
- ◆ Regulated Output and Low Ripple and Noise
- ◆ -40°C Starting Optional (AHC-E1)
- ◆ Small Size: 2.0 x 1.0 x 0.597 inches
- ◆ Isolation Class II
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty

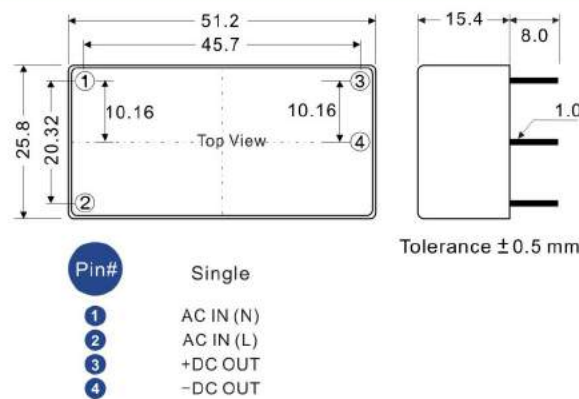
- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-440 Hz
- ◆ Regulated Output and Low Ripple and Noise
- ◆ <0.2W No Load Input Power
- ◆ Small Size: 2.0 x 1.0 x 0.597 inches
- ◆ Isolation Class II
- ◆ CE, UL Approvals
- ◆ 3-Year Warranty



Input Specifications	AHC	AHCN
Voltage Range	90 ~ 264 VAC or 120 ~ 370 VDC	
Frequency	47 ~ 440 Hz	
Output Specifications	AHC	AHCN
Output Power	5.5 Watt (max.)	
Voltage Accuracy	±2% (Full Load and Nominal Vin)	
Minimum Load	0% (at Full Load)	
Line Regulation	±0.3% (LL to HL at Full Load) (typ.)	
Load Regulation	±0.5% (5% to 100% at Full Load) (typ.)	
Ripple (Vp-p) (max.) (20MHz bandwidth)	<0.2% Vout +40mV	3.3S,5S: <80mV others: <120mV
Noise (Vp-p) (max.) (20MHz bandwidth)	<0.5% Vout +50mV	3.3S,5S: <80mV others: <120mV
Temperature Coefficient	±0.02% / °C (max.)	±0.05% / °C (max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)	
General Specifications	AHC	AHCN
Efficiency (see table list)	68% to 77% (typ.)	67% to 77% (typ.)
Isolation Voltage	3000 VAC	
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output)	
Operating Temperature	-25°C to +70°C (AHC) -40°C to +70°C (AHC-E1) (with Derating)	-40°C to +70°C (with Derating)
Storage Temperature	-40°C to +85°C	
Humidity	95% RH (max.)	
Cooling	Free-air Convection	
Physical Specifications	AHC	AHCN
Dimension	51.2 x 25.8 x 15.4 mm	
(Tolerance ±0.5 mm)	2.0 x 1.0 x 0.6 inches	
Weight	30 g	
Case Material	Plastic resin (flammability to UL 94V-0)	

Models				
▶▶ AHC Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AHC-3.3S	90~264	3.3	1250	68
AHC-5S	90~264	5	1000	71
AHC-12S	90~264	12	420	75
AHC-15S	90~264	15	333	75
AHC-24S	90~264	24	230	77
▶▶ AHCN Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AHCN-3.3S	90~264	3.3	1250	67
AHCN-5S	90~264	5	1000	70
AHCN-12S	90~264	12	420	75
AHCN-15S	90~264	15	333	75
AHCN-24S	90~264	24	230	77

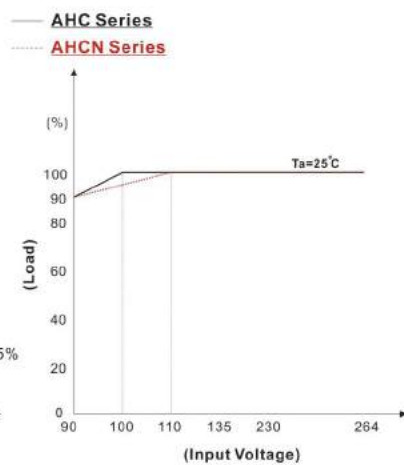
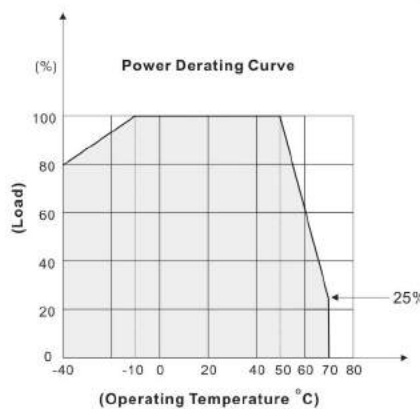
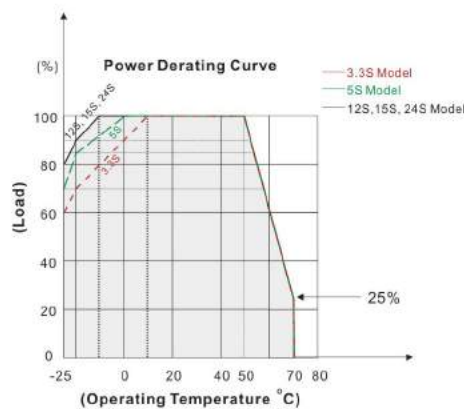
Outline Dimensions & Pin Connections



Derating

AHC Series

AHCN Series



7Watt

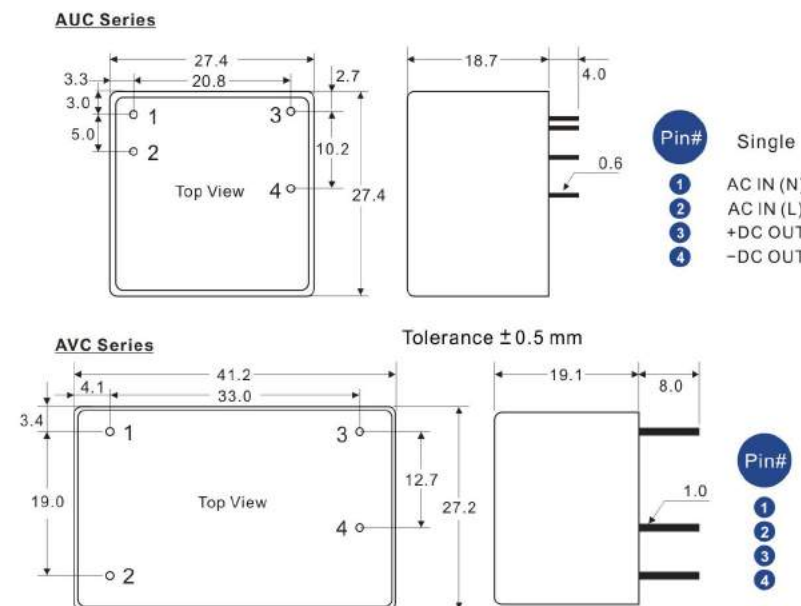
AUC Series

- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 50 / 60 Hz
- ◆ Fully Encapsulated Plastic Case
- ◆ Maximum No-Load Watts < 0.1W
- ◆ Isolation Class II
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty



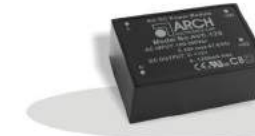
Input Specifications	AUC	AVC
Voltage Range	90 ~ 264 VAC or 120 ~ 370 VDC	
Frequency	50 / 60 Hz	
Output Specifications	AUC	AVC
Output Power	7 Watt (max.)	15 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)	
Minimum Load	0% (at Full Load)	
Line Regulation	±0.5% (LL to HL at Full Load) (typ.)	
Load Regulation	±1% (10% to 100% at Full Load) (typ.)	
Ripple (20MHz bandwidth)	5S:100mV (Vp-p)(max.) 12S:100mV (Vp-p)(max.) 15S:100mV (Vp-p)(max.) 24S:200mV (Vp-p)(max.)	5S:100mV (Vp-p)(max.) 12S:120mV (Vp-p)(max.) 15S:150mV (Vp-p)(max.) 24S:240mV (Vp-p)(max.)
Noise (20MHz bandwidth)	5S:150mV (Vp-p)(max.) 12S:150mV (Vp-p)(max.) 15S:150mV (Vp-p)(max.) 24S:200mV (Vp-p)(max.)	5S:100mV (Vp-p)(max.) 12S:120mV (Vp-p)(max.) 15S:150mV (Vp-p)(max.) 24S:240mV (Vp-p)(max.)
Temperature Coefficient	±0.02% / °C (max.)	±0.05% / °C (max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)	
General Specifications	AUC	AVC
Efficiency (see table list)	77% to 80% (typ.)	80% to 85% (typ.)
Isolation Voltage	3000 VAC (min.)	4000 VAC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)	
Operating Temperature	-40°C to +70°C (with Derating)	
Storage Temperature	-40°C to +85°C	
Humidity	95% RH (max.)	
Cooling	Free-air Convection	
Physical Specifications	AUC	AVC
Dimension	27.4 x 27.4 x 18.7 mm	41.2 x 27.2 x 19.1 mm
(Tolerance ±0.5 mm)	1.08 x 1.08 x 0.736 inches	1.62 x 1.07 x 0.75 inches
Weight	26 g	40 g
Case Material	Plastic resin (flammability to UL 94V-0)	

Outline Dimensions & Pin Connections



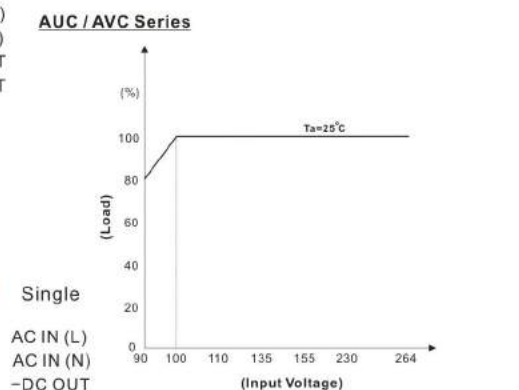
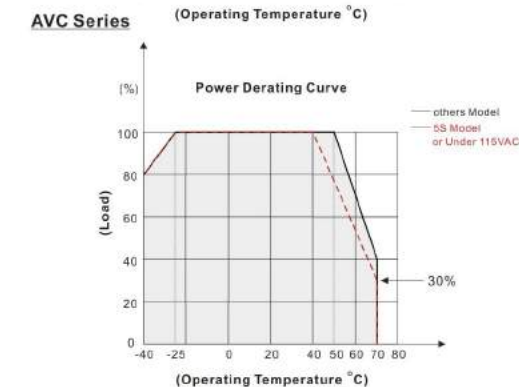
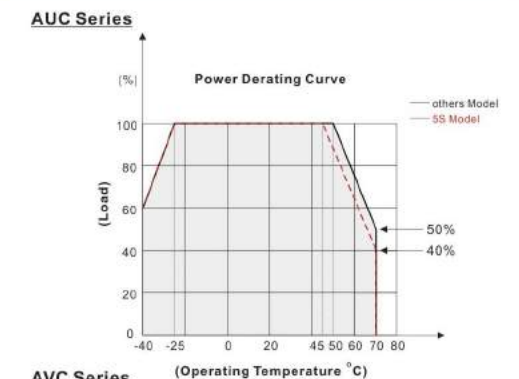
AVC Series

- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-63 Hz
- ◆ Fully Encapsulated Plastic Case
- ◆ Maximum No-Load Watts < 0.1W
- ◆ Isolation Class II
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty



Models				
▶▶ AUC Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AUC-5S	90~264	5	1260	77
AUC-12S	90~264	12	583	80
AUC-15S	90~264	15	466	80
AUC-24S	90~264	24	292	80
▶▶ AVC Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AVC-5S	90~264	5	2700	80
AVC-12S	90~264	12	1250	84
AVC-15S	90~264	15	1000	84
AVC-24S	90~264	24	625	85

Derating





8 Watt

8 Watt

10 Watt

10Watt

ALC Series

AHC08 Series

AFC Series

AFCN Series

- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-305 VAC, 47-440 Hz
- ◆ Maximum No-Load Watts < 0.3W
- ◆ Single and Dual Output
- ◆ Low Ripple and Noise
- ◆ Isolation Class II
- ◆ CE, UL Approvals
- ◆ 3-Year Warranty



- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-305 VAC, 47-440 Hz
- ◆ Regulated Output and Low Ripple and Noise
- ◆ Low Standby< 0.3W
- ◆ Small Size as AHC 5Watt with 8Watt Higher Power
- ◆ Single and Dual Output
- ◆ Isolation Class II
- ◆ CE, UL Approvals
- ◆ 3-Year Warranty



- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-440Hz
- ◆ Regulated Output and Low Ripple and Noise
- ◆ -40°C Starting Optional (AFC-E1)
- ◆ Small Size: 2.07 x 1.08 x 0.93 inches
- ◆ Isolation Class II
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty



- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-440Hz
- ◆ Regulated Output and Low Ripple and Noise
- ◆ Low Standby <0.25W
- ◆ Small Size: 2.07 x 1.08 x 0.93 inches
- ◆ Isolation Class II
- ◆ CE, UL Approvals
- ◆ 3-Year Warranty



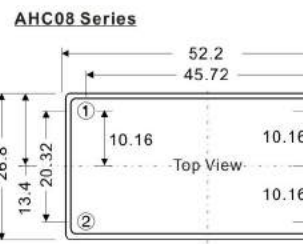
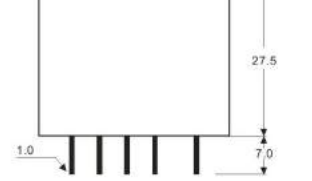
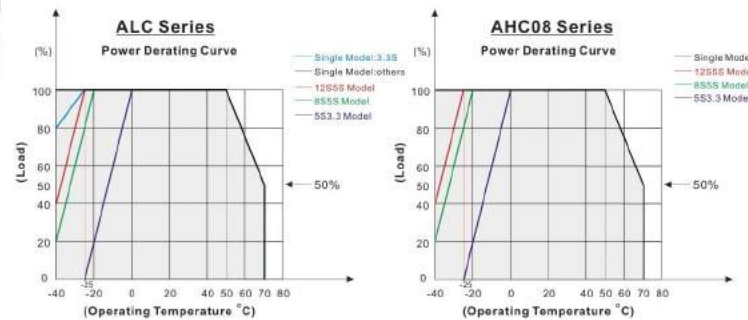
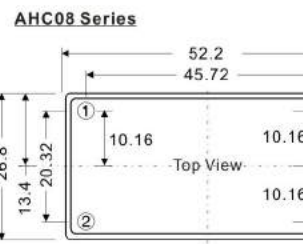
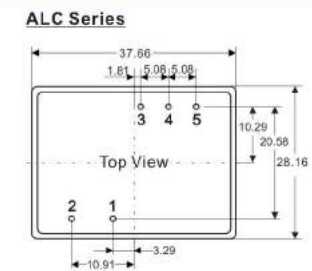
Input Specifications	ALC	AHC08
Voltage Range	90 ~ 305VAC or 120 ~ 430 VDC	
Frequency	47 ~ 440 Hz	
Output Specifications	ALC	AHC08
Output Power	8 Watt (max.)	
Voltage Accuracy	Single: ±2%	Single: ±2%
(Full Load and Nominal Vin)	5S3.3S: Vo:±2% Vr: ±15%	5S3.3S: Vo:±2% Vr: ±15%
	others: Vo:±2% Vr: ±10%	others: Vo:±2% Vr: ±5%
Minimum Load	Single: 0% / Dual: 25% (at Full Load)	
Line Regulation	Single: ±0.2% (typ.)	(typ.)
(LL to HL at Full Load)	Dual: Vo:±0.2% Vr: ±3% (typ.)	
Load Regulation	3.3S: ±3% (typ.)	3.3S-9S:±1% (typ.)
(ALC Single:0% to 100% at Full Load)	5S: ±2% (typ.)	12S-24S±0.5% (typ.)
(ALC Dual:10% to 100% at Full Load)	others: ±0.5% (typ.)	
(AHC08:balanced)	Dual: Vo:±0.5% Vr: ±5% (typ.)	Dual: Vo:±0.5% Vr: ±5% (typ.)
Ripple	24S: <150mV (Vp-p) (max.)	(Vp-p) (max.)
(20MHz bandwidth)	others: <100mV (Vp-p) (max.)	
Noise	24S: <200mV (Vp-p) (max.)	(Vp-p) (max.)
(20MHz bandwidth)	others: <150mV (Vp-p) (max.)	
Temperature Coefficient	±0.02% / °C (max.)	(max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)	
General Specifications	ALC	AHC08
Efficiency (see table list)	69% to 81%	(typ.)
Isolation Voltage	3000 VAC	(min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output)	(min.)
Operating Temperature	-40°C to +70°C (with Derating)	
Storage Temperature	-40°C to +85°C	
Humidity	95% RH (max.)	
Cooling	Free-air Convection	
Physical Specifications	ALC	AHC08
Dimension	37.66 x 28.16 x 27.5 mm	52.5x26.8x19.0 mm
(Tolerance ±0.5 mm)	1.48 x 1.1 x 1.08 inches	2.055x1.055x0.75 inches
Weight	45 g	35 g
Case Material	Plastic resin (flammability to UL 94V-0)	

Models				
▶▶ ALC Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ALC-3.3S	90~305	3.3	2000	69
ALC-5S	90~305	5	1600	75
ALC-8S	90~305	8	1000	78
ALC-9S	90~305	9	888	79
ALC-12S	90~305	12	666	79
ALC-14S	90~305	14	571	80
ALC-15S	90~305	15	533	80
ALC-24S	90~305	24	335	81
▶▶ ALC Dual Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ALC-5S3.3S	90~305	Vo:5 Vr:3.3	1600 / 310	73
ALC-8S5S	90~305	Vo:8 Vr:5	1000 / 100	78
ALC-12S5S	90~305	Vo:12 Vr:5	666 / 100	79
▶▶ AHC08 Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AHC08-3.3S	90~305	3.3	2000	69
AHC08-3.8S	90~305	3.8	2100	71
AHC08-5S	90~305	5	1600	72
AHC08-8S	90~305	8	1000	79
AHC08-9S	90~305	9	888	79
AHC08-12S	90~305	12	666	79
AHC08-14S	90~305	14	571	80
AHC08-15S	90~305	15	533	80
AHC08-24S	90~305	24	335	81
▶▶ AHC08 Dual Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AHC08-5S3.3S	90~305	Vo:5 Vr:3.3	1600 / 310	71
AHC08-8S5S	90~305	Vo:8 Vr:5	1000 / 150	77
AHC08-12S5S	90~305	Vo:12 Vr:5	666 / 200	78
AHC08-12S7.5S	90~305	Vo:12 Vr:7.5	560 / 250	78

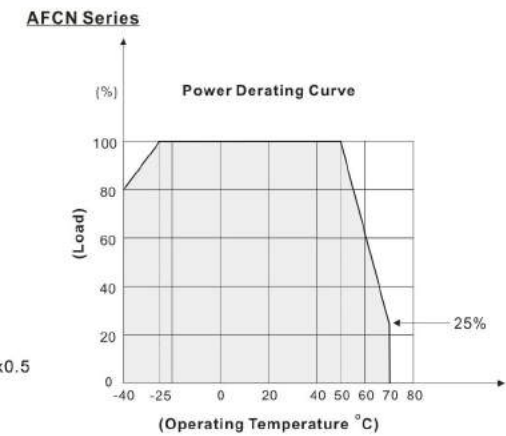
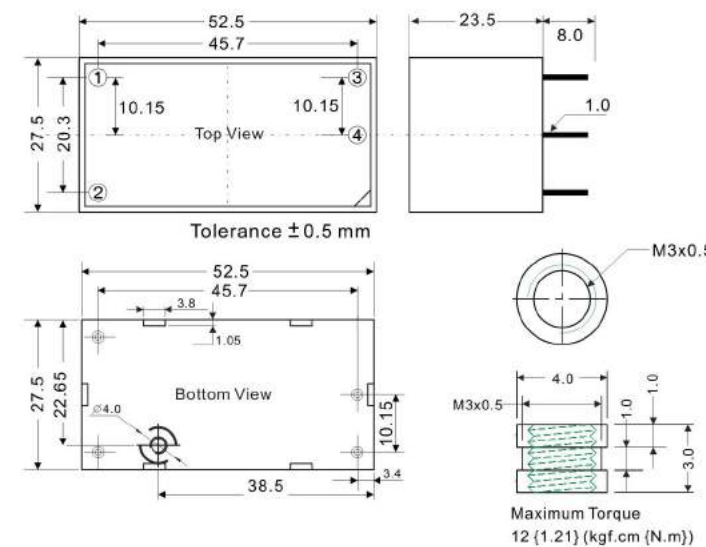
Input Specifications	AFC	AFCN
Voltage Range	90 ~ 264 VAC or 120 ~ 370 VDC	
Frequency	47 ~ 440 Hz	
Output Specifications	AFC	AFCN
Output Power	10 Watt (max.)	20 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)	
Minimum Load	0% (at Full Load)	
Line Regulation	±0.3% (typ.)	±0.5% (typ.)
(LL to HL at Full Load)		
Load Regulation	±0.5% (typ.)	±1% (typ.)
(5% to 100% at Full Load)		
Ripple	<0.2% Vout +40mV (Vp-p) (max.)	3.3S,5S: 75mVp-p (max.) others: 1% Vout (max.)
Noise	<0.5% Vout +50mV (Vp-p) (max.)	3.3S,5S: 120mVp-p(max.) others: 1% Vout (max.)
(20MHz bandwidth)		
Temperature Coefficient	±0.02% / °C (max.)	±0.05% / °C (max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)	
General Specifications	AFC	AFCN
Efficiency (see table list)	74% to 82% (typ.)	
Isolation Voltage	3000 VAC	
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output)	
Operating Temperature	-25°C to +70°C (AFC)	-40°C to +70°C (with Derating)
	-40°C to +70°C (AFC-E1)	(with Derating)
Storage Temperature	-40°C to +85°C	
Humidity	95% RH (max.)	
Cooling	Free-air Convection	
Physical Specifications	AFC	AFCN
Dimension	52.5 x 27.5 x 23.5 mm	
(Tolerance ±0.5 mm)	2.07 x 1.08 x 0.93 inches	
Weight	51 g	58 g
Case Material	Plastic resin (flammability to UL 94V-0)	

Models				
▶▶ AFC Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AFC-3.3S	90~264	3.3	2500	74
AFC-5S	90~264	5	2000	79
AFC-12S	90~264	12	833	82
AFC-15S	90~264	15	667	78
AFC-24S	90~264	24	417	80
▶▶ AFCN Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AFCN-3.3S	90~264	3.3	2500	74
AFCN-5S	90~264	5	2000	79
AFCN-12S	90~264	12	833	82
AFCN-15S	90~264	15	667	78
AFCN-24S	90~264	24	417	80

Derating



Outline Dimensions & Pin Connections



Pin#	AFC	AFCN
1	AC IN (N)	AC IN (L)
2	AC IN (L)	AC IN (N)
3	+DC OUT	+DC OUT
4	-DC OUT	-DC OUT



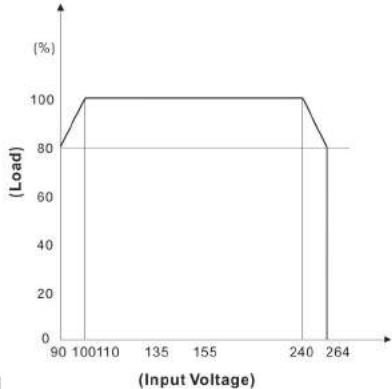
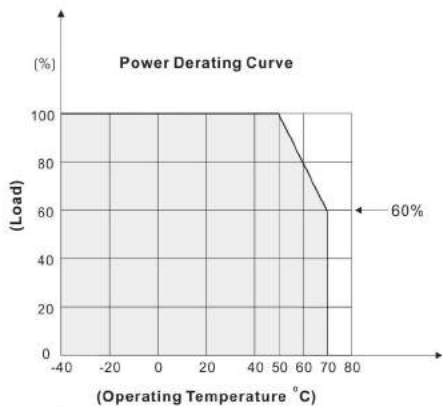
**15 Watt**  
**APCN/ATCN/ANCN Series**



- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 50 / 60 Hz
- ◆ Low Standby < 0.3W
- ◆ High Efficiency
- ◆ Isolation 4KV AC
- ◆ Isolation Class II
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty

Input Specifications	
Voltage Range	90 ~ 264 VAC or 120 ~ 370 VDC
Frequency	50 / 60 Hz
Output Specifications	
Output Power	15 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Line Regulation	±0.5% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (10% to 100% at Full Load) (typ.)
Ripple & Noise (20MHz bandwidth)	5S: <100mV (Vp-p) (typ.) 12S: <120mV (Vp-p) (typ.) 15S: <200mV (Vp-p) (typ.) 24S: <240mV (Vp-p) (typ.)
Temperature Coefficient	±0.02% / °C (max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)
General Specifications	
Efficiency (see table list)	78% to 82% (typ.)
Isolation Voltage	4000 VAC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-40°C to +70°C (with Derating)
Storage Temperature	-40°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Physical Specifications	
Dimension (Tolerance ±0.5 mm)	64.3 x 45.1 x 21.7 mm 2.53 x 1.78 x 0.85 inches
Weight	92 g
Case Material	Plastic resin (flammability to UL 94V-0)

**Derating**



- Pin# Single
- ① AC IN (N)
  - ② AC IN (L)
  - ③ -DC OUT
  - ④ +DC OUT

**Models**

▶▶ **APCN Single Output**

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
APCN-5S	90~264	5	3000	78
APCN-12S	90~264	12	1250	82
APCN-15S	90~264	15	1000	81
APCN-24S	90~264	24	625	82

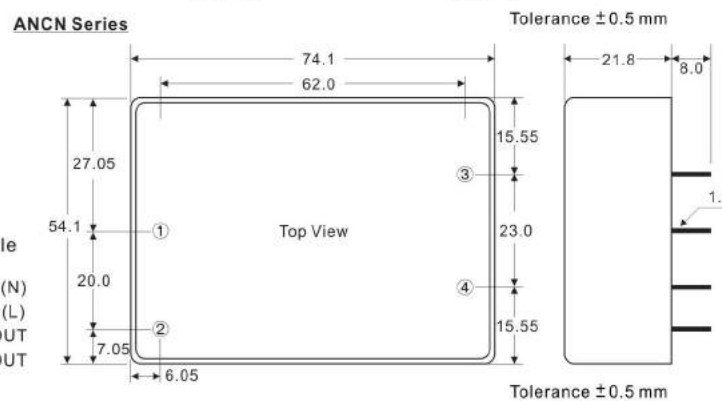
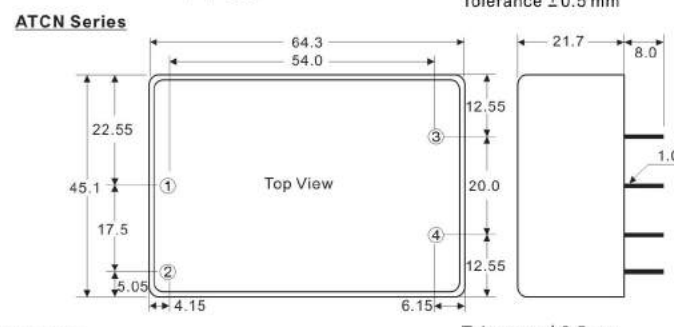
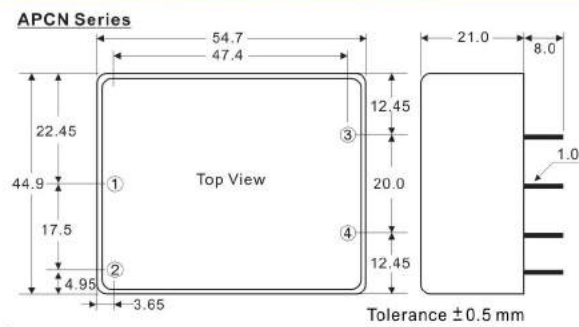
▶▶ **ATCN Single Output**

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ATCN-5S	90~264	5	3000	78
ATCN-12S	90~264	12	1250	82
ATCN-15S	90~264	15	1000	81
ATCN-24S	90~264	24	625	82

▶▶ **ANCN Single Output**

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ANCN-5S	90~264	5	3000	78
ANCN-12S	90~264	12	1250	82
ANCN-15S	90~264	15	1000	81
ANCN-24S	90~264	24	625	82

**Outline Dimensions & Pin Connections**



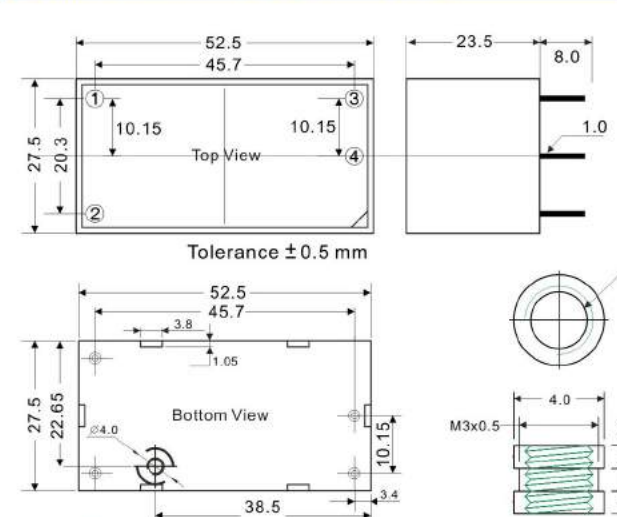
**10 Watt**  
**AFC20 Series**



- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-440Hz
- ◆ Low Standby <0.5W
- ◆ Regulated Output and Low Ripple and Noise
- ◆ Small Size as AFC 10Watt with 20Watt Higher Power
- ◆ Isolation Class II
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty

Input Specifications	AFC20	AFC20N
Voltage Range	90 ~ 264VAC or 120 ~ 370 VDC	
Frequency	47 ~ 440 Hz	
Output Specifications		
Output Power	20 Watt (max.)	
Voltage Accuracy	±2% (Full Load and Nominal Vin)	
Minimum Load	0% (at Full Load)	
Line Regulation	±0.5% (LL to HL at Full Load) (typ.)	
Load Regulation	±1% (5% to 100% at Full Load) (typ.)	
Ripple (20MHz bandwidth)	3.3S,5S: 75mV (Vp-p) (max.) others: 1% Vout (Vp-p) (max.)	
Noise (20MHz bandwidth)	3.3S,5S: 120mV (Vp-p) (max.) others: 1% Vout (Vp-p) (max.)	
Temperature Coefficient	±0.02% / °C (max.)	±0.05% / °C (max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)	
General Specifications		
Efficiency (see table list)	74% to 83% (typ.)	73% to 83% (typ.)
Isolation Voltage	3000 VAC	(min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output)	(min.)
Operating Temperature	-40°C to +70°C (with Derating)	
Storage Temperature	-40°C to +85°C	
Humidity	95% RH (max.)	
Cooling	Free-air Convection	
Physical Specifications		
Dimension (Tolerance ±0.5 mm)	52.5 x 27.5 x 23.5 mm 2.07 x 1.08 x 0.93 inches	
Weight	59 g	62 g
Case Material	Plastic resin (flammability to UL 94V-0)	

**Outline Dimensions & Pin Connections**



- Pin# Single
- ① AC IN (L)
  - ② AC IN (N)
  - ③ +DC OUT
  - ④ -DC OUT

**20Watt**  
**AFC20N Series**



- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-440Hz
- ◆ Low Standby <0.25W
- ◆ Regulated Output and Low Ripple and Noise
- ◆ Small Size as AFCN 10Watt with 20Watt Higher Power
- ◆ Isolation Class II
- ◆ CE, UL Approvals
- ◆ 3-Year Warranty

**Models**

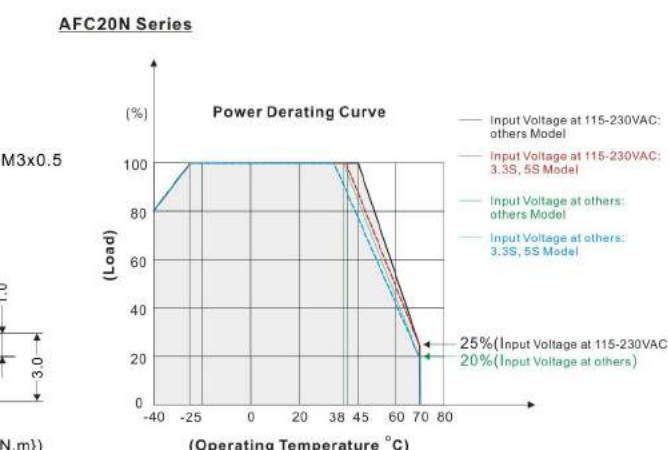
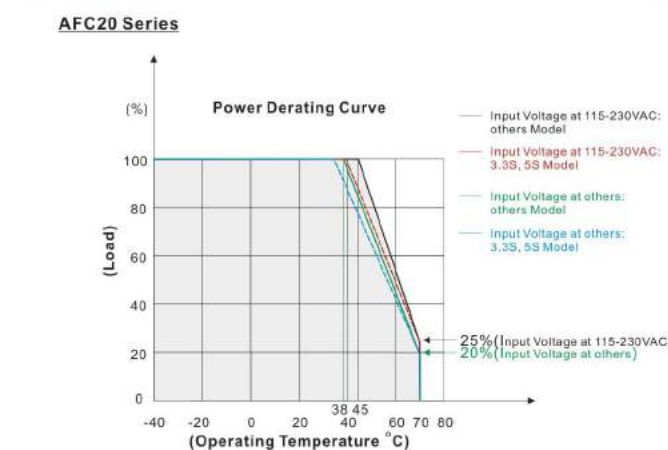
▶▶ **AFC20 Single Output**

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AFC20-3.3S	90~264	3.3	3600	74
AFC20-5S	90~264	5	3600	78
AFC20-12S	90~264	12	1660	82
AFC20-15S	90~264	15	1330	83
AFC20-24S	90~264	24	833	83

▶▶ **AFC20N Single Output**

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AFC20N-3.3S	90~264	3.3	3600	73
AFC20N-5S	90~264	5	3600	78
AFC20N-12S	90~264	12	1660	82
AFC20N-15S	90~264	15	1330	83
AFC20N-24S	90~264	24	833	83

**Derating**



**NEW** **15 Watt**

**MFC15 Series** ITE Medical Power Module

- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-440Hz
- ◆ <0.1W No Load Input Power
- ◆ Regulated Output and Low Ripple and Noise
- ◆ Small Size: 2.07 x 1.08 x 0.93 inches
- ◆ Optional with Screw Terminal
- ◆ Isolation Class II
- ◆ CE, CB, UL, cUL Approvals
- ◆ 3-Year Warranty



**NEW** **20Watt**

**MZC20 Series** ITE Medical Power Module

- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-440Hz
- ◆ Low Standby <0.1W
- ◆ Regulated Output and Low Ripple and Noise
- ◆ Small Size: 2.07 x 1.08 x 0.93 inches
- ◆ Optional with Screw Terminal
- ◆ Isolation Class II
- ◆ CE, CB, UL, cUL Approvals
- ◆ 3-Year Warranty



Input Specifications	MFC15	MZC20
Frequency	90 ~ 264VAC or 120 ~ 370 VDC	
Voltage Range	47 ~ 440 Hz	
Output Specifications	MFC15	MZC20
Output Power	15 Watt (max.)	20 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)	
Line Regulation	±0.5% (LL to HL at Full Load) (typ.)	
Load Regulation	±1% (5% to 100% at Full Load) (typ.)	
Ripple (Vp-p) (max.) (20MHz bandwidth)	5S,9S: 75mV others:1% Vout	12S: 150mV 24S: 240mV
Noise (Vp-p) (max.) (20MHz bandwidth)	5S,9S: 120mV others:1% Vout	12S: 150mV 24S: 240mV
Temperature Coefficient	±0.05% / °C (max.)	
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)	
General Specifications	MFC15	MZC20
Efficiency (see table list)	79% to 85% (typ.)	82% to 83% (typ.)
Isolation Voltage	4000VAC or 5656VDC (min.)	
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)	
Operating Temperature	-40°C to +80°C (with Derating)	
Storage Temperature	-40°C to +90°C	
Altitude During Operation	5000m	
Atmospheric Pressure	70 kPa to 106 kPa	
Humidity	up to 95% RH (max.)	
Cooling	Free-air Convection	
Physical Specifications	MFC15	MZC20
Dimension (Tolerance ±0.5 mm)	52.5 x 27.5 x 23.5 mm	
Weight	60 g	52 g
Case Material	Plastic resin (flammability to UL 94V-0)	

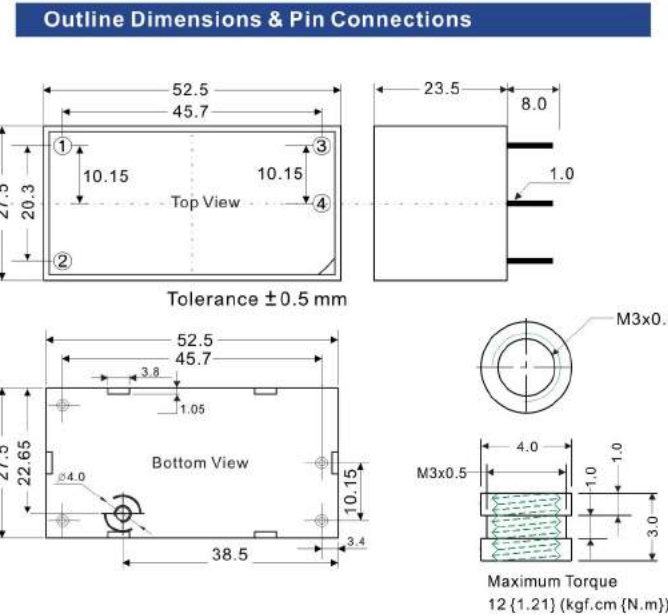
**Models**

►► **MFC15 Single Output**

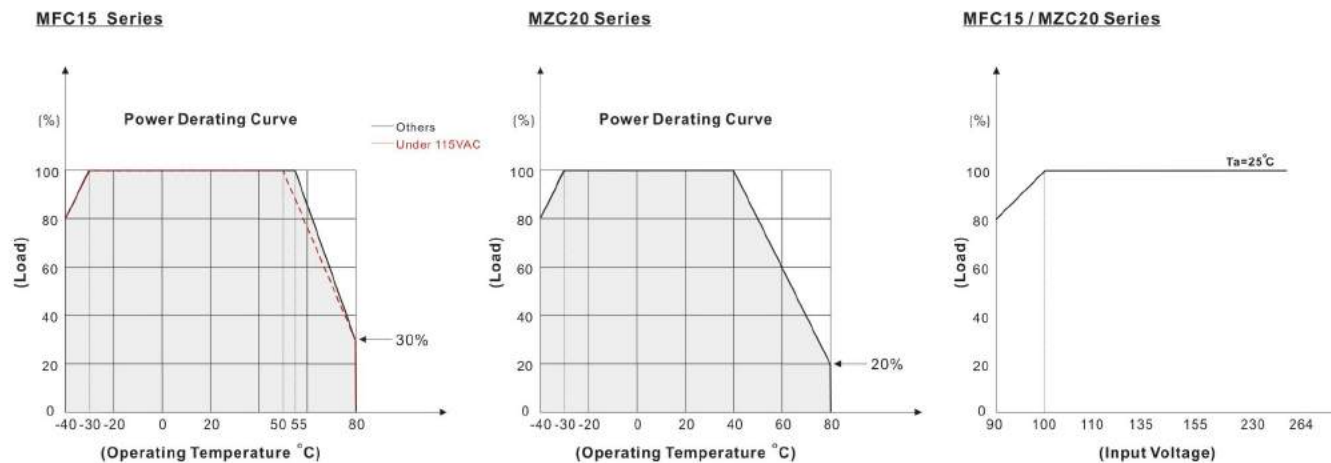
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
MFC15-5S	90~264	5	3000	79
MFC15-9S	90~264	9	1666	80
MFC15-12S	90~264	12	1250	84
MFC15-15S	90~264	15	1000	84
MFC15-24S	90~264	24	625	85

►► **MZC20 Single Output**

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
MZC20-12S	90~264	12	1667	83
MZC20-24S	90~264	24	833	82



Derating



**NEW** **20 Watt**

**AFC20H Series**

- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-305 VAC, 47-440Hz
- ◆ Low Standby <0.1W
- ◆ Regulated Output and Low Ripple and Noise
- ◆ Small Size as AFCN 10Watt with 20Watt Higher Power
- ◆ Isolation Class II
- ◆ CE, UL Approvals (Pending)
- ◆ 3-Year Warranty



**NEW** **25Watt**

**AFD25 Series** Household Power Module

- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-440Hz
- ◆ Low Standby <0.1W
- ◆ Regulated Output and Low Ripple and Noise
- ◆ Small Size as AFCN 10Watt with 20Watt Higher Power
- ◆ Isolation Class II
- ◆ CE, CB, UL Approvals (60950, 60335)
- ◆ 3-Year Warranty



Input Specifications	AFC20H	AFC25
Voltage Range	90 ~ 305 VAC or 120 ~ 430 VDC	90 ~ 264 VAC or 120 ~ 370 VDC
Frequency	47 ~ 440 Hz	
Output Specifications	AFC20H	AFC25
Output Power	20 Watt (max.)	25 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)	
Minimum Load	0% (at Full Load)	
Line Regulation	±1% (LL to HL at Full Load) (typ.)	
Load Regulation (5% to 100% at Full Load)	5S: ±3% (typ.) others: ±1% (typ.)	
Ripple & Noise (20MHz bandwidth)	5S:120mV (Vp-p)(max.) 12S:120mV (Vp-p)(max.) 15S:150mV (Vp-p)(max.) 24S:240mV (Vp-p)(max.)	5S:120mV (Vp-p)(max.) 12S:150mV (Vp-p)(max.) 15S:160mV (Vp-p)(max.) 24S:240mV (Vp-p)(max.)
Temperature Coefficient	±0.05% / °C (max.)	
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)	
General Specifications	AFC20H	AFC25
Efficiency (see table list)	82% to 86% (typ.)	
Isolation Voltage	3000 VAC (min.)	
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)	
Operating Temperature	-40°C to +70°C (with Derating)	
Storage Temperature	-40°C to +85°C	
Humidity	95% RH (max.)	
Cooling	Free-air Convection	
Physical Specifications	AFC20H	AFC25
Dimension (Tolerance ±0.5 mm)	52.5 x 27.5 x 23.5 mm	
Weight	62 g	
Case Material	Plastic resin (flammability to UL 94V-0)	

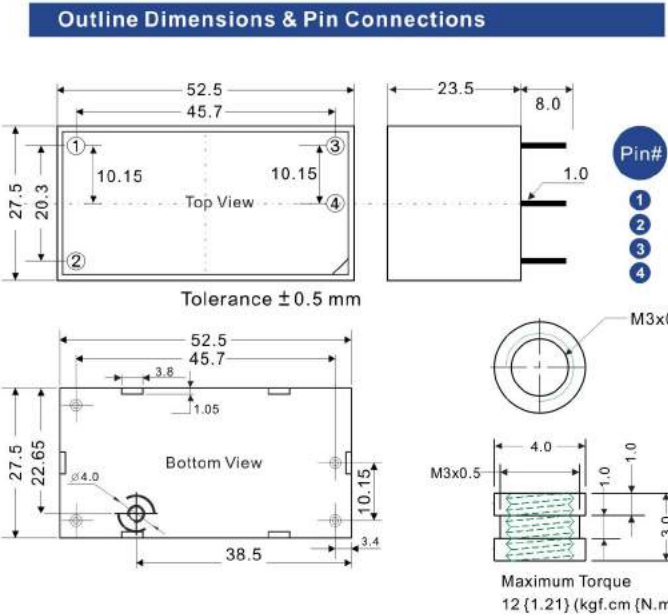
**Models**

►► **AFC20H Single Output**

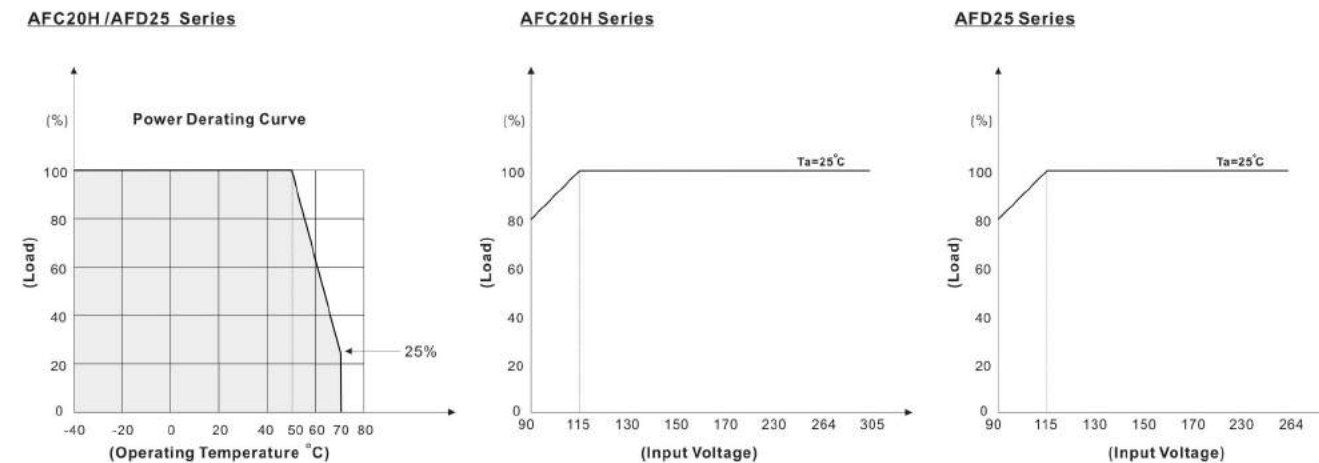
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AFC20H-5S	90~305	5	3529	82
AFC20H-12S	90~305	12	1660	85
AFC20H-15S	90~305	15	1330	86
AFC20H-24S	90~305	24	833	86

►► **AFD25 Single Output**

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AFD25-5S	90~264	5	3922	82
AFD25-12S	90~264	12	2083	86
AFD25-15S	90~264	15	1666	85
AFD25-24S	90~264	24	1042	86



Derating





AKC Series

20 Watt



- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-440 Hz
- ◆ Regulated Output
- ◆ Low Ripple and Noise
- ◆ Optional with Screw Terminal
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty

Input Specifications

Voltage Range	90 ~ 264VAC or 100 ~ 375 VDC
Frequency	47 ~ 440 Hz

Output Specifications

Output Power	20 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	0% to 10% (at Full Load)
Line Regulation	Single, Dual: ±0.5% (typ.)
(LL to HL at Full Load)	Triple: ±1% / ±5% (typ.)
Load Regulation	Single: ±1% (0% to 100% at Full Load) (typ.)
	Dual: ±3% (10% to 100% at Full Load) (typ.)
	Triple: ±2% / ±5% (20% to 100% at Full Load) (typ.)
Ripple (20MHz bandwidth)	<0.2% Vout +40mV (Vp-p) (max.)
Noise (20MHz bandwidth)	<0.5% Vout +50mV (Vp-p) (max.)
Temperature Coefficient	±0.02% / °C (max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)

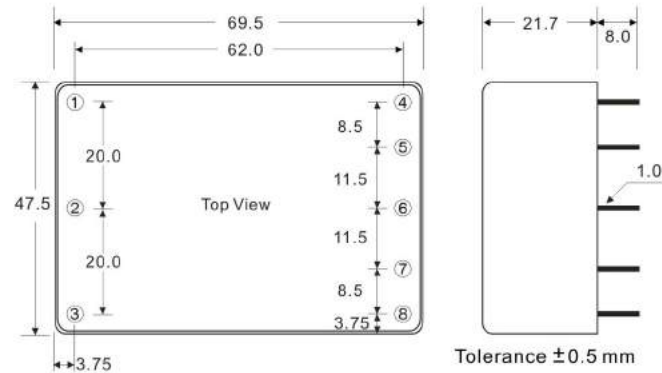
General Specifications

Efficiency (see table list)	75% to 84% (typ.)
Isolation Voltage	3000 VAC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-25°C to +70°C (with Derating)
Storage Temperature	-40°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection

Physical Specifications

Dimension	69.5 x 47.5 x 21.7 mm
(Tolerance ±0.5 mm)	2.73 x 1.87 x 0.85 inches
Weight	110 g
Case Material	Plastic resin (flammability to UL 94V-0)

Outline Dimensions & Pin Connections



Pin#	1	2	3	4	5	6	7	8
Single	FG	AC IN (N)	AC IN (L)	NO PIN	-DC OUT	NO PIN	+DC OUT	NO PIN
Dual	FG	AC IN (N)	AC IN (L)	NO PIN	-DC OUT	COMMON	+DC OUT	NO PIN
Triple	FG	AC IN (N)	AC IN (L)	-DC OUT	COMMON	+DC OUT	+5V RTN	+5V OUT

Models

AKC Single Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AKC-3.3S	90~264	3.3	4500	75
AKC-5S	90~264	5	4000	79
AKC-7.35S	90~264	7.35	2730	82
AKC-9S	90~264	9	2230	82
AKC-12S	90~264	12	1670	83
ALC-15S	90~264	15	1340	83
AKC-24S	90~264	24	840	84

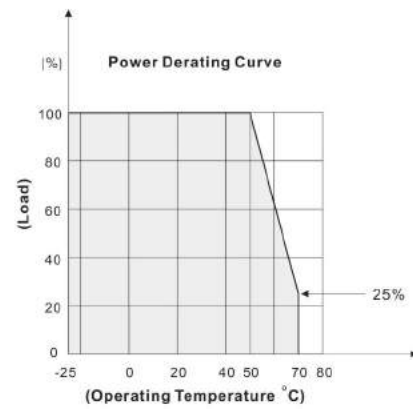
AKC Dual Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AKC-5D	90~264	±5	±2000	79
AKC-12D	90~264	±12	±833	82
AKC-15D	90~264	±15	±667	82

AKC Triple Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AKC-5S12D	90~264	5 / ±12	2800 / ±250	81
AKC-5S15D	90~264	5 / ±15	2800 / ±200	81

Derating



NEW

30 Watt

MTC30 Series

ITE Medical Power Module



- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-440 Hz
- ◆ <0.15W No Load Input Power
- ◆ Regulated Output and Low Ripple and Noise
- ◆ Optional with Screw Terminal
- ◆ Isolation Class II
- ◆ CE, CB, UL, cUL Approvals
- ◆ 3-Year Warranty

Input Specifications

Frequency	90 ~ 264VAC or 120 ~ 370 VDC
Voltage Range	47 ~ 440 Hz

Output Specifications

Output Power	30 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Line Regulation	±0.5% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (10% to 100% at Full Load) (typ.)
Ripple & Noise	5S: 100mV (max.)
(20MHz bandwidth)	12S,15S: 150mV (max.)
	24S: 240mV (max.)
Temperature Coefficient	±0.05% / °C (max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)

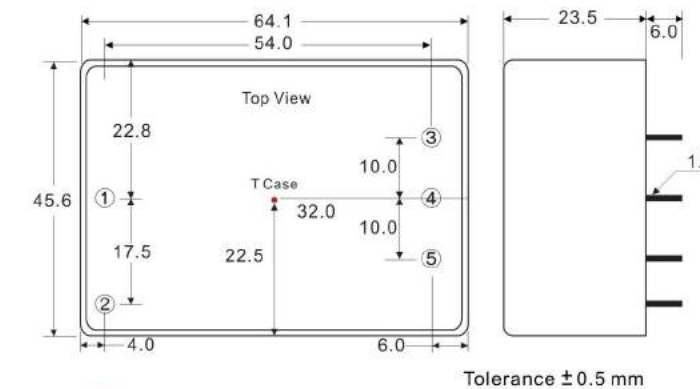
General Specifications

Efficiency (see table list)	84% to 89% (typ.)
Isolation Voltage	4000VAC or 5656VDC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-40°C to +80°C (with Derating)
Storage Temperature	-40°C to +90°C
Altitude During Operation	5000m
Atmospheric Pressure	70 kPa to 106 kPa
Humidity	up to 95% RH (max.)
Cooling	Free-air Convection

Physical Specifications

Dimension	64.1 x 45.6 x 23.5 mm
(Tolerance ±0.5 mm)	2.52 x 1.8 x 0.93 inches
Weight	135 g
Case Material	Plastic resin (flammability to UL 94V-0)

Outline Dimensions & Pin Connections



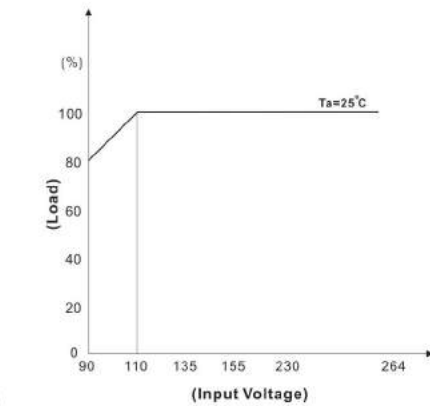
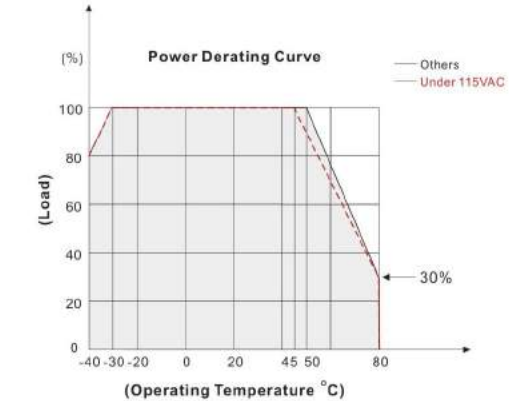
Pin#	Single
1	AC IN (N)
2	AC IN (L)
3	-DC OUT
4	NO PIN
5	+DC OUT

Models

MTC30 Single Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
MTC30-5S	90~264	5	5000	84
MTC30-12S	90~264	12	2500	89
MTC30-15S	90~264	15	2000	86
MTC30-24S	90~264	24	1250	86

Derating





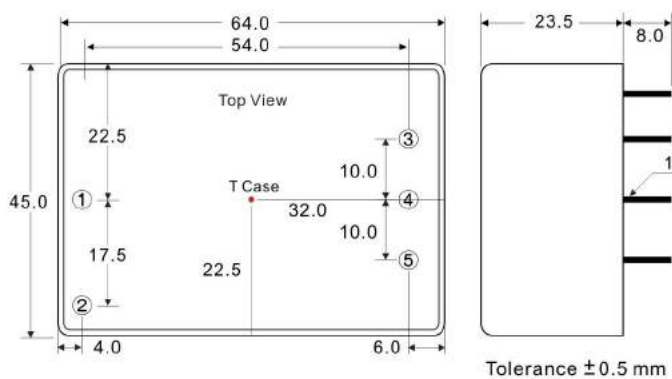
## ATC30 Series 30 Watt



- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-305 VAC, 47-63 Hz
- ◆ Low Standby < 0.3W
- ◆ Very Small 2.52" x 1.77" x 0.92" Package
- ◆ Isolation Class II
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty

Input Specifications	
Voltage Range	90 ~ 305VAC or 120 ~ 430 VDC
Frequency	47 ~ 63 Hz
Output Specifications	
Output Power	30 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	0% (at Full Load)
Line Regulation	±0.5% (LL to HL at Full Load) (typ.)
Load Regulation	3.3S: ±1.5% (typ.) others: ± 1% (typ.)
Ripple & Noise (20MHz bandwidth)	3.3S,5S: 100mV (Vp-p) (max.) 12S,15S: 150mV (Vp-p) (max.) 24S: 240mV
Temperature Coefficient	±0.02% / °C (max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)
General Specifications	
Efficiency (see table list)	80% to 89% (typ.)
Isolation Voltage	3000 VAC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-40°C to +70°C (with Derating)
Storage Temperature	-40°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Physical Specifications	
Dimension (Tolerance ±0.5 mm)	64.0 x 45.0 x 23.5 mm 2.52 x 1.77 x 0.92 inches
Weight	130 g
Case Material	Plastic resin (flammability to UL 94V-0)

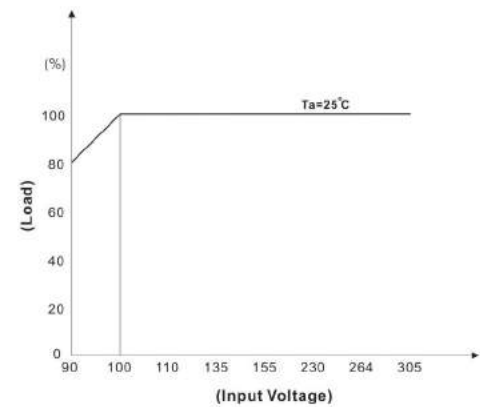
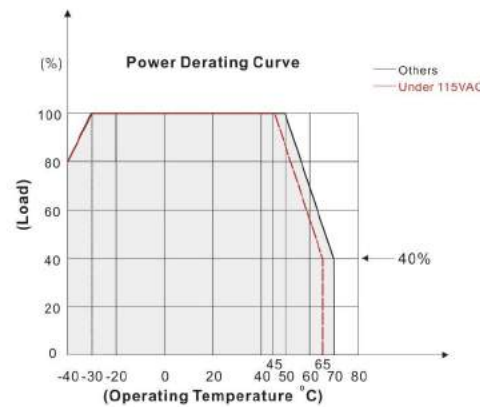
### Outline Dimensions & Pin Connections



- | Pin# | Single    |
|------|-----------|
| ①    | AC IN (N) |
| ②    | AC IN (L) |
| ③    | -DC OUT   |
| ④    | NO PIN    |
| ⑤    | +DC OUT   |

Models				
▶▶ ATC30 Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ATC30-3.3S	90~264	3.3	5000	80
ATC30-5S	90~264	5	5000	84
ATC30-12S	90~264	12	2500	89
ATC30-15S	90~264	15	2000	86
ATC30-24S	90~264	24	1250	86

### Derating



## ASC Series 30 Watt

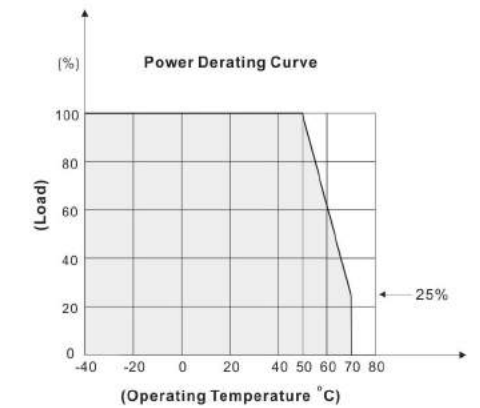


- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-440 Hz
- ◆ Regulated Output and Low Ripple and Noise
- ◆ -40°C Starting
- ◆ Isolation Class II
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty

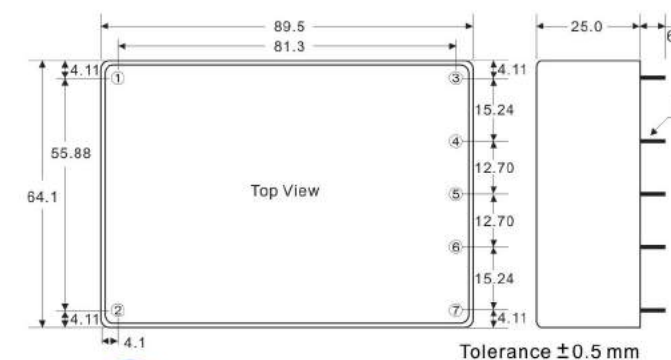
Input Specifications	
Voltage Range	90 ~ 264VAC or 120 ~ 370 VDC
Frequency	47 ~ 440 Hz
Output Specifications	
Output Power	30 Watt (max.)
Voltage Accuracy (Full Load and Nominal Vin)	Single: ±2% Dual: ±5% 5S12S, Triple: ±2% / ±5%
Minimum Load	1% to 20% (at Full Load)
Line Regulation (LL to HL at Full Load)	Single: ±1% (typ.) Dual: ±1% (typ.) 5S12S, Triple: ±1% / ±5% (typ.)
Load Regulation	Single: ±1% (8% to 100% at Full Load) (typ.) Dual: ±3% (20% to 100% at Full Load) (typ.) 5S12S: ±2% / ±6% (20% to 100% at Full Load) (typ.) Triple: ±2% / ±6% (20% to 100% at Full Load) (typ.)
Ripple (20MHz bandwidth)	<0.2% Vout +40mV (Vp-p) (max.)
Noise (20MHz bandwidth)	<0.5% Vout +50mV (Vp-p) (max.)
Temperature Coefficient	±0.02% / °C (max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)
General Specifications	
Efficiency (see table list)	75% to 82% (typ.)
Isolation Voltage	3000 VAC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-40°C to +70°C (with Derating)
Storage Temperature	-40°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Physical Specifications	
Dimension (Tolerance ±0.5 mm)	89.5 x 64.1 x 25.0 mm 3.52 x 2.52 x 0.98 inches
Weight	212 g
Case Material	Plastic resin (flammability to UL 94V-0)

Models				
▶▶ ASC Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ASC-3.3S	90~264	3.3	6000	75
ASC-5S	90~264	5	6000	79
ASC-12S	90~264	12	2500	82
ASC-15S	90~264	15	2000	82
ASC-24S	90~264	24	1250	82
▶▶ ASC Dual Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ASC-5D	90~264	± 5	± 3000	79
ASC-12D	90~264	± 12	± 1250	82
ASC-15D	90~264	± 15	± 1000	80
ASC-5S12S	90~264	5 / 12	3000 / 1250	79
▶▶ ASC Triple Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ASC-5S12D	90~264	5 / ± 12	3000 / ± 630	79
ASC-5S15D	90~264	5 / ± 15	3000 / ± 500	78

### Derating



### Outline Dimensions & Pin Connections



- | Pin#   | ①         | ②         | ③        | ④       | ⑤        | ⑥       | ⑦          |
|--------|-----------|-----------|----------|---------|----------|---------|------------|
| Single | AC IN (N) | AC IN (L) | +DC OUT  | NO PIN  | -DC OUT  | NO PIN  | NO CONNECT |
| Dual   | AC IN (N) | AC IN (L) | +DC OUT  | NO PIN  | COMMON   | NO PIN  | -DC OUT    |
| 5S12S  | AC IN (N) | AC IN (L) | +12V OUT | +5V OUT | +12V RTN | +5V RTN | NO PIN     |
| Triple | AC IN (N) | AC IN (L) | +DC OUT  | +5V OUT | COMMON   | +5V RTN | -DC OUT    |



AJC Series

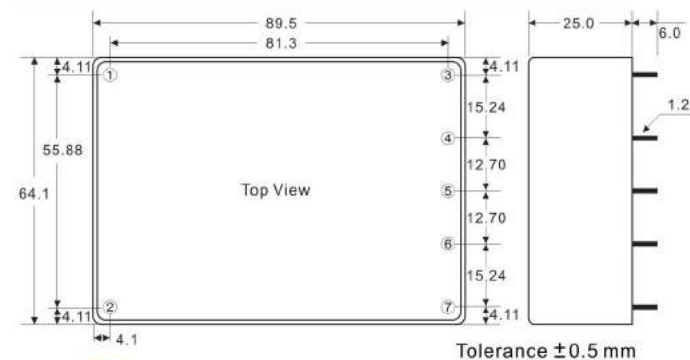
40 Watt



- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-440 Hz
- ◆ Regulated Output and Low Ripple and Noise
- ◆ -40°C Starting
- ◆ Optional with Screw Terminal
- ◆ Isolation Class II
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty

Input Specifications	
Voltage Range	90 ~ 264VAC or 100 ~ 375 VDC
Frequency	47 ~ 440 Hz
Output Specifications	
Output Power	40 Watt (max.)
Voltage Accuracy	3.3S: ±3%
(Full Load and Nominal Vin)	5S~24S, Dual: ±2%
	5S12S, 5S24S, Triple: ±3% / ±5%
Minimum Load	1% to 25% (at Full Load)
Line Regulation	Single: ±0.5% (typ.)
(LL to HL at Full Load)	Dual: ±0.5% (typ.)
	5S12S, 5S24S, Triple: ±0.5% / ±5% (typ.)
Load Regulation	Single: ±1% (1% to 100% at Full Load) (typ.)
(Dual: 15% to 100% at Full Load)	Dual: ±1% (Symmetric Load) (typ.)
(5S12S, 5S24S: 25% to 100% at Full Load)	5S12S, 5S24S: ±2% / ±6% (Symmetric Load) (typ.)
(Triple: 25% to 100% at Full Load)	Triple: ±3% / ±7% (Symmetric Load) (typ.)
Ripple & Noise	3.3S: 50mV (Vp-p) (max.)
(20MHz bandwidth)	others: 1% Vout (Vp-p) (max.)
Temperature Coefficient	±0.01% / °C (max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)
General Specifications	
Efficiency (see table list)	74% to 84% (typ.)
Isolation Voltage	3000 VAC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-40°C to +70°C (with Derating)
Storage Temperature	-40°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Physical Specifications	
Dimension	89.5 x 64.1 x 25.0 mm
(Tolerance ±0.5 mm)	3.52 x 2.52 x 0.98 inches
Weight	280 g
Case Material	Plastic resin (flammability to UL 94V-0)

Outline Dimensions & Pin Connections



Pin#	1	2	3	4	5	6	7
Single	AC IN (L)	AC IN (N)	+DC OUT	NO PIN	-DC OUT	NO PIN	NO CONNECT
Dual	AC IN (L)	AC IN (N)	+DC OUT	NO PIN	COMMON	NO PIN	-DC OUT
5S12S 5S24S	AC IN (L)	AC IN (N)	+12V/+24V OUT	+5V OUT	+12V/+24 RTN	+5V RTN	NO PIN
Triple	AC IN (L)	AC IN (N)	+DC OUT	+5V OUT	COMMON	+5V RTN	-DC OUT



ANC50 Series

50 Watt



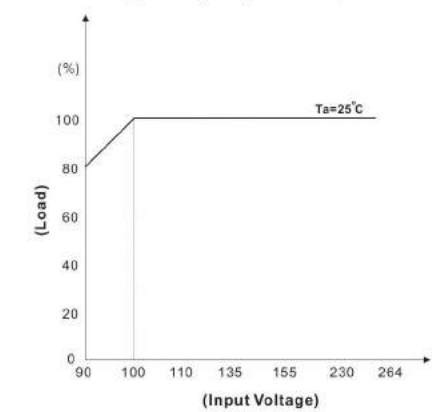
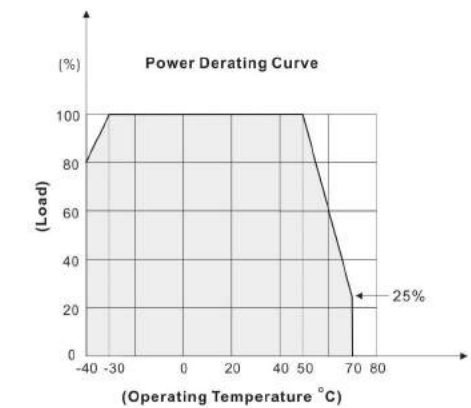
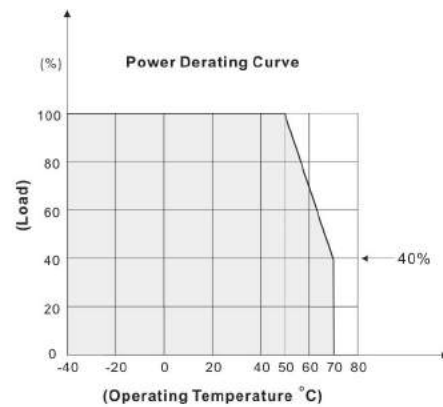
- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-63 Hz
- ◆ Regulated Output and Low Ripple and Noise
- ◆ Isolation Class II
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty

Input Specifications	
Voltage Range	90 ~ 264VAC or 120 ~ 370 VDC
Frequency	47 ~ 63 Hz
Output Specifications	
Output Power	50 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	0% (at Full Load)
Line Regulation	±1% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (0% to 100% at Full Load) (typ.)
Ripple & Noise	5S, 12S: 120mV (Vp-p) (max.)
(20MHz bandwidth)	15S: 150mV (Vp-p) (max.)
	24S: 240mV (Vp-p) (max.)
	48S: 480mV (Vp-p) (max.)
Temperature Coefficient	±0.02% / °C (max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)
General Specifications	
Efficiency (see table list)	86% to 90% (typ.)
Frequency	65K Hz (typ.)
Isolation Voltage	3000 VAC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-40°C to +70°C (with Derating)
Storage Temperature	-40°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Physical Specifications	
Dimension	74.1 x 54.1 x 21.8 mm
(Tolerance ±0.5 mm)	2.91 x 2.13 x 0.86 inches
Weight	166 g
Case Material	Plastic resin (flammability to UL 94V-0)

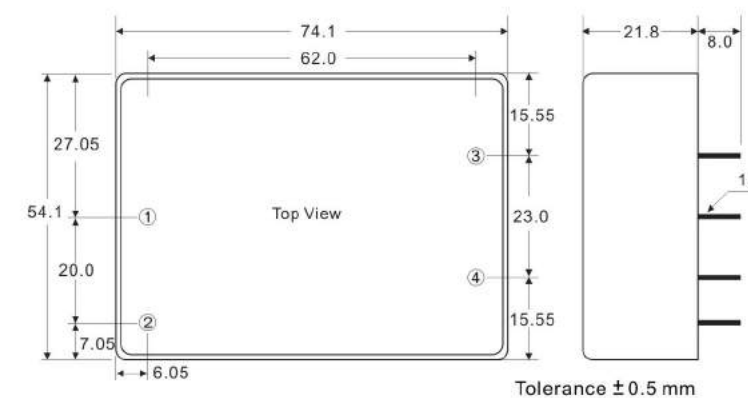
Models				
▶ ANC50 Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ANC50-5S	90~264	5	8000	86
ANC50-12S	90~264	12	4167	90
ANC50-15S	90~264	15	3333	87
ANC50-24S	90~264	24	2083	88
ANC50-48S	90~264	48	1040	89

Derating

Derating



Outline Dimensions & Pin Connections



Pin#	Single
1	AC IN (N)
2	AC IN (L)
3	-DC OUT
4	+DC OUT



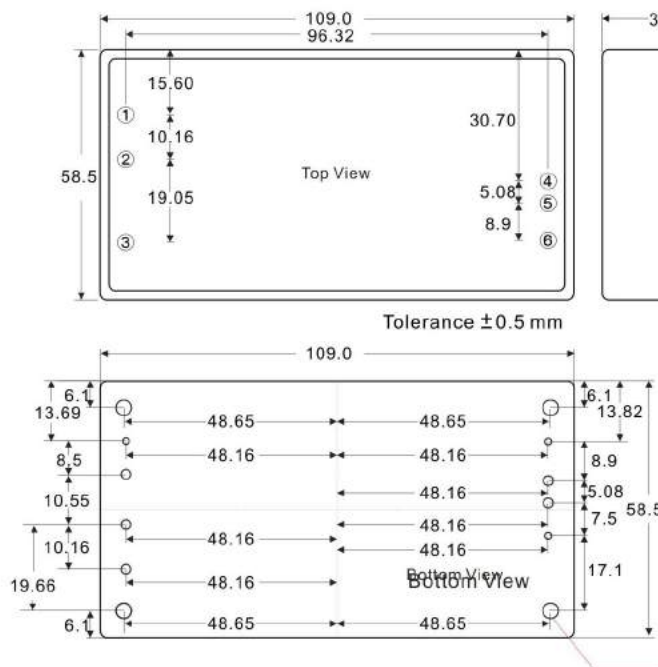
**AEC60 Series** **60 Watt**



- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-63 Hz
- ◆ 4000 VAC Input to Output Isolation
- ◆ -40°C Starting
- ◆ Optional with Screw Terminal
- ◆ CE, UL Approvals
- ◆ 3-Year Warranty

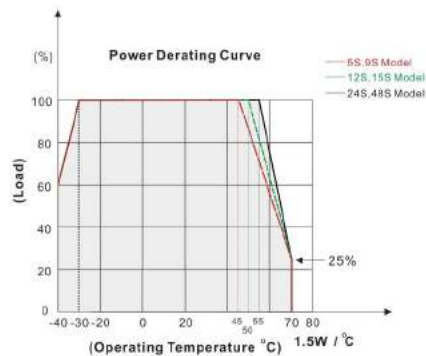
Input Specifications	
Voltage Range	90 ~ 264VAC or 120 ~ 370 VDC
Frequency	47 ~ 63 Hz
Output Specifications	
Output Power	60 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	1% (at Full Load)
Line Regulation	±1% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (5% to 100% at Full Load) (typ.)
Ripple(20MHz bandwidth)	<0.2% Vout +40mV (Vp-p) (max.)
Noise (20MHz bandwidth)	<0.5% Vout +50mV (Vp-p) (max.)
Temperature Coefficient	±0.02% / °C (max.)
Short Circuit Protection	Auto recovery
General Specifications	
Efficiency (see table list)	82% to 86% (typ.)
Isolation Voltage	4000 VAC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-40°C to +70°C (with Derating)
Storage Temperature	-40°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Physical Specifications	
Dimension	109.0 x 58.5 x 30.0 mm
(Tolerance ±0.5mm)	4.3 x 2.3 x 1.18 inches
Weight	310 g
Case Material	Plastic resin (flammability to UL 94V-0)

Outline Dimensions & Pin Connections

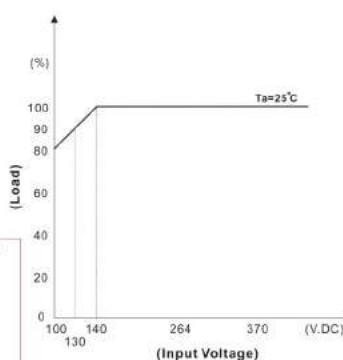
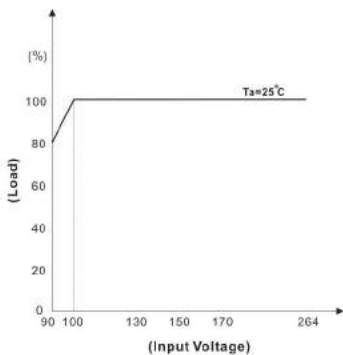


Models				
▶▶ AEC60 Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AEC60-5S	90~264	5	10,000	82
AEC60-9S	90~264	9	6660	84
AEC60-12S	90~264	12	5000	86
AEC60-15S	90~264	15	4000	86
AEC60-24S	90~264	24	2500	86
AEC60-48S	90~264	48	1250	86

Derating



- Pin# Single
- 1 AC IN (N)
  - 2 AC IN (L)
  - 3 FG
  - 4 +DC OUT
  - 5 -DC OUT
  - 6 Trim



**NEW** **MSC60 Series** **60 Watt**

ITE Medical Power Module

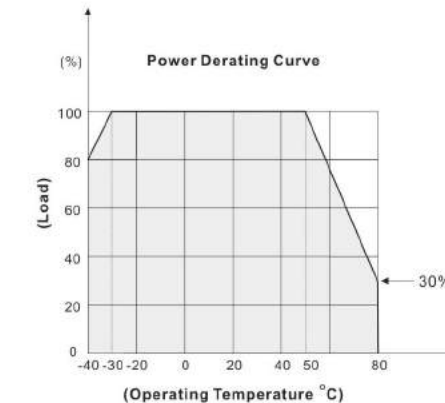


- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-440 Hz
- ◆ <0.3W No Load Input Power
- ◆ Regulated Output and Low Ripple and Noise
- ◆ Optional with Screw Terminal
- ◆ Isolation Class II
- ◆ CE, CB, UL, cUL Approvals
- ◆ 3-Year Warranty

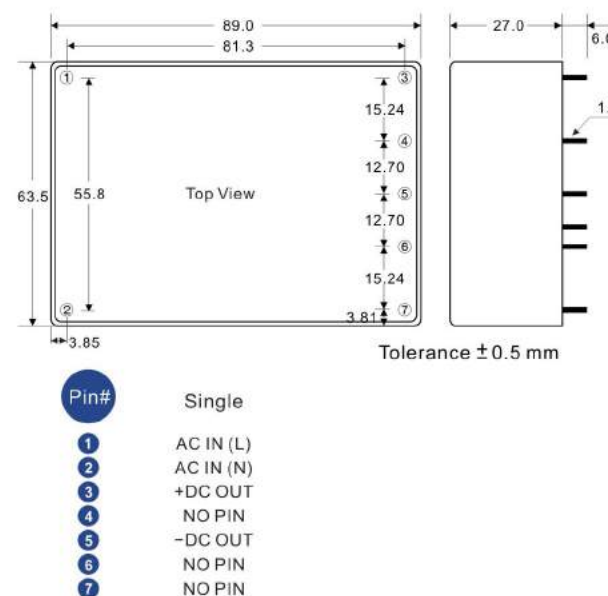
Input Specifications	
Frequency	90 ~ 264VAC or 120 ~ 370 VDC
Voltage Range	47 ~ 440 Hz
Output Specifications	
Output Power	60 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Line Regulation	±0.5% (LL to HL at Full Load) (typ.)
Load Regulation	±1.5% (1% to 100% at Full Load) (typ.)
Ripple & Noise	5S,9S: 100mV (at Full Load) (max.)
(20MHz bandwidth)	others: 1% Vout (at Full Load) (max.)
Temperature Coefficient	±0.05% / °C (max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)
General Specifications	
Efficiency (see table list)	86% to 88% (typ.)
Isolation Voltage	4000VAC or 5656VDC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-40°C to +80°C (Case Temperature max. +95°C)
Storage Temperature	-40°C to +90°C
Altitude During Operation	5000m
Atmospheric Pressure	70 kPa to 106 kPa
Humidity	up to 95% RH (max.)
Cooling	Free-air Convection
Physical Specifications	
Dimension	89.0 x 63.5 x 27.0 mm
(Tolerance ±0.5 mm)	3.5 x 2.5 x 1.06 inches
Weight	260 g
Case Material	Plastic resin with Fiberglass (flammability to UL 94V-0)

Models				
▶▶ MSC60 Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
MSC60-5S	90~264	5	10000	86
MSC60-9S	90~264	9	6666	87
MSC60-12S	90~264	12	5000	88
MSC60-15S	90~264	15	4000	86
MSC60-24S	90~264	24	2500	87

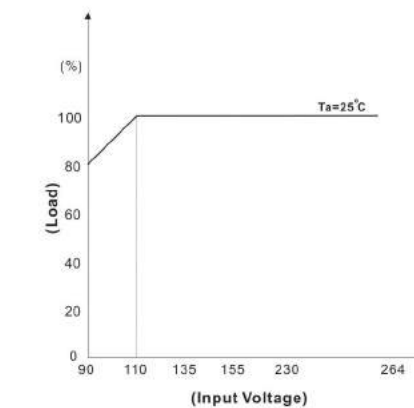
Derating



Outline Dimensions & Pin Connections



- Pin# Single
- 1 AC IN (L)
  - 2 AC IN (N)
  - 3 +DC OUT
  - 4 NO PIN
  - 5 -DC OUT
  - 6 NO PIN
  - 7 NO PIN





100 Watt

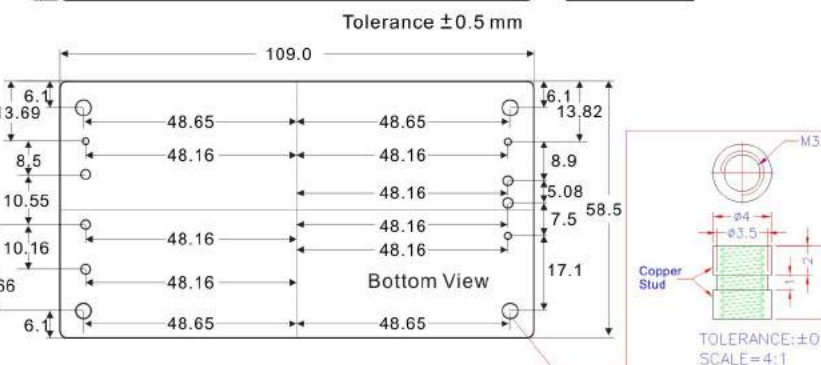
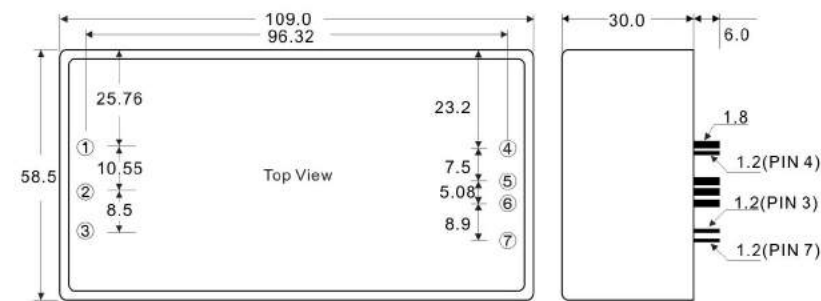
AQC100 Series



- ◆ Power Module for PCB Mountable
- ◆ High Efficiency up to 93%
- ◆ Active PFC Function, >0.95 (230Vac), >0.99 (115Vac)
- ◆ Low Leakage Current, <250uA
- ◆ Remote ON/OFF Control
- ◆ Continuous Short Circuit Protection with Hiccup Mode and Auto Recover
- ◆ EN55022 Class B Meets
- ◆ Class I and Class II Construction
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty

Input Specifications	
Voltage Range	90 ~ 264VAC or 120 ~ 370 VDC
Frequency	47 ~ 63 Hz
Output Specifications	
Output Power	100 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	3% (at Full Load)
Line Regulation	±1% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (5% to 100% at Full Load) (typ.)
Ripple & Noise (20MHz bandwidth)	12S: 120mV / 15S: 150mV (Vp-p) (max.) 24S: 200mV / 48S: 240mV (Vp-p) (max.)
Temperature Coefficient	±0.03% / °C (0~50°C) (max.)
Short Circuit Protection	Auto recovery, Hiccup mode
General Specifications	
Efficiency (see table list)	90% to 93% (typ.)
Isolation Voltage	3000 VAC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-25°C to +70°C (with Derating)
Storage Temperature	-40°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Physical Specifications	
Dimension (Tolerance ±0.5mm)	109.0 x 58.5 x 30.0 mm 4.3 x 2.3 x 1.18 inches
Weight	362 g
Case Material	Plastic resin (flammability to UL 94V-0)

Outline Dimensions & Pin Connections



Pin#	Single
1	AC IN (N)
2	AC IN (L)
3	FG
4	ON / OFF
5	+DC OUT
6	-DC OUT
7	Trim



125 Watt

AQC125 Series

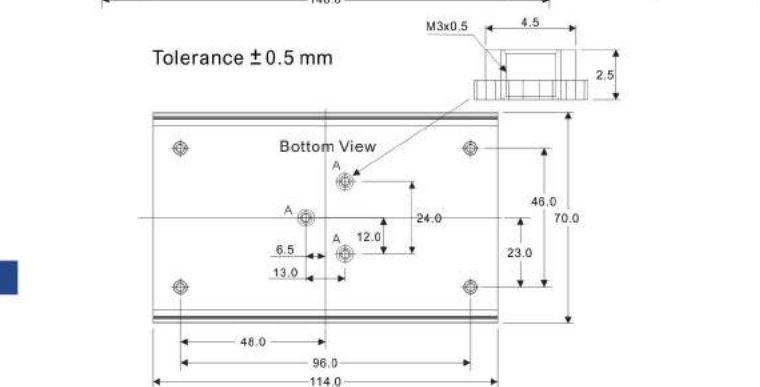
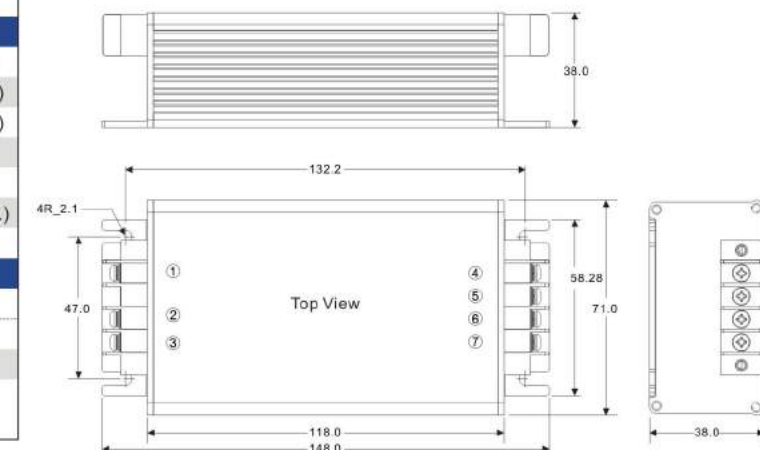


- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-63 Hz
- ◆ Active PFC Function, >0.94 (230Vac), >0.98 (115Vac)
- ◆ <0.5W No Load Input Power (except AQC 125-48S)
- ◆ Four M3 Mounting Holes Optional on Bottom Side
- ◆ Continuous Short Circuit Protection with Hiccup Mode and Auto Recover
- ◆ EN55022 Class B Meets
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty

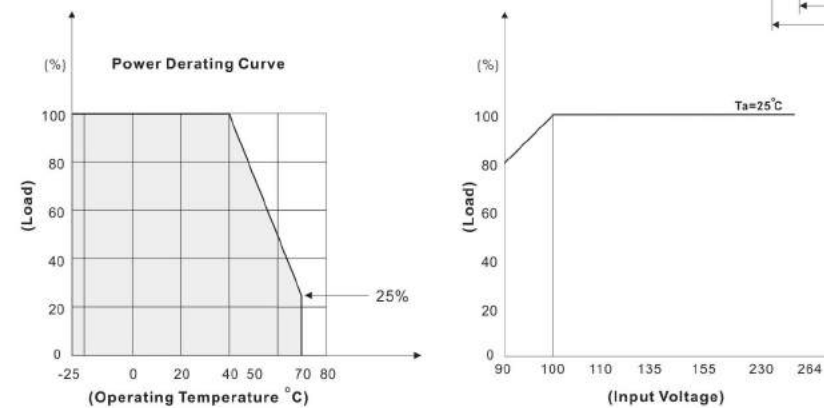
Input Specifications	
Voltage Range	90 ~ 264VAC or 120 ~ 370 VDC
Frequency	47 ~ 63 Hz
Output Specifications	
Output Power	125 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Line Regulation	±1% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (10% to 100% at Full Load) (typ.)
Ripple & Noise (20MHz bandwidth)	12S: 130mV (Vp-p) (max.) others: 1% Vout (Vp-p) (max.)
Temperature Coefficient	±0.03% / °C (0~70°C) ±0.06% / °C (-25~0°C)
Short Circuit Protection	Auto recovery
General Specifications	
Efficiency (see table list)	90% to 91.5% (typ.)
Isolation Voltage	3000 VAC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-25°C to +70°C (with Derating)
Storage Temperature	-25°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Physical Specifications	
Dimension (Tolerance ±0.5 mm)	148.0 x 71.0 x 38.0 mm 5.83 x 2.8 x 1.5 inches
Weight	680 g
Case Material	Plastic resin with Fiberglass (flammability to UL 94V-0)

Models				
▶▶ AQC125 Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AQC125-12S	90~264	12	10400	90
AQC125-15S	90~264	15	8330	90
AQC125-24S	90~264	24	5200	90.5
AQC125-48S	90~264	48	2600	91.5

Outline Dimensions & Pin Connections



Derating



Pin#	Single
1	FG
2	AC IN (N)
3	AC IN (L)
4	+DC OUT
5	+DC OUT
6	-DC OUT
7	-DC OUT







**NEW** **10 Watt**  
**AOD10 Series** Household Power Module

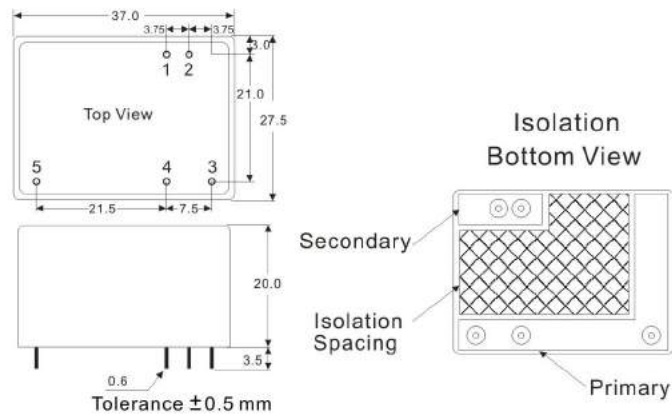
ITE Power Module



- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-63 Hz
- ◆ Maximum No-Load Watts < 0.1W
- ◆ Low Ripple and Noise
- ◆ Isolation Class II
- ◆ CE, CB, UL Approvals (60950, 60335)
- ◆ 3-Year Warranty

Input Specifications	
Voltage Range	90 ~ 264VAC or 120 ~ 370 VDC
Frequency	47 ~ 440 Hz
Output Specifications	
Output Power	10 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	0% (at Full Load)
Line Regulation	±0.2% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (0% to 100% at Full Load) (typ.)
Ripple & Noise (20MHz bandwidth)	5S: <150mV (Vp-p) (max.) 12S: <150mV (Vp-p) (max.) 15S: <160mV (Vp-p) (max.) 48S: 1% Vout (Vp-p) (max.)
Temperature Coefficient	±0.02% / °C (max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)
General Specifications	
Efficiency (see table list)	80% to 85% (typ.)
Isolation Voltage	3000 VAC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-40°C to +70°C (with Derating)
Storage Temperature	-40°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Physical Specifications	
Dimension (Tolerance ±0.5 mm)	37.0 x 27.5 x 20.0 mm 1.46 x 1.08 x 0.79 inches
Weight	35 g
Case Material	Plastic resin (flammability to UL 94V-0)

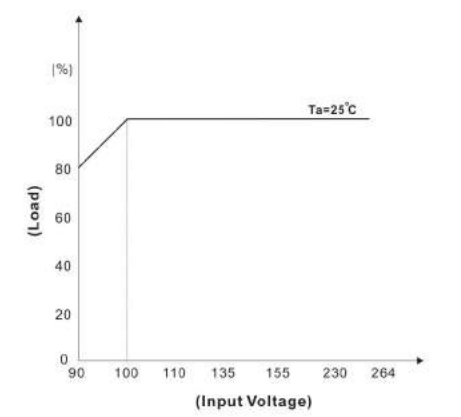
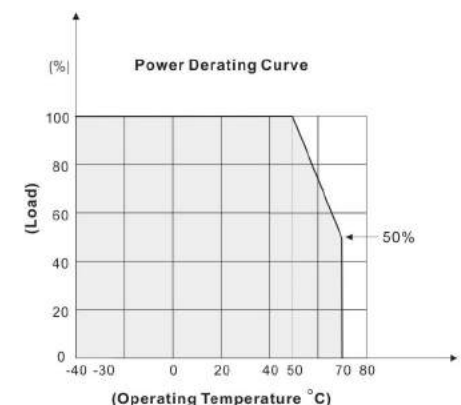
Outline Dimensions & Pin Connections



- Pin#
- 1 Single +Vo
  - 2 GND
  - 3 AC IN (L)
  - 4 AC IN (N)
  - 5 NC CONNECT

Models				
▶ AOD10 Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AOD10-5S	90~264	5	2000	80
AOD10-12S	90~264	12	833	84
AOD10-15S	90~264	15	667	85
AOD10-24S	90~264	24	417	85

Derating



**NEW** **25 Watt**  
**AFD25 Series** Household Power Module

ITE Power Module

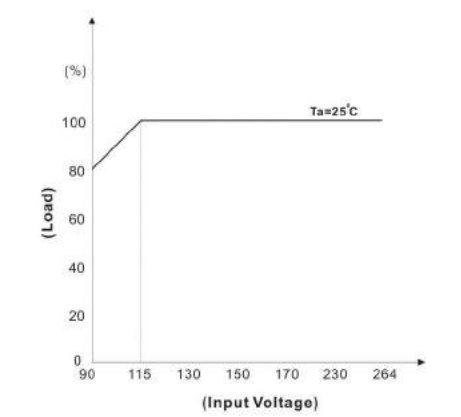
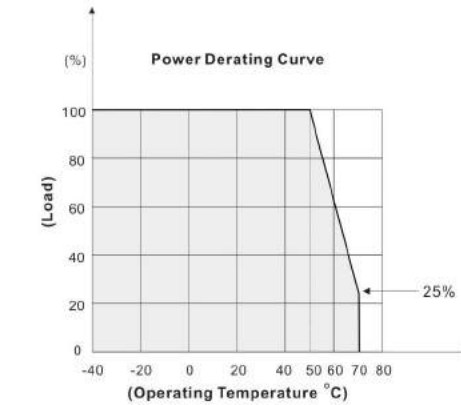


- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-63 Hz
- ◆ Low Standby < 0.1W
- ◆ Regulated Output
- ◆ Low Ripple and Noise
- ◆ Small Size as AFCN 10Watt with 20Watt Higher Power
- ◆ Isolation Class II
- ◆ CE, CB, UL Approvals (60950, 60335)
- ◆ 3-Year Warranty

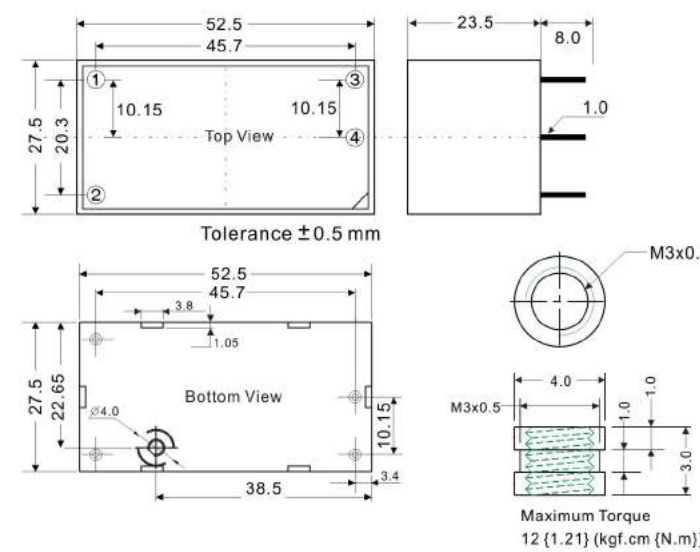
Input Specifications	
Voltage Range	90 ~ 264VAC or 120 ~ 370 VDC
Frequency	47 ~ 440 Hz
Output Specifications	
Output Power	25 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	0% (at Full Load)
Line Regulation	±0.2% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (5% to 100% at Full Load) (typ.)
Ripple & Noise (20MHz bandwidth)	5S: <120mV (Vp-p) (max.) 12S: <150mV (Vp-p) (max.) 15S: <160mV (Vp-p) (max.) 48S: <240mV (Vp-p) (max.)
Temperature Coefficient	±0.05% / °C (max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)
General Specifications	
Efficiency (see table list)	82% to 86% (typ.)
Isolation Voltage	3000 VAC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-40°C to +70°C (with Derating)
Storage Temperature	-40°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Physical Specifications	
Dimension (Tolerance ±0.5 mm)	52.5 x 27.5 x 23.5 mm 2.07 x 1.08 x 0.93 inches
Weight	62 g
Case Material	Plastic resin (flammability to UL 94V-0)

Models				
▶ AFD25 Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AFD25-5S	90~264	5	3922	82
AFD2512S	90~264	12	2083	86
AFD25-15S	90~264	15	1666	85
AFD25-24S	90~264	24	1042	86

Derating



Outline Dimensions & Pin Connections



- Pin#
- 1 Single AC IN (L)
  - 2 AC IN (N)
  - 3 +DC OUT
  - 4 -DC OUT



**NEW** **15 Watt**

### MFC15 Series

ITE Power Module

◆ Power Module for PCB Mountable  
◆ Universal Input: 90-264 VAC, 47-440Hz  
◆ <0.1W No Load Input Power  
◆ Regulated Output and Low Ripple and Noise  
◆ Small Size: 2.07 x 1.08 x 0.93 inches  
◆ Optional with Screw Terminal  
◆ Isolation Class II  
◆ CE, CB, UL, cUL Approvals  
◆ 3-Year Warranty



CE CB UL cUL E308218

**NEW** **20Watt**

### MZC20 Series

ITE Power Module

◆ Power Module for PCB Mountable  
◆ Universal Input: 90-264 VAC, 47-440Hz  
◆ Low Standby <0.1W  
◆ Regulated Output and Low Ripple and Noise  
◆ Small Size: 2.07 x 1.08 x 0.93 inches  
◆ Optional with Screw Terminal  
◆ Isolation Class II  
◆ CE, CB, UL, cUL Approvals  
◆ 3-Year Warranty



CE CB UL cUL E308218

**15 Watt**

### MTC Series

ITE Power Module



CE CB UL cUL E308218

- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-440 Hz
- ◆ Regulated Output and Low Ripple and Noise
- ◆ -40°C Starting Optional (MTC-E1)
- ◆ Isolation Class II
- ◆ UL60601-1 / IEC60601-1 / EN60601-1 Medical Safety Approvals
- ◆ 3-Year Warranty

Input Specifications	MFC15	MZC20
Frequency	90 ~ 264VAC or 120 ~ 370 VDC	
Voltage Range	47 ~ 440 Hz	
Output Specifications	MFC15	MZC20
Output Power	15 Watt (max.)	20 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)	
Line Regulation	±0.5% (LL to HL at Full Load) (typ.)	
Load Regulation	±1% (5% to 100% at Full Load) (typ.)	
Ripple (Vp-p) (max.)	5S,9S: 75mV	12S: 150mV
(20MHz bandwidth)	others:1% Vout	24S: 240mV
Noise (Vp-p) (max.)	5S,9S: 120mV	12S: 150mV
(20MHz bandwidth)	others:1% Vout	24S: 240mV
Temperature Coefficient	±0.05% / °C (max.)	
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)	
General Specifications	MFC15	MZC20
Efficiency (see table list)	79% to 85% (typ.)	82% to 83% (typ.)
Isolation Voltage	4000VAC or 5656VDC (min.)	
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)	
Operating Temperature	-40°C to +80°C (with Derating)	
Storage Temperature	-40°C to +90°C	
Altitude During Operation	5000m	
Atmospheric Pressure	70 kPa to 106 kPa	
Humidity	up to 95% RH (max.)	
Cooling	Free-air Convection	
Physical Specifications	MFC15	MZC20
Dimension (Tolerance ±0.5 mm)	52.5 x 27.5 x 23.5 mm	
	2.07 x 1.08 x 0.93 inches	
Weight	60 g	52 g
Case Material	Plastic resin (flammability to UL 94V-0)	

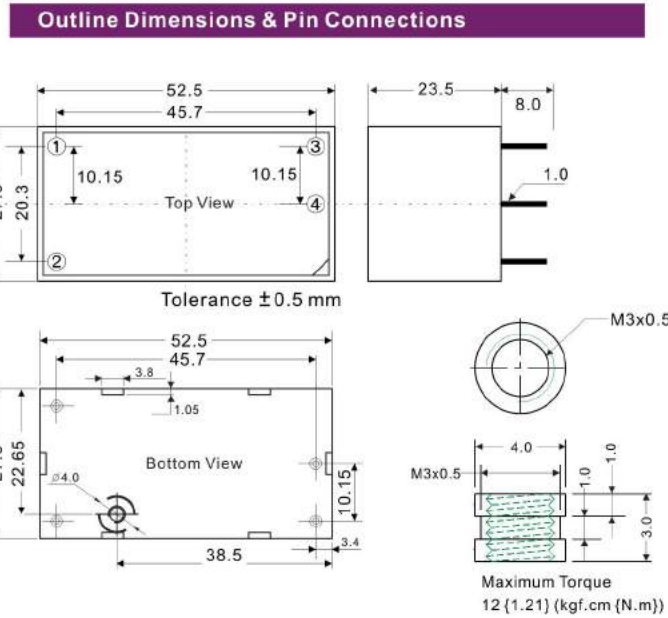
#### Models

##### ► MFC15 Single Output

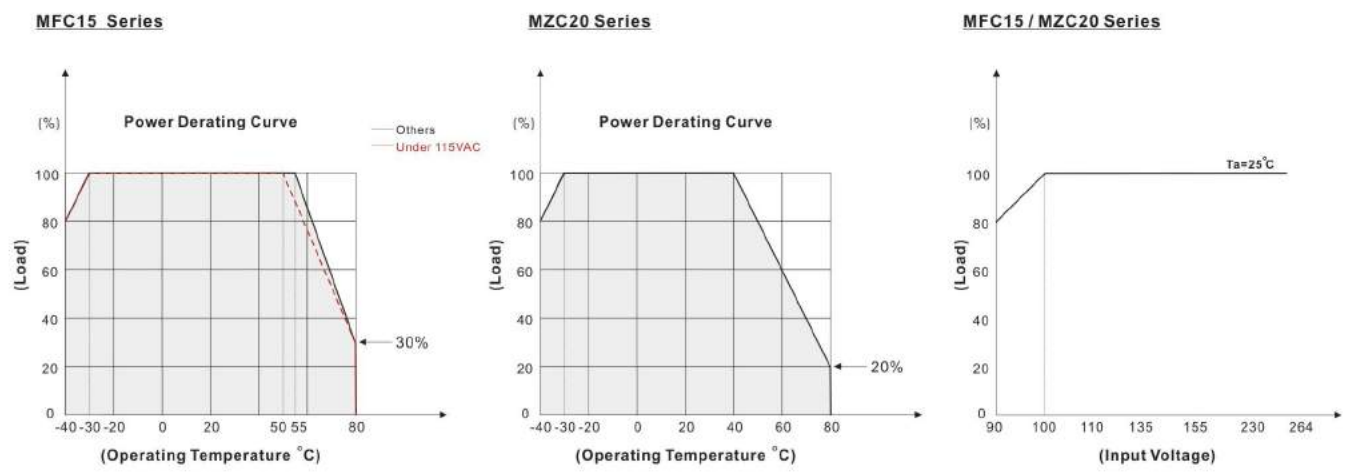
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
MFC15-5S	90~264	5	3000	79
MFC15-9S	90~264	9	1666	80
MFC15-12S	90~264	12	1250	84
MFC15-15S	90~264	15	1000	84
MFC15-24S	90~264	24	625	85

##### ► MZC20 Single Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
MZC20-12S	90~264	12	1667	83
MZC20-24S	90~264	24	833	82



### Derating



#### Input Specifications

Voltage Range	90 ~ 264VAC or 120 ~ 375 VDC
Frequency	47 ~ 440 Hz

#### Output Specifications

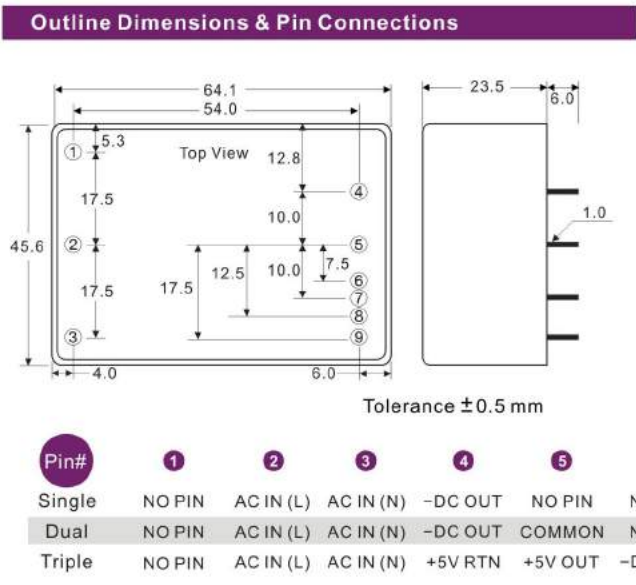
Output Power	15 Watt (max.)
Voltage Accuracy (Full Load and Nominal Vin)	Single,Dual: ±2% Triple: ±3% / ±5%
Minimum Load	0% to 25% (at Full Load)
Line Regulation (LL to HL at Full Load)	Single,Dual: ±0.5% (typ.) Triple: ±0.5% / ±2% (typ.)
Load Regulation (Dual:10% to 100% at Full Load) (Triple:10% to 100% at Full Load)	Single: ±1% (0% to 100% at Full Load) (typ.) Dual: ±1% (Symmetric Load) (typ.) Triple: ±1% / ±5% (Symmetric Load) (typ.)
Ripple & Noise	1% Vout (20MHz bandwidth) (max.)
Temperature Coefficient	±0.01% / °C (max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)

#### General Specifications

Efficiency (see table list)	75% to 83% (typ.)
Isolation Voltage	4000 VAC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-25°C to +70°C (MTC-E1) -40°C to +70°C (MTC-E1) (Case Temperature max. +95°C)
Storage Temperature	-40°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection

#### Physical Specifications

Dimension (Tolerance ±0.5 mm)	64.1 x 45.6 x 23.5 mm
	2.52 x 1.8 x 0.93 inches
Weight	120 g
Case Material	Plastic resin (flammability to UL 94V-0)



#### Models

##### ► MTC Single Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
MTC-3.3S	90~264	3.3	3000	75
MTC-5S	90~264	5	3000	79
MTC-7.35S	90~264	7.35	2040	79
MTC-9S	90~264	9	1666	80
MTC-12S	90~264	12	1250	81
MTC-15S	90~264	15	1000	82
MTC-24S	90~264	24	625	83

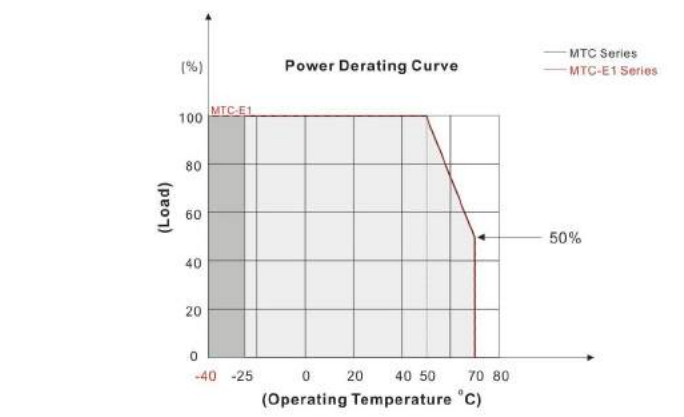
##### ► MTC Dual Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
MTC-5D	90~264	±5	±1500	79
MTC-12D	90~264	±12	±625	82
MTC-15D	90~264	±15	±500	82

##### ► MTC Triple Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
MTC-5S12D	90~264	5 / ±12	2000 / ±200	78
MTC-5S15D	90~264	5 / ±15	2000 / ±150	78

### Derating





**NEW** **30 Watt**  
**MTC30 Series**

ITE Power Module



- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-440 Hz
- ◆ <0.15W No Load Input Power
- ◆ Regulated Output and Low Ripple and Noise
- ◆ Optional with Screw Terminal
- ◆ Isolation Class II
- ◆ CE, CB, UL, cUL Approvals
- ◆ 3-Year Warranty

**Input Specifications**

Frequency	90 ~ 264VAC or 120 ~ 370 VDC
Voltage Range	47 ~ 440 Hz

**Output Specifications**

Output Power	30 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Line Regulation	±0.5% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (10% to 100% at Full Load) (typ.)
Ripple & Noise	5S: 100mV (max.)
(20MHz bandwidth)	12S,15S: 150mV (max.)
	24S: 240mV (max.)
Temperature Coefficient	±0.05% / °C (max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)

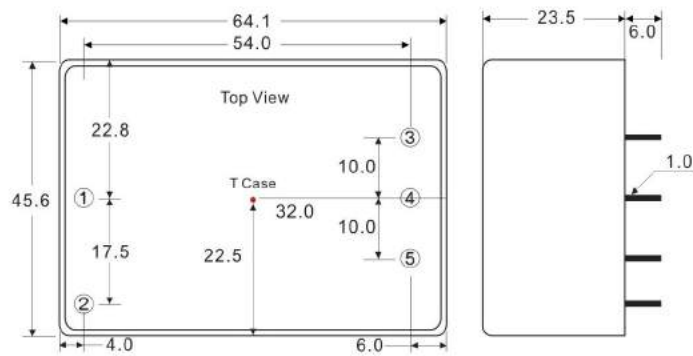
**General Specifications**

Efficiency (see table list)	84% to 89% (typ.)
Isolation Voltage	4000VAC or 5656VDC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-40°C to +80°C (with Derating)
Storage Temperature	-40°C to +90°C
Altitude During Operation	5000m
Atmospheric Pressure	70 kPa to 106 kPa
Humidity	up to 95% RH (max.)
Cooling	Free-air Convection

**Physical Specifications**

Dimension	64.1 x 45.6 x 23.5 mm
(Tolerance ±0.5 mm)	2.52 x 1.8 x 0.93 inches
Weight	135 g
Case Material	Plastic resin (flammability to UL 94V-0)

**Outline Dimensions & Pin Connections**



Tolerance ±0.5 mm

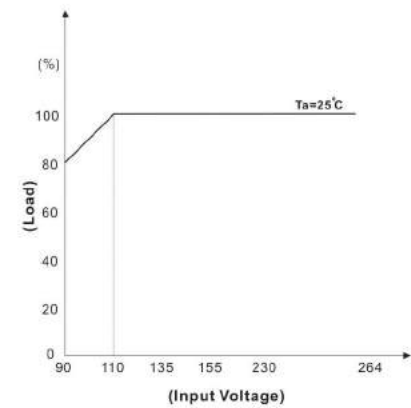
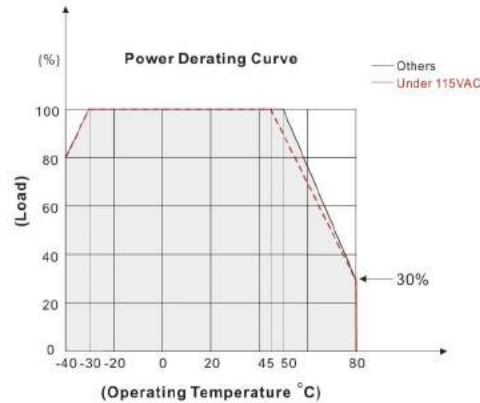
- Pin#** Single
- ① AC IN (N)
  - ② AC IN (L)
  - ③ -DC OUT
  - ④ NO PIN
  - ⑤ +DC OUT

**Models**

►► **MTC30 Single Output**

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
MTC30-5S	90~264	5	5000	84
MTC30-12S	90~264	12	2500	89
MTC30-15S	90~264	15	2000	86
MTC30-24S	90~264	24	1250	86

**Derating**



**40 Watt**  
**MSC Series**



- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-440 Hz
- ◆ Regulated Output and Low Ripple and Noise
- ◆ -40°C Starting Optional (MSC-E1)
- ◆ Isolation Class II
- ◆ UL60601-1 / IEC60601-1 / EN60601-1 Medical Safety Approvals
- ◆ 3-Year Warranty

**Input Specifications**

Voltage Range	90 ~ 264VAC or 120 ~ 375 VDC
Frequency	47 ~ 440 Hz

**Output Specifications**

Output Power	40 Watt (max.)
Voltage Accuracy	Single,Dual: ±2% (Full Load and Nominal Vin)
	5S12S,5S24S, Triple: ±3% / ±5%
Minimum Load	1% to 25% (at Full Load)
Line Regulation	Single,Dual: ±0.5% (typ.)
(LL to HL at Full Load)	5S12S,5S24S, Triple: ±0.5% / ±5% (typ.)
Load Regulation	Single: ±1% (1% to 100% at Full Load) (typ.)
(Dual:10% to 100% at Full Load)	Dual: ±1% (Symmetric Load) (typ.)
(Triple:25% to 100% at Full Load)	5S12S,5S24S: ±2% / ±6% (Symmetric Load) (typ.)
	Triple: ±3% / ±7% (Symmetric Load) (typ.)
Ripple & Noise	3.3S: 50mV (Vp-p) (max.)
(20MHz bandwidth)	others: 1% Vout (Vp-p) (max.)
Temperature Coefficient	±0.01% / °C (max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)

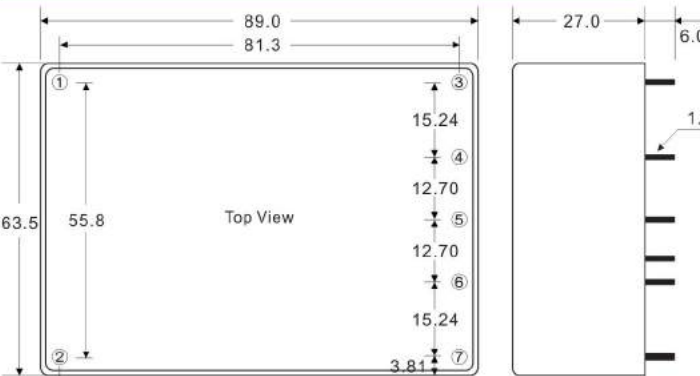
**General Specifications**

Efficiency (see table list)	74% to 83% (typ.)
Isolation Voltage	4000 VAC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-25°C to +70°C (MSC)
	-40°C to +70°C (MSC-E1)
	(Case Temperature max. +95°C)
Storage Temperature	-40°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection

**Physical Specifications**

Dimension	89.0 x 63.5 x 27.0 mm
(Tolerance ±0.5 mm)	3.5 x 2.5 x 1.06 inches
Weight	280 g
Case Material	Plastic resin (flammability to UL 94V-0)

**Outline Dimensions & Pin Connections**



Tolerance ±0.5 mm

- Pin#**
- | Pin#           | 1         | 2         | 3             | 4       | 5            | 6       | 7          |
|----------------|-----------|-----------|---------------|---------|--------------|---------|------------|
| Single         | AC IN (L) | AC IN (N) | +DC OUT       | NO PIN  | -DC OUT      | NO PIN  | NO CONNECT |
| Dual           | AC IN (L) | AC IN (N) | +DC OUT       | NO PIN  | COMMON       | NO PIN  | -DC OUT    |
| 5S12S<br>5S24S | AC IN (L) | AC IN (N) | +12V/+24V OUT | +5V OUT | +12V/+24 RTN | +5V RTN | NO PIN     |
| Triple         | AC IN (L) | AC IN (N) | +DC OUT       | +5V OUT | COMMON       | +5V RTN | -DC OUT    |

**Models**

►► **MSC Single Output**

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
MSC-3.3S	90~264	3.3	8000	74
MSC-5S	90~264	5	8000	79
MSC-9S	90~264	9	4444	82
MSC-12S	90~264	12	3333	83
MSC-15S	90~264	15	2666	83
MSC-24S	90~264	24	1667	83

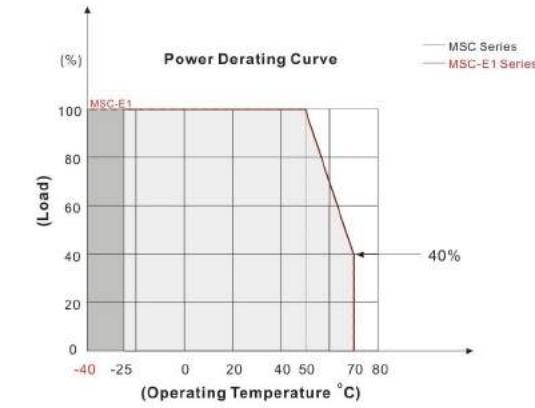
►► **MSC Dual Output**

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
MSC-5D	90~264	±5	±4000	80
MSC-12D	90~264	±12	±1666	83
MSC-15D	90~264	±15	±1333	83
MSC-5S12S	90~264	5 / 12	5000 / 1250	80
MSC-5S24S	90~264	5 / 24	5000 / 625	80

►► **MSC Triple Output**

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
MSC-5S12D	90~264	5 / ±12	5000 / ±600	79
MSC-5S15D	90~264	5 / ±15	5000 / ±500	79

**Derating**





NEW

60 Watt

MSC60 Series

ITE Power Module



- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-440 Hz
- ◆ <0.3W No Load Input Power
- ◆ Regulated Output and Low Ripple and Noise
- ◆ Optional with Screw Terminal
- ◆ Isolation Class II
- ◆ CE, CB, UL, cUL Approvals
- ◆ 3-Year Warranty

Input Specifications

Frequency	90 ~ 264VAC or 120 ~ 370 VDC
Voltage Range	47 ~ 440 Hz

Output Specifications

Output Power	60 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Line Regulation	±0.5% (LL to HL at Full Load) (typ.)
Load Regulation	±1.5% (1% to 100% at Full Load) (typ.)
Ripple & Noise	5S,9S: 100mV (at Full Load) (max.)
	others: 1% Vout (at Full Load) (max.)
Temperature Coefficient	±0.05% / °C (max.)
Short Circuit Protection	Hiccup mode, indefinite (Automatic recovery)

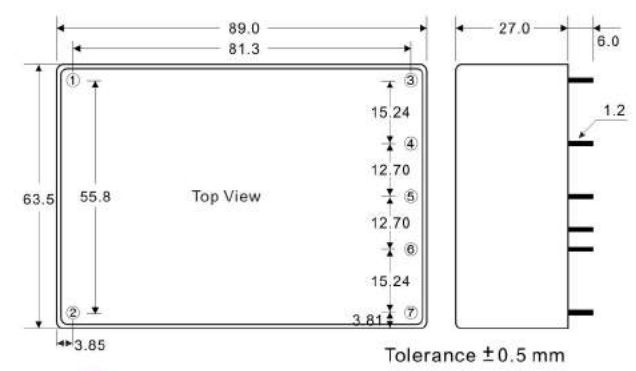
General Specifications

Efficiency (see table list)	86% to 88% (typ.)
Isolation Voltage	4000VAC or 5656VDC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-40°C to +80°C (Case Temperature max. +95°C)
Storage Temperature	-40°C to +90°C
Altitude During Operation	5000m
Atmospheric Pressure	70 kPa to 106 kPa
Humidity	up to 95% RH (max.)
Cooling	Free-air Convection

Physical Specifications

Dimension	89.0 x 63.5 x 27.0 mm
(Tolerance ±0.5 mm)	3.5 x 2.5 x 1.06 inches
Weight	260 g
Case Material	Plastic resin with Fiberglass (flammability to UL 94V-0)

Outline Dimensions & Pin Connections



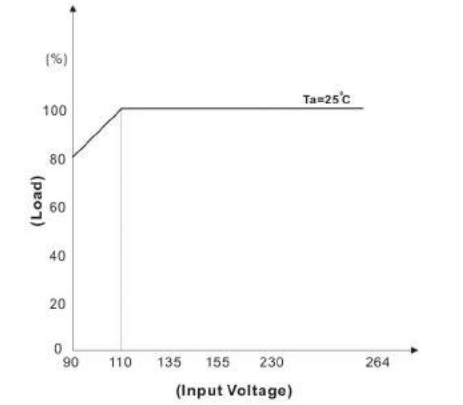
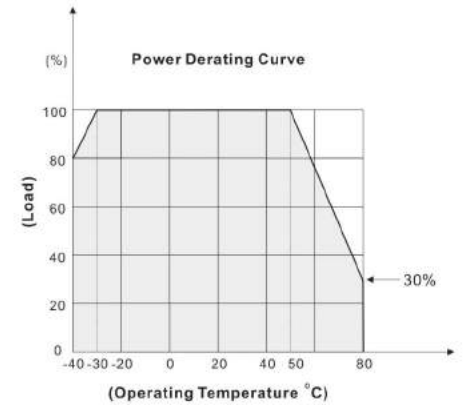
- Pin# Single
- 1 AC IN (L)
  - 2 AC IN (N)
  - 3 +DC OUT
  - 4 NO PIN
  - 5 -DC OUT
  - 6 NO PIN
  - 7 NO PIN

Models

► MSC60 Single Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
MSC60-5S	90~264	5	10000	86
MSC60-9S	90~264	9	6666	87
MSC60-12S	90~264	12	5000	88
MSC60-15S	90~264	15	4000	86
MSC60-24S	90~264	24	2500	87

Derating



NEW

100 Watt / 150 Watt

MQC100 / MQC150 Series

ITE Power Module



- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 47-63 Hz
- ◆ 4000VAC Input to Output 2MOPP Insulation
- ◆ Cooling by Free Air Convection
- ◆ High Efficiency up to 93.5%
- ◆ With P.F.C. Function >0.9
- ◆ <0.5W No Load Input Power
- ◆ EMI for Both Class I (with FG) and Class II (without FG) Configuration
- ◆ Suitable for BF Application with Appropriate System Consideration
- ◆ UL / IEC / EN 60601 3.1 Edition & UL / IEC / EN 60950 AM2 Safety Approvals
- ◆ 3-Year Warranty

Input Specifications

Frequency	90 ~ 264VAC
Voltage Range	47 ~ 63 Hz

Output Specifications

Output Power	100 Watt (max.)	150 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)	
Minimum Load	0% (at Full Load)	
Line Regulation	±1% (LL to HL at Full Load) (typ.)	
Load Regulation	±1% (0% to 100% at Full Load) (typ.)	
Ripple & Noise	1% Vout (20MHz bandwidth) (max.)	
Temperature Coefficient	±0.05% / °C (max.)	
Short Circuit Protection	Auto recovery, Hiccup mode	

General Specifications

Efficiency (see table list)	92.5% to 93.5% (typ.)	93% to 93.5% (typ.)
Isolation Voltage	4000VAC or 5656VDC (min.)	
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)	
Operating Temperature	-30°C to +70°C (with Derating)	
Storage Temperature	-30°C to +85°C	
Humidity	95% RH (max.)	
Cooling	Free-air Convection	

Physical Specifications

Dimension	109.0 x 58.5 x 34.5 mm
(Tolerance ±0.5 mm)	4.3 x 2.3 x 1.58 inches
Weight	Pending
Case Material	Plastic resin (flammability to UL 94V-0)

Models

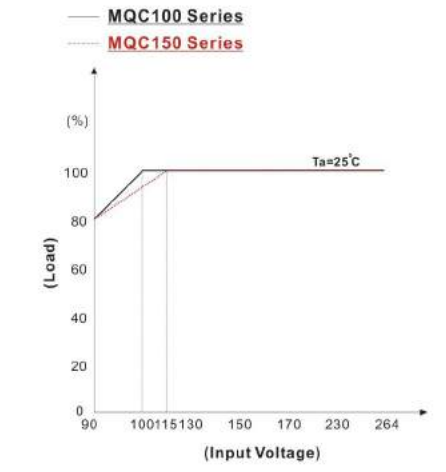
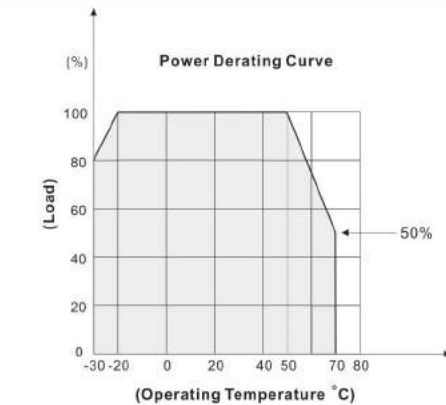
► MQC100 Single Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
MFC100-12S	90~264	12	8330	92.5
MFC100-24S	90~264	24	4200	93
MFC100-48S	90~264	48	2100	93.5

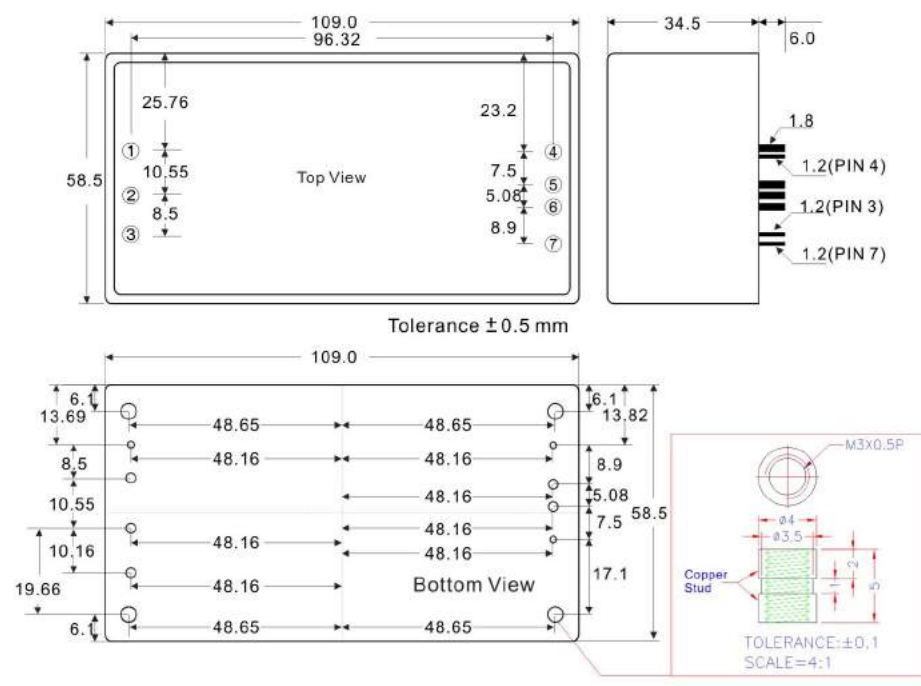
► MQC150 Single Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
MFC150-12S	90~264	12	12500	93
MFC150-24S	90~264	24	6250	93.5
MFC150-48S	90~264	48	3125	93.5

Derating



Outline Dimensions & Pin Connections



- Pin# Single
- 1 AC IN (N)
  - 2 AC IN (L)
  - 3 FG
  - 4 ON / OFF
  - 5 +DC OUT
  - 6 -DC OUT
  - 7 Trim



NEW

240 Watt

MQF240 Series

ITE Switching Power Supply



- ◆ Open Frame and Enclosed Package
- ◆ Universal Input: 90-264 VAC, 47-63 Hz
- ◆ 4000VAC Input to Output 2MOPP Insulation
- ◆ Cooling by Free Air Convection (MQF240O only)
- ◆ 160 Watts and 240 Watt with 10CFM Forced Air (MQF240O only)
- ◆ Built-in 12V / 0.5A Fan Supply (MQF240O only)
- ◆ High Efficiency up to 93.5%
- ◆ With P.F.C. Function >0.9
- ◆ <0.5W No Load Input Power
- ◆ EMI for Both Class I (with FG) and Class II (without FG) Configuration
- ◆ Suitable for BF Application with Appropriate System Consideration
- ◆ UL / IEC / EN 60601 3.1 Edition & UL / IEC / EN 60950 AM2 Safety Approvals
- ◆ 3-Year Warranty

Input Specifications

Voltage Range	90 ~ 264VAC
Frequency	47 ~ 63 Hz

Output Specifications

Output Power	MQF240O:	
	Convection: 160 Watt	(max.)
	10CFM FAN: 240 Watt	(max.)
	MQF240E: 240 Watt	(max.)

Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	0% (at Full Load)
Line Regulation	±1% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (0% to 100% at Full Load) (typ.)
Ripple & Noise	1% Vout (20MHz bandwidth) (max.)
Temperature Coefficient	±0.05% / °C (max.)
Short Circuit Protection	Auto recovery, Hiccup mode

General Specifications

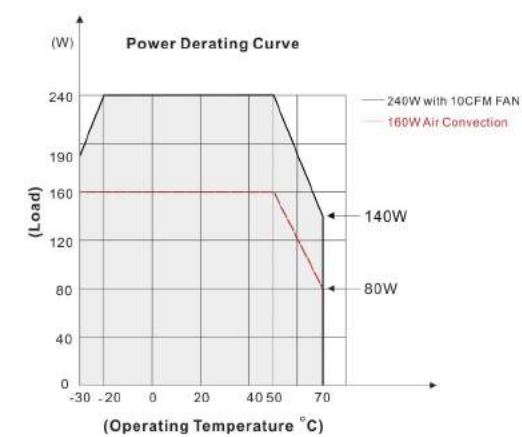
Efficiency (see table list)	MQF240O: 92.5% to 93.5%	(typ.)
	MQF240E: 92% to 93%	(typ.)
Isolation Voltage	4000 VAC or 5656 VDC	(min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output)	(min.)
Operating Temperature	-30°C to +70°C (with Derating)	
Storage Temperature	-30°C to +85°C	
Humidity	20~90% RH	(max.)
Cooling	Free-air Convection	

Physical Specifications

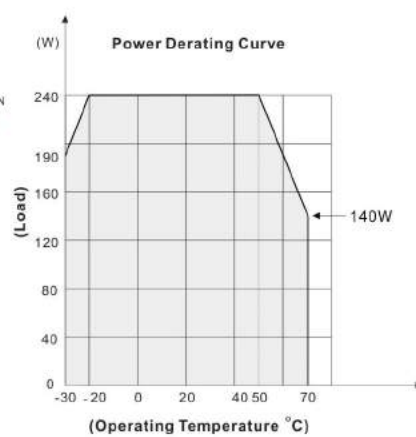
Dimension (Tolerance ±0.5 mm)	MQF240O:	103.9 x 52.0 x 27.6 mm
		4.1 x 2.05 x 1.087 inches
	MQF240E:	104.0 x 62.0 x 49.5 mm
		4.1 x 2.44 x 1.95 inches
Weight	Pending	

Derating

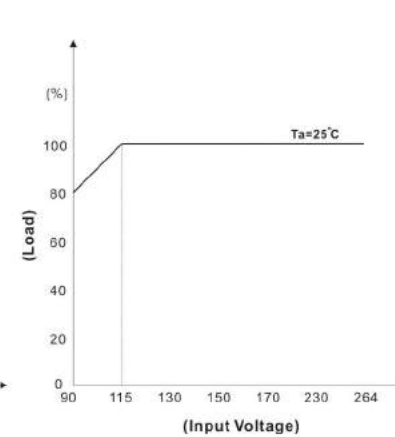
MQF240O Series



MQF240E Series



MQF240O / MQF240E Series



Models

MQF240O Single Output					
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (A) max.		Eff (%)
			Convection	10 CFM FAN	
MQF240O-12S	90~264	12	13.3	20	92.5
MQF240O-24S	90~264	24	6.66	10	93
MQF240O-48S	90~264	48	3.33	5	93.5

MQF240E Single Output					
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (A) max.		Eff (%)
			Convection	10 CFM FAN	
MQF240E-12S	90~264	12	20	92	
MQF240E-24S	90~264	24	10	92.5	
MQF240E-48S	90~264	48	5	93	

Standard Type

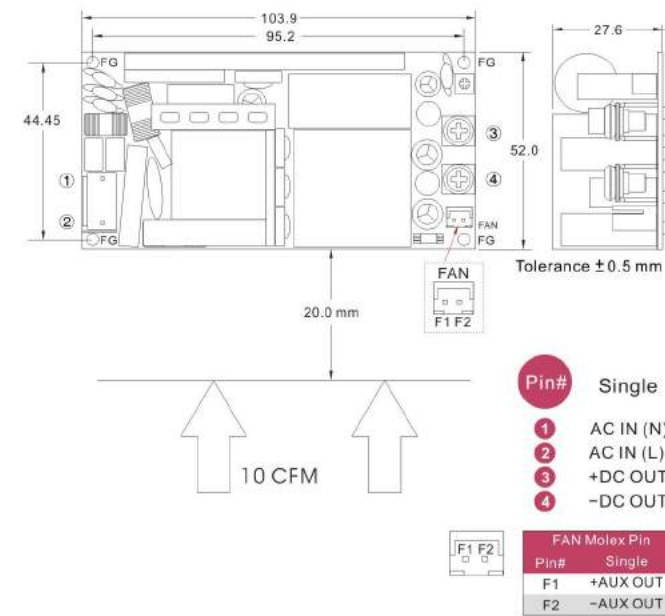


A Type

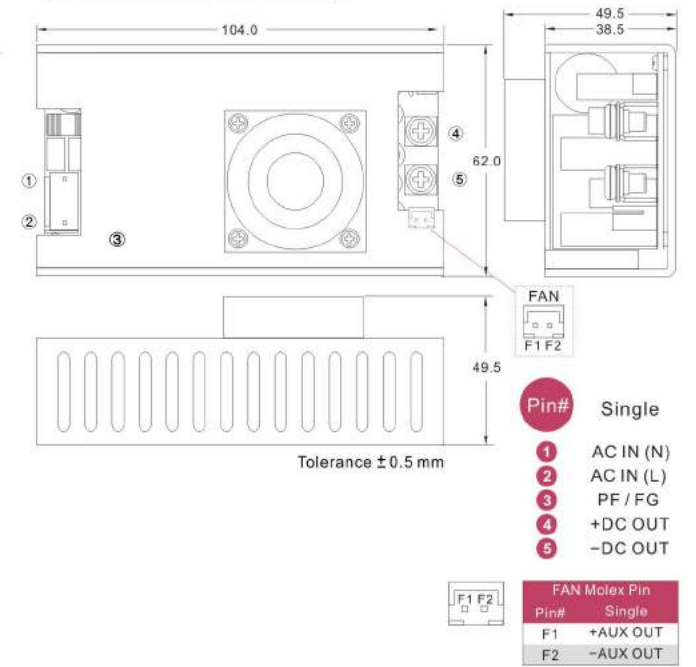


Outline Dimensions & Pin Connections (Top View)

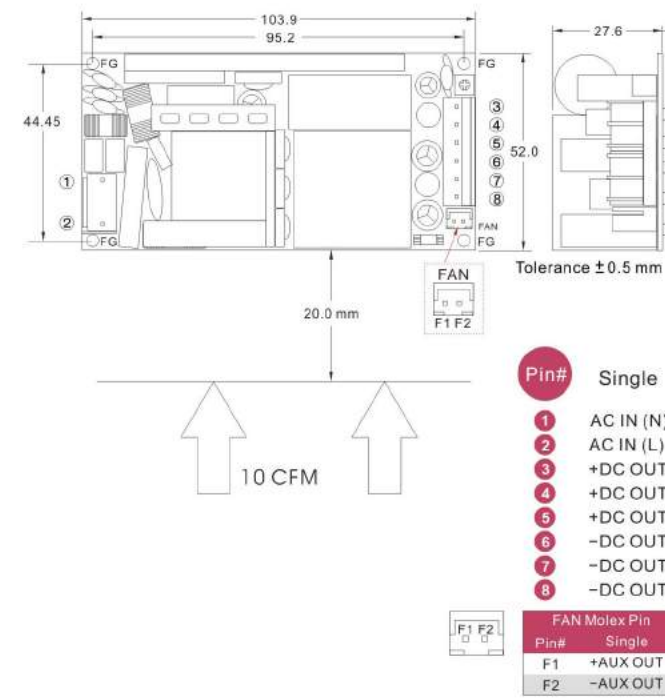
MQF240O Series (Standard Type)



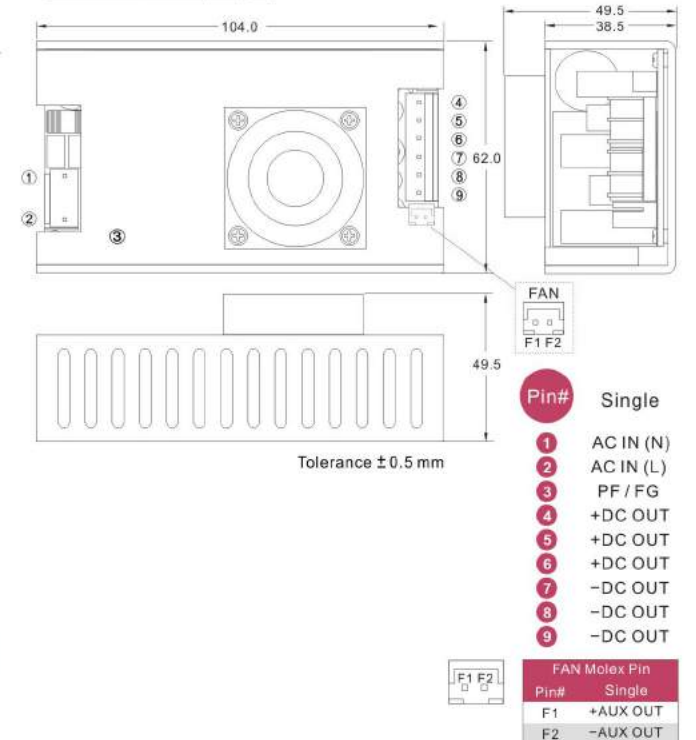
MQF240E Series (Standard Type)



MQF240O Series (A Type)



MQF240E Series (A Type)





**NEW** **500 Watt**  
**MQF500 Series**  
ITE Switching Power Supply



- ◆ Open Frame and Enclosed Package
- ◆ Universal Input: 90-264 VAC, 47-63 Hz
- ◆ Remote ON/OFF Function
- ◆ 240 Watt with Free Air Convection (MQF500O only)
- ◆ 500 Watt with 30CFM FAN (MQF500O only)
- ◆ Built-in 12V/0.3A Auxiliary Output
- ◆ High Efficiency up to 93%
- ◆ With P.F.C. Function >0.94
- ◆ Standby 5V@1A with Fan, @0.4A without Fan (MQF500O)
- ◆ Standby 5V@1A (MQF500E)
- ◆ Suitable for BF Application with Appropriate System Consideration
- ◆ UL / IEC / EN 60601 3.1 Edition & UL / IEC / EN 60950 AM2 Safety Approvals
- ◆ 3-Year Warranty

**Input Specifications**

Voltage Range	90 ~ 264VAC or 127~ 370 VDC
Frequency	47 ~ 63 Hz

**Output Specifications**

Output Power	MQF500O:	
	Convection: 230 Watt (115 VAC)	(max.)
	240 Watt (230 VAC)	(Max.)
	30CFM FAN: 500 Watt	(max.)
	MQF500E: 500 Watt	(max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)	
Minimum Load	3% (at Full Load)	
Line Regulation	±0.5% (115-264 VAC) (typ.)	
Load Regulation	±1% (10% to 100% at Full Load)	
Ripple & Noise (20MHz bandwidth) (at Full Load)	12S: 160mV	(Vp-p) (typ.)
	24S: 240mV	(Vp-p) (typ.)
	48S: 480mV	(Vp-p) (typ.)
Temperature Coefficient	±0.03% / °C (0~50°C)	(max.)
	±0.06% / °C (-30~0°C)	(max.)
Short Circuit Protection	Auto recovery, Hiccup mode	

**General Specifications**

Efficiency (see table list)	MQF500O: 90.5% to 93.5% (typ.)
	MQF500E: 89% to 92% (typ.)
Isolation Voltage	4000 VAC or 5656 VDC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-30°C to +70°C (with Derating)
Storage Temperature	-35°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection

**Physical Specifications**

Dimension (Tolerance ±0.5 mm)	MQF500O:	127.8 x 76.2 x 35.0 mm
		5.03 x 3.0 x 1.38 inches
	MQF500E:	139.7 x 82.55 x 62.9 mm
		5.5 x 3.25 x 2.48 inches
Weight	MQF500O: 480 g / MQF500E: 690 g	

**Models**

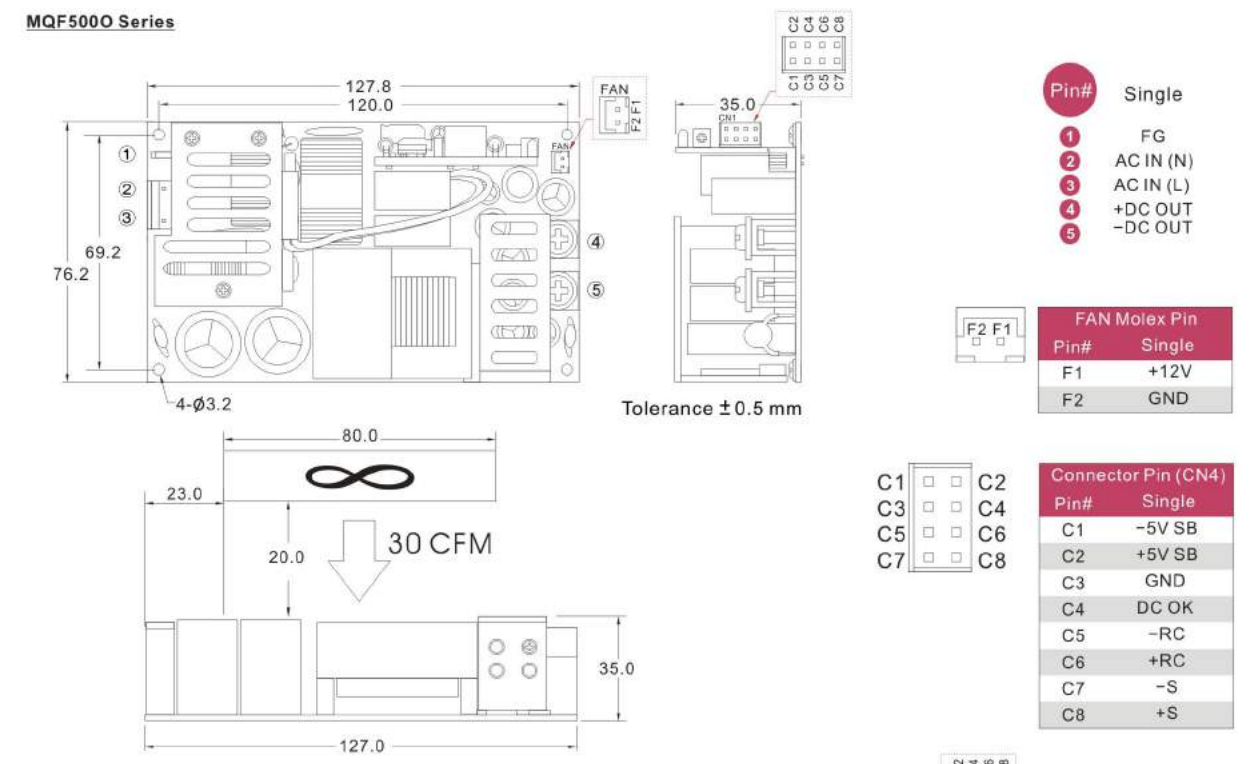
► **MQF500O Single Output**

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (A) max.		Eff (%)
			Convection Vin: 115 / 230	30 CFM FAN	
MQF500O-12S	90~264	12	19.16 / 20	41.5	90.5
MQF500O-24S	90~264	24	9.58 / 10	20.8	92
MQF500O-48S	90~264	48	4.8 / 5	10.41	93

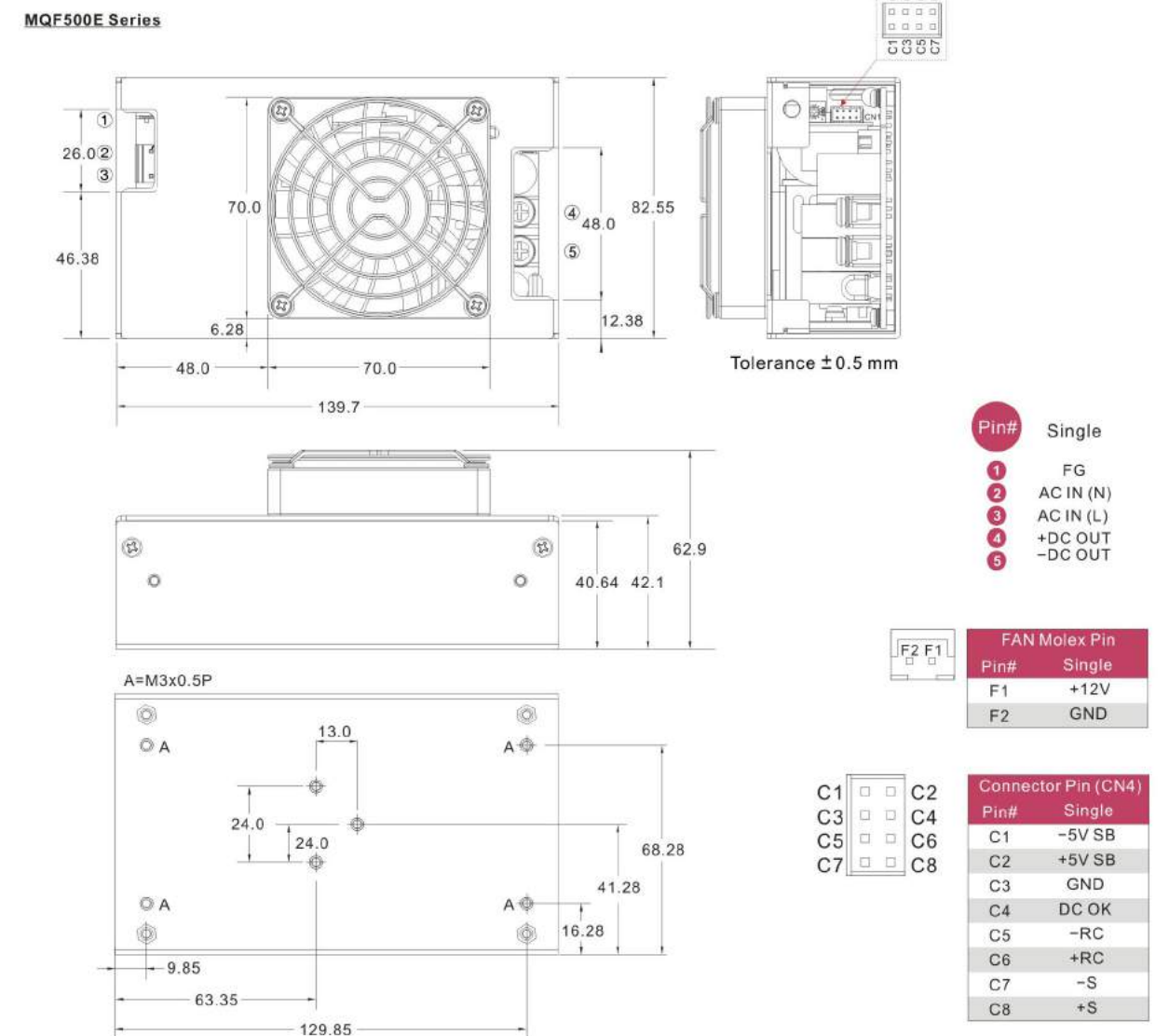
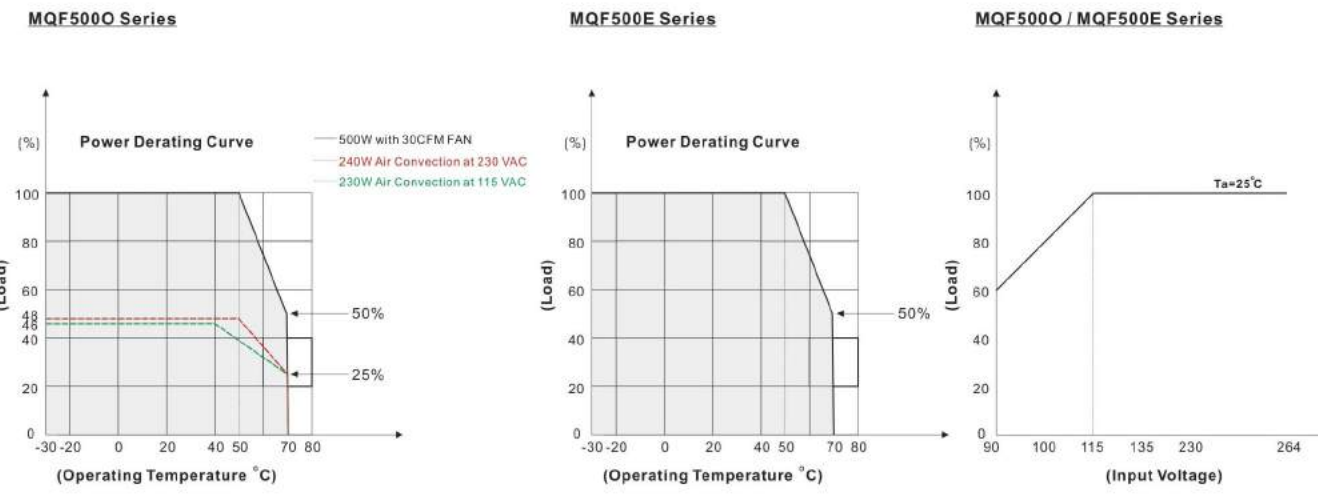
► **MQF500E Single Output**

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (A) max.	Eff (%)
MQF500E-12S	90~264	12	41.5	89
MQF500E-24S	90~264	24	20.8	91
MQF500E-48S	90~264	48	10.41	92

**Outline Dimensions & Pin Connections (Top View)**



**Derating**

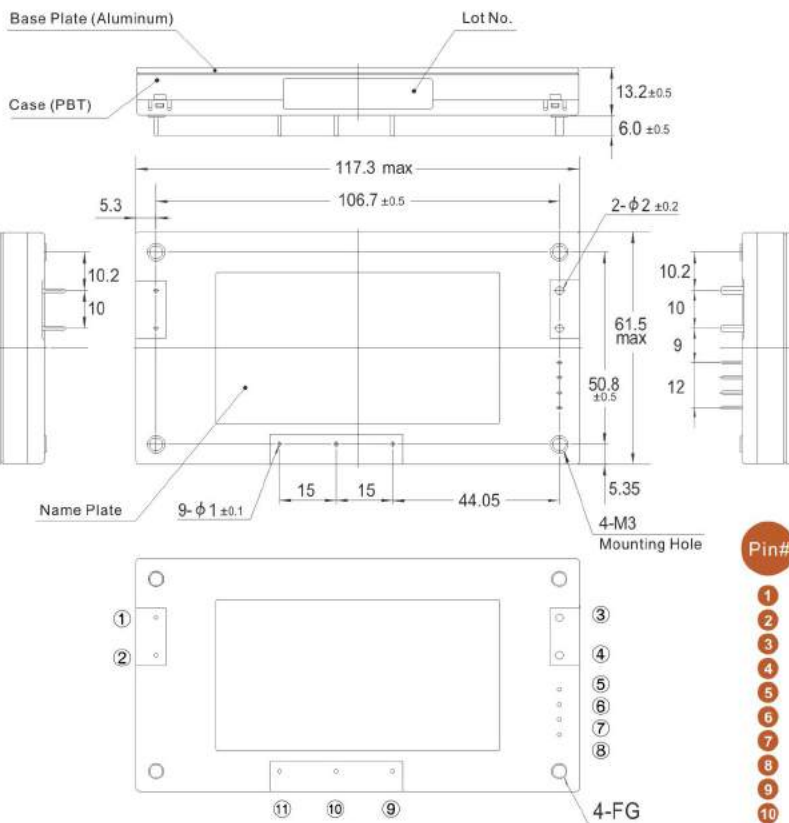


**NEW** **300 Watt**  
**ABR300 Series**



- ◆ Power Module for PCB Mountable
- ◆ Universal Input: 90-264 VAC, 50/60 Hz (47-63 Hz)
- ◆ Full Brick Size with Base Plate
- ◆ Over Current Protection
- ◆ Over Voltage Protection
- ◆ Over Temperature Protection
- ◆ Short Circuit Protection
- ◆ Remote Sense
- ◆ CE, UL Approvals
- ◆ 3-Year Warranty

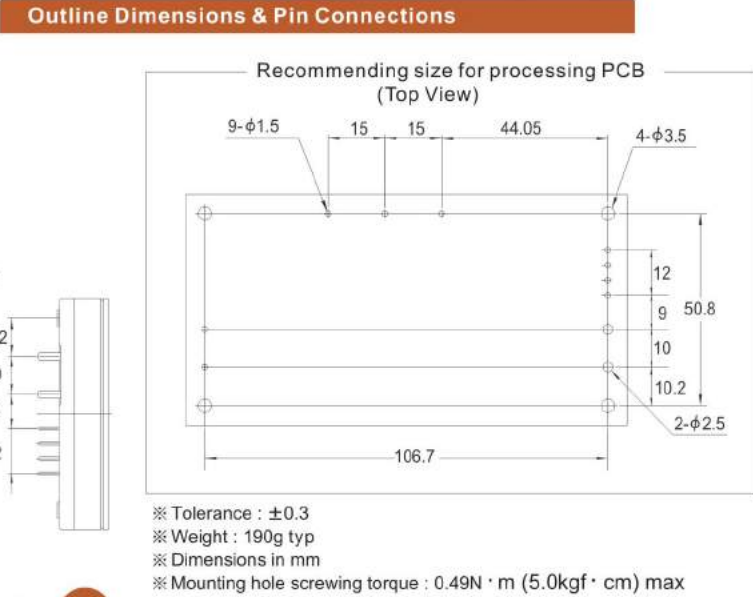
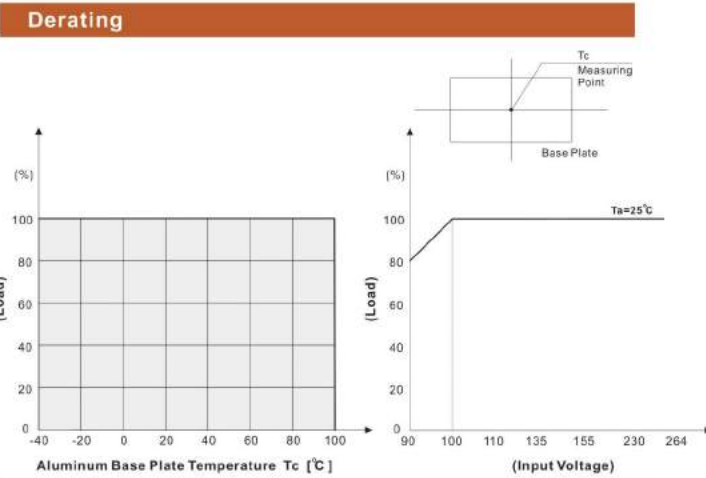
Input Specifications	
Voltage Range	90 ~ 264VAC
Frequency	50/60 Hz (47-63 Hz)
Output Specifications	
Output Power	300 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	0% (at Full Load)
Line Regulation	±1% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (5% to 100% at Full Load) (typ.)
Ripple & Noise (20MHz bandwidth)	12S: 150mV (Vp-p) (max.) 24S,28S: 200mV (Vp-p) (max.) 48S: 300mV (Vp-p) (max.)
Temperature Coefficient	±0.05% / °C (0-50°C)
Short Circuit Protection	Auto recovery, Hiccup mode
General Specifications	
Efficiency (see table list)	90% to 91% (typ.)
Isolation Voltage	3000 VAC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-40°C to +100°C (On Aluminum Base Plate)
Storage Temperature	-40°C to +100°C
Humidity	20-95% RH (Non condensing) (max.)
Cooling	Conduction cooling
Physical Specifications	
Dimension (max.)	117.3 x 61.5 x 13.2 mm 4.62 x 2.42 x 0.52 inches
Weight	In Progress



**Models**

► **ABR300 Single Output**

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (A) max.	Eff (%)
ABR300-12S	90~264	12	25	90
ABR300-24S	90~264	24	12.5	90
ABR300-28S	90~264	28	11	90.5
ABR300-48S	90~264	48	6.25	91



- Pin#** Single
- 1 AC IN (L)
  - 2 AC IN (N)
  - 3 -DC OUT
  - 4 +DC OUT
  - 5 -S
  - 6 +S
  - 7 TRIM
  - 8 ENA
  - 9 -BC
  - 10 +BC
  - 11 R

**NEW Preliminary** **300 Watt**  
**ABR300E Series**



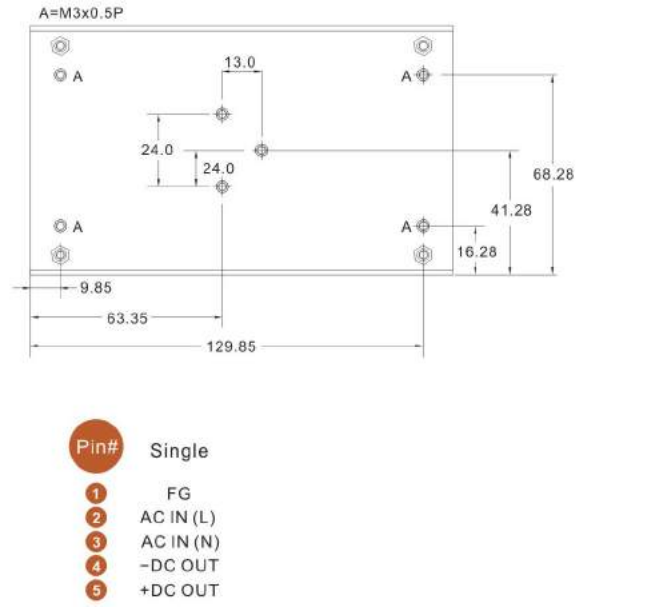
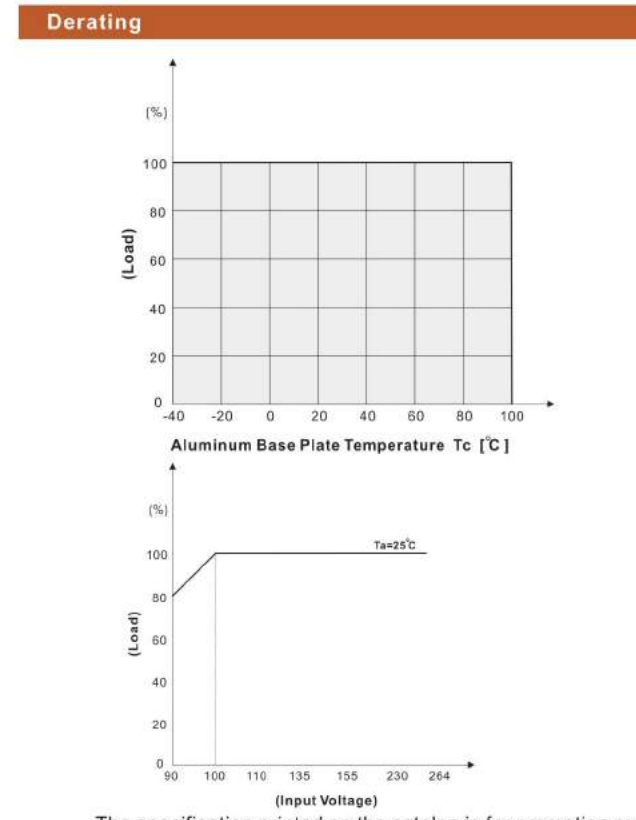
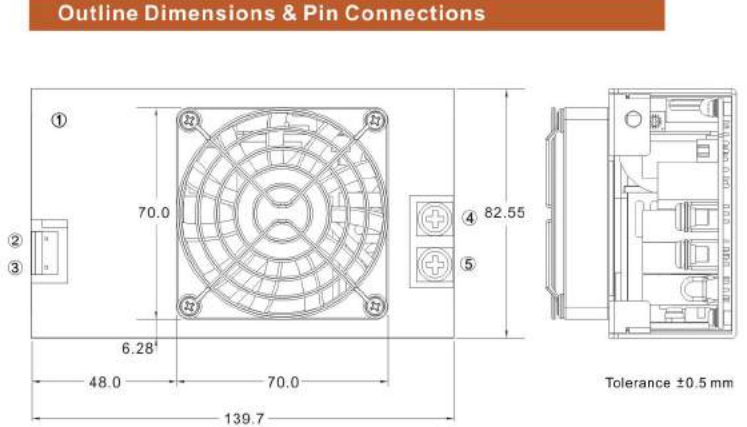
- ◆ Enclosed Package
- ◆ Universal Input: 90-264 VAC, 50/60 Hz (47-63 Hz)
- ◆ Full Brick Size with Base Plate
- ◆ Over Current Protection
- ◆ Over Voltage Protection
- ◆ Over Temperature Protection
- ◆ Short Circuit Protection
- ◆ Remote Sense
- ◆ CE, UL Approvals
- ◆ 3-Year Warranty

Input Specifications	
Voltage Range	90 ~ 264VAC
Frequency	50/60 Hz (47-63 Hz)
Output Specifications	
Output Power	300 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	0% (at Full Load)
Line Regulation	±1% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (5% to 100% at Full Load) (typ.)
Ripple & Noise (20MHz bandwidth)	12S: 200mV (Vp-p) (max.) 24S: 240mV (Vp-p) (max.) 28S: 280mV (Vp-p) (max.) 28S: 480mV (Vp-p) (max.)
Temperature Coefficient	±0.05% / °C (0-50°C)
Short Circuit Protection	Auto recovery, Hiccup mode
General Specifications	
Efficiency (see table list)	89% to 90% (typ.)
Isolation Voltage	3000 VAC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-40°C to +100°C (On Aluminum Base Plate)
Storage Temperature	-40°C to +100°C
Humidity	20-95% RH (Non condensing) (max.)
Cooling	Conduction cooling
Physical Specifications	
Dimension (max.)	139.7 x 82.55 x 50 mm 5.5 x 3.25 x 1.97 inches
Weight	In Progress

**Models**

► **ABR300E Single Output**

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (A) max.	Eff (%)
ABR300E-12S	90~264	12	25	89
ABR300E-24S	90~264	24	12.5	89
ABR300E-28S	90~264	28	11	89.5
ABR300E-48S	90~264	48	6.25	90





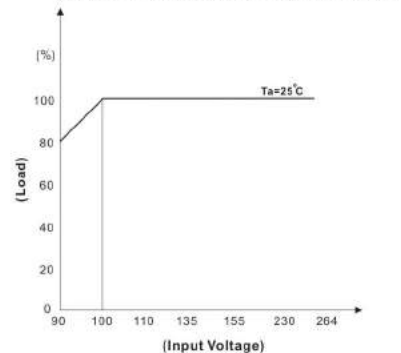
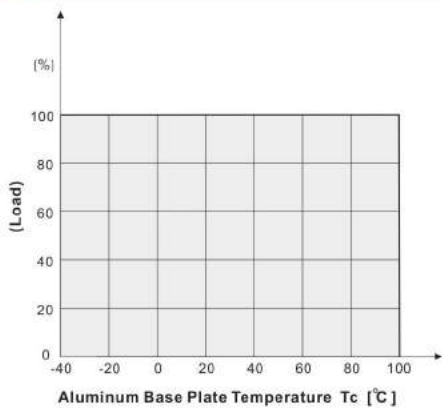
**NEW Preliminary 300 Watt ABR300U Series**



- ◆ U Bracket Package
- ◆ Universal Input: 90-264 VAC, 50/60 Hz (47-63 Hz)
- ◆ Full Brick Size with Base Plate
- ◆ 200 Watt with Free Air Convection
- ◆ 300 Watt with 10CFM FAN
- ◆ Over Current Protection
- ◆ Over Voltage Protection
- ◆ Over Temperature Protection
- ◆ Short Circuit Protection
- ◆ Remote Sense
- ◆ CE, UL Approvals
- ◆ 3-Year Warranty

Input Specifications	
Voltage Range	90 ~ 264VAC
Frequency	50/60 Hz (47-63 Hz)
Output Specifications	
Output Power	Convection: 200 Watt (max.)
	10CFM FAN: 300 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	0% (at Full Load)
Line Regulation	±1% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (5% to 100% at Full Load) (typ.)
Ripple & Noise (20MHz bandwidth)	12S: 200mV (Vp-p) (max.)
	24S: 240mV (Vp-p) (max.)
	28S: 280mV (Vp-p) (max.)
	48S: 480mV (Vp-p) (max.)
Temperature Coefficient	±0.05% / °C (0~50°C)
Short Circuit Protection	Auto recovery, Hiccup mode
General Specifications	
Efficiency (see table list)	90% to 91% (typ.)
Isolation Voltage	3000 VAC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-40°C to +100°C (On Aluminum Base Plate)
Storage Temperature	-40°C to +100°C
Humidity	20~95% RH (Non condensing) (max.)
Cooling	Conduction cooling
Physical Specifications	
Dimension (max.)	139.7 x 82.55 x 40.5 mm
	5.5 x 3.25 x 1.59 inches
Weight	In Progress

**Derating**

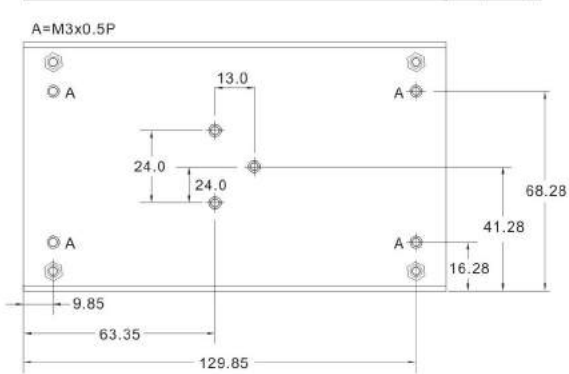
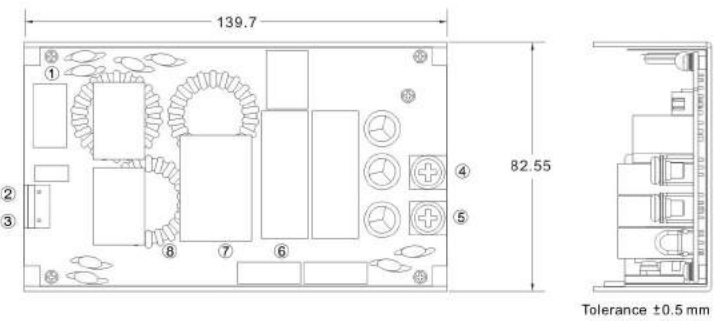


**Models**

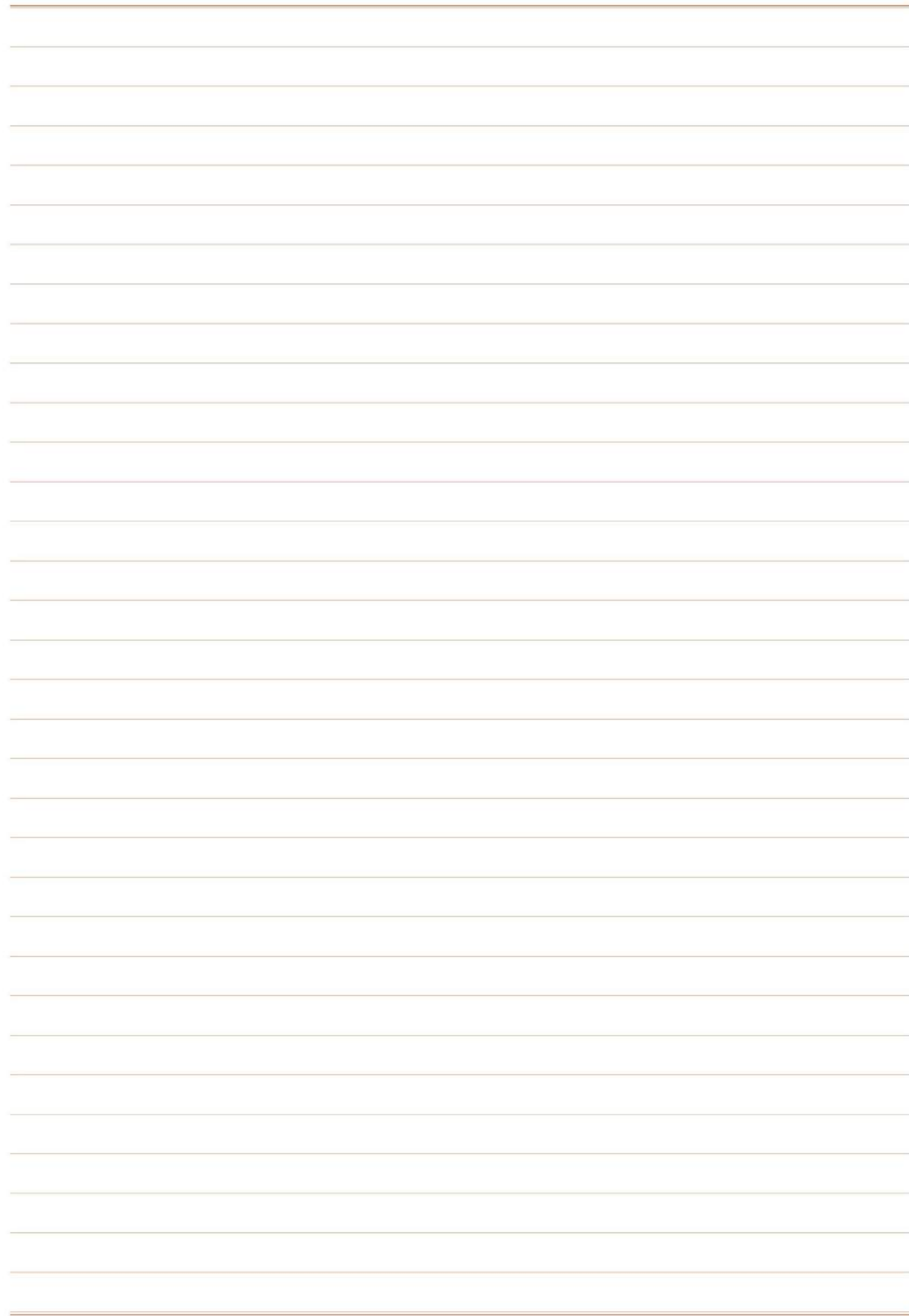
▶ ABR300U Single Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (A) max.		Eff (%)
			Convection	10.CFM.FAN	
ABR300U-12S	90~264	12	16.67	25	90
ABR300U-24S	90~264	24	8.33	12.5	90
ABR300U-28S	90~264	28	7.14	11	90.5
ABR300U-48S	90~264	48	4.17	6.25	91

**Outline Dimensions & Pin Connections**



- |      |           |
|------|-----------|
| Pin# | Single    |
| 1    | FG        |
| 2    | AC IN (L) |
| 3    | AC IN (N) |
| 4    | -DC OUT   |
| 5    | +DC OUT   |
| 6    | -BC       |
| 7    | +BC       |
| 8    | R         |



60 Watt

AES60 Series



- ◆ Open Frame, U Bracket and Enclosed Package
- ◆ Universal Input: 90-264 VAC, 47-63 Hz
- ◆ 5 VDC to 48 VDC Single Output
- ◆ Ultra Compact Size:  
AES60O: 4.1 x 2.05 x 1.0 Inches  
AES60U & AES60E: 4.13 x 2.28 x 1.5 Inches
- ◆ CE, UL Approvals
- ◆ 3-Year Warranty

Models

► AES60O Single Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AES60O-5S	90~264	5	10000	82
AES60O-9S	90~264	9	6660	84
AES60O-12S	90~264	12	5000	86
AES60O-15S	90~264	15	4000	86
AES60O-24S	90~264	24	2500	86
AES60O-48S	90~264	48	1250	86

► AES60U Single Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AES60U-5S	90~264	5	10000	82
AES60U-9S	90~264	9	6660	84
AES60U-12S	90~264	12	5000	86
AES60U-15S	90~264	15	4000	86
AES60U-24S	90~264	24	2500	86
AES60U-48S	90~264	48	1250	86

► AES60E Single Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AES60E-5S	90~264	5	10,000	82
AES60E-9S	90~264	9	6660	84
AES60E-12S	90~264	12	5000	86
AES60E-15S	90~264	15	4000	86
AES60E-24S	90~264	24	2500	86
AES60E-48S	90~264	48	1250	86

Input Specifications

Voltage Range	90 ~ 264VAC or 120 ~ 370 VDC
Frequency	47 ~ 63 Hz

Output Specifications

Output Power	60 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	1% (at Full Load)
Line Regulation	±1% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (5% to 100% at Full Load) (typ.)
Ripple(20MHz bandwidth)	<0.2% Vout +40mV (Vp-p) (max.)
Noise (20MHz bandwidth)	<0.5% Vout +50mV (Vp-p) (max.)
Temperature Coefficient	±0.02% / °C (max.)
Short Circuit Protection	Auto recovery

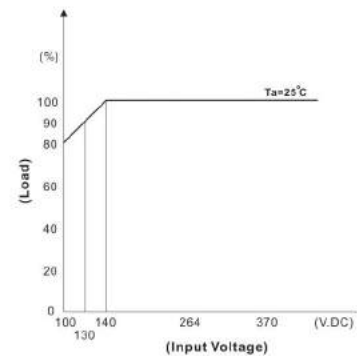
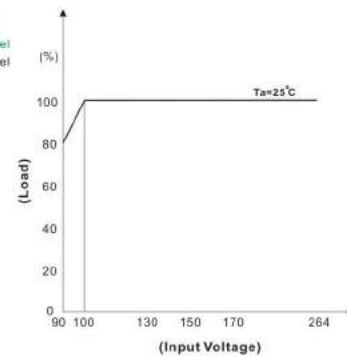
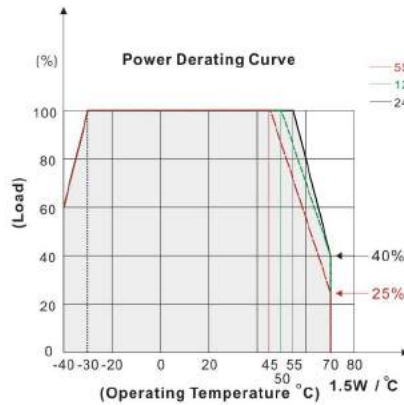
General Specifications

Efficiency (see table list)	82% to 86% (typ.)
Isolation Voltage	3000 VAC or 4242 VDC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-40°C to +70°C (with Derating)
Storage Temperature	-40°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection

Physical Specifications

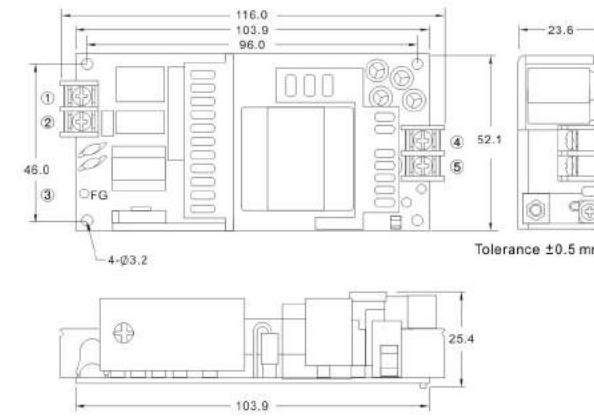
Dimension (Tolerance ±0.5 mm)	AES60O: 103.9 x 52.1 x 25.4 mm 4.1 x 2.05 x 1.0 inches
	AES60U/E: 105.0 x 58.0 x 38.1 mm 4.13 x 2.28 x 1.5 inches
Weight	AES60O: 150 g
	AES60U: 240 g
	AES60E: 260 g

Derating

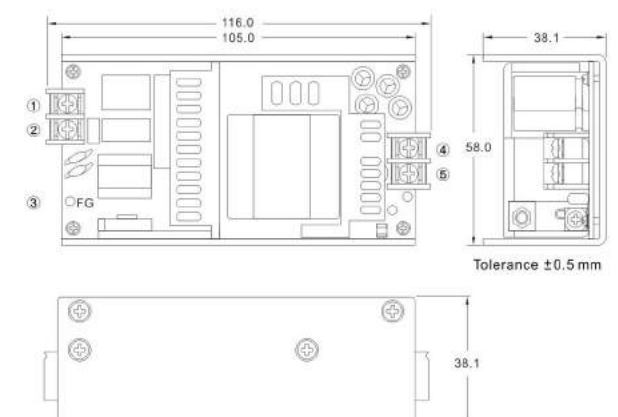


Outline Dimensions & Pin Connections (Top View)

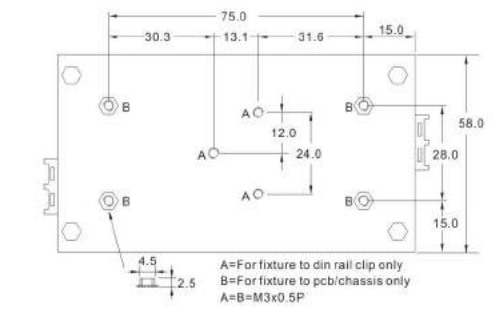
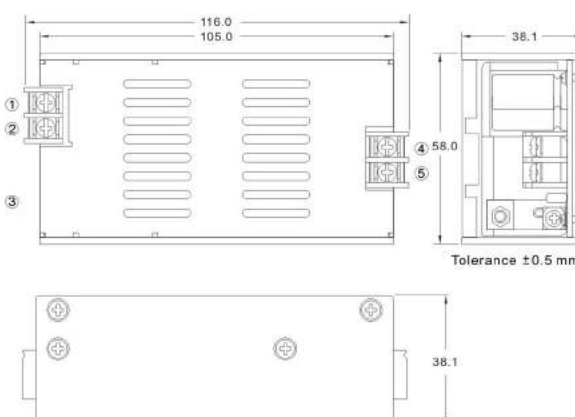
AES60O Series



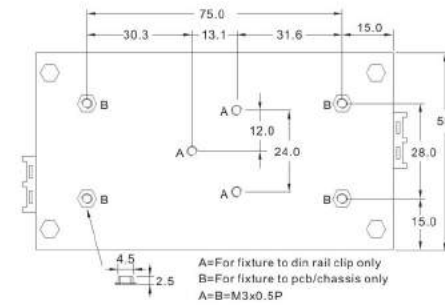
AES60U Series



AES60E Series



- Pin# Single
- 1 AC IN (N)
  - 2 AC IN (L)
  - 3 FG
  - 4 +DC OUT
  - 5 -DC OUT





SZA60 Series

60 Watt

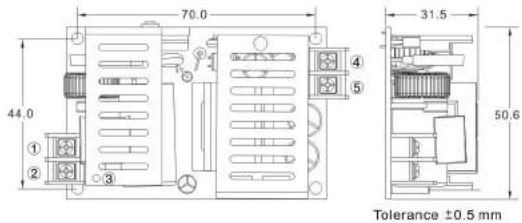


- ◆ Open Frame and U Bracket Package
- ◆ Universal Input: 90-264 VAC, 47-63 Hz
- ◆ <0.3W No Load Input Power
- ◆ Ultra Compact Size:
  - SZA60O: 3.0 x 2.0 x 1.24 Inches
  - SZA60U: 3.15 x 2.35 x 1.5 Inches
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty

Input Specifications	
Voltage Range	90 ~ 264VAC or 120 ~ 370 VDC
Frequency	47 ~ 63 Hz
Output Specifications	
Output Power	60 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	0% (at Full Load)
Line Regulation	±1% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (5% to 100% at Full Load) (typ.)
Ripple & Noise (20MHz bandwidth)	5S: 75mV (Vp-p) (max.) 12S: 100mV (Vp-p) (max.) 15S: 125mV (Vp-p) (max.) 24S: 150mV (Vp-p) (max.) 48S: 200mV (Vp-p) (max.)
Temperature Coefficient	±0.02% / °C (max.)
Short Circuit Protection	Auto recovery
General Specifications	
Efficiency (see table list)	81% to 88% (typ.)
Isolation Voltage	3000 VAC or 4242 VDC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-30°C to +70°C (with Derating)
Storage Temperature	-50°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Physical Specifications	
Dimension (Tolerance ±0.5 mm)	SZA60O: 76.3 x 50.6 x 31.5 mm 3.0 x 2.0 x 1.24 inches SZA60U: 80.0 x 59.7 x 38.0 mm 3.15 x 2.35 x 1.5 inches
Weight	SZA60O: 150 g SZA60U: 220 g

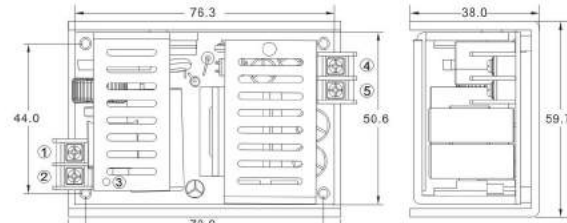
Outline Dimensions & Pin Connections (Top View)

SZA60O Series

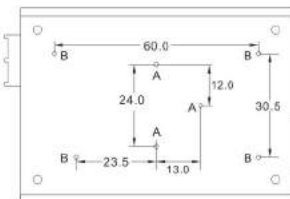


- | Pin# | Single    |
|------|-----------|
| 1    | AC IN (N) |
| 2    | AC IN (L) |
| 3    | FG        |
| 4    | +DC OUT   |
| 5    | -DC OUT   |

SZA60U Series



- | Pin# | Single    |
|------|-----------|
| 1    | AC IN (N) |
| 2    | AC IN (L) |
| 3    | FG / PE   |
| 4    | +DC OUT   |
| 5    | -DC OUT   |



A=For fixture to din rail clip only  
B=For fixture to pcb/chassis only  
A=M3x0.5P  
B=M3x0.5P  
(Mounting/locking kit should not be screwed in more than 3mm)



AQF600 Series

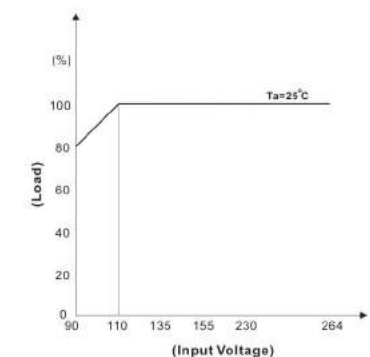
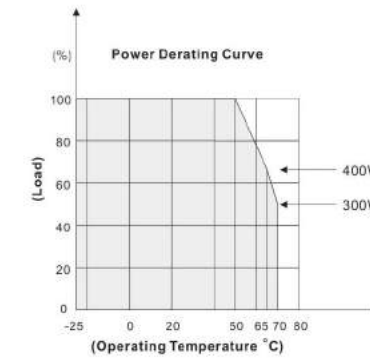
600 Watt



- ◆ Enclosed Switching Power Supply
- ◆ With P.F.C. Function, PF>0.95
- ◆ Remote ON/OFF Function
- ◆ Current Share Function
- ◆ Power Good Function
- ◆ High Efficiency up to 93%
- ◆ High Density
- ◆ Protections: Over Load / Over Voltage / Over Temperature / Short Circuit
- ◆ CE, UL Approvals
- ◆ 3-Year Warranty

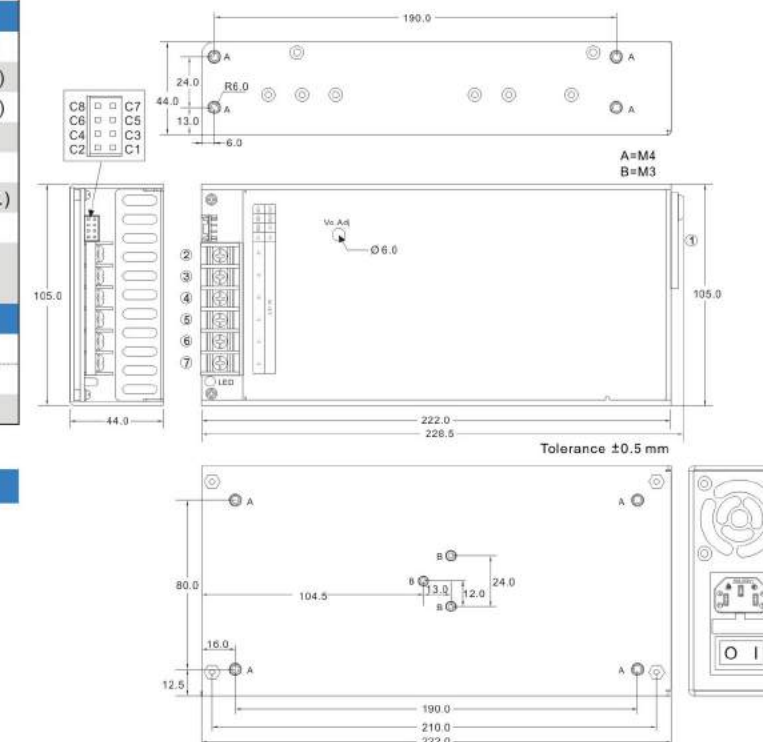
Input Specifications	
Voltage Range	90 ~ 264VAC or 120 ~ 370 VDC
Frequency	47 ~ 63 Hz
Output Specifications	
Output Power	600 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	1% (at Full Load)
Line Regulation	±1% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (5% to 100% at Full Load) (typ.)
Ripple & Noise	<1% Vout (20MHz bandwidth) (max.)
Temperature Coefficient	±0.03% / °C (0~50°C) (max.)
Short Circuit Protection	Latch Off
General Specifications	
Efficiency (see table list)	90% to 93% (typ.)
Isolation Voltage	3000 VAC or 4242 VDC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-25°C to +70°C (with Derating)
Storage Temperature	-25°C to +85°C
Humidity	95% RH (max.)
Cooling	Internal Fan
Vibration	10~500Hz, 2G 10min./1cycle, 60min. Each along X, Y, Z axes.
Physical Specifications	
Dimension (Tolerance ±0.5 mm)	228.5 x 105.0 x 44.0 mm 9.0 x 4.13 x 1.72 inches
Weight	1024±50 g

Derating



Models				
▶ AQF600 Single Output				
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (A) max.	Eff (%)
AQF600-12S	90~264	12	45	90
AQF600-24S	90~264	24	25	92
AQF600-48S	90~264	48	12.5	92
AQF600-54S	90~264	54	11.1	93

Outline Dimensions & Pin Connections (Top View)



Pin#	Single
1	AC IN
2	+DC OUT
3	+DC OUT
4	+DC OUT
5	-DC OUT
6	-DC OUT
7	-DC OUT

- | Pin# | Single  |
|------|---------|
| 1    | AC IN   |
| 2    | +DC OUT |
| 3    | +DC OUT |
| 4    | +DC OUT |
| 5    | -DC OUT |
| 6    | -DC OUT |
| 7    | -DC OUT |

Pin#	Single
C1	+S
C2	-S
C3	CS
C4	GND
C5	GND
C6	+RC
C7	+PG
C8	+5V-AUX

Connector Pin (CN4)	Single
C1	+S
C2	-S
C3	CS
C4	GND
C5	GND
C6	+RC
C7	+PG
C8	+5V-AUX

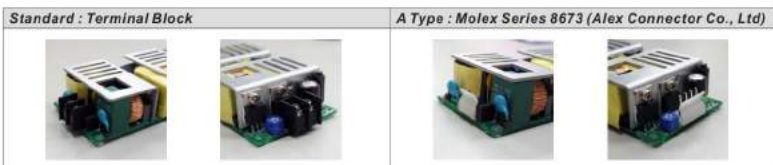
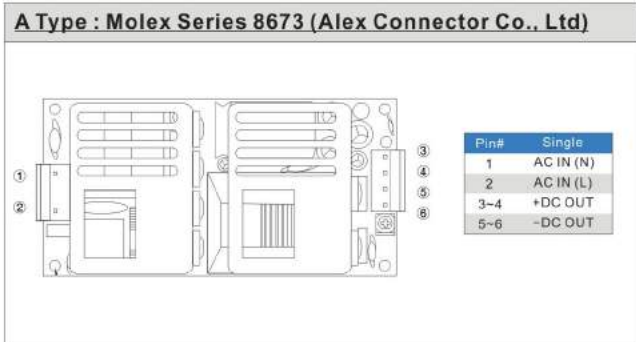
100 Watt

AQF1000 Series



- ◆ Open Frame 100W Power Supply in 4.0" x 2.0" Size
- ◆ Active PFC Function, >0.95 (230Vac), >0.99 (115Vac)
- ◆ Universal Input: 90-264 VAC, 47-63 Hz
- ◆ 120W with FAN (20CFM / 300LFM)
- ◆ Low Leakage Current, <250uA
- ◆ EN55022 Class B Meets
- ◆ Continuous Short Circuit Protection with Hiccup Mode and Auto Recover
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty

Input Specifications	
Voltage Range	90 ~ 264VAC or 120 ~ 370 VDC
Frequency	47 ~ 63 Hz
Output Specifications	
Output Power	Free air Convection: 100 Watt (max.) 30CFM / 300LFM: 120 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	3% (at Full Load)
Line Regulation	±1% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (typ.)
Ripple & Noise (20MHz bandwidth)	12S: 120mV (Vp-p) (max.) 15S: 150mV (Vp-p) (max.) 24S: 200mV (Vp-p) (max.) 48S: 240mV (Vp-p) (max.)
Temperature Coefficient	±0.03% / °C (0~50°C) (max.)
Short Circuit Protection	Auto recovery, Hiccup mode
General Specifications	
Efficiency (see table list)	89% to 93% (typ.)
Isolation Voltage	3000 VAC or 4242 VDC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-25°C to +70°C (with Derating)
Storage Temperature	-25°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Vibration	10~500Hz, 2G 10min./1cycle, 60min. Each along X, Y, Z axes.
Physical Specifications	
Dimension (Tolerance ±0.5 mm)	103.9 x 54.1 x 25.0 mm 4.1 x 2.13 x 0.98 inches
Weight	200 g



160 Watt

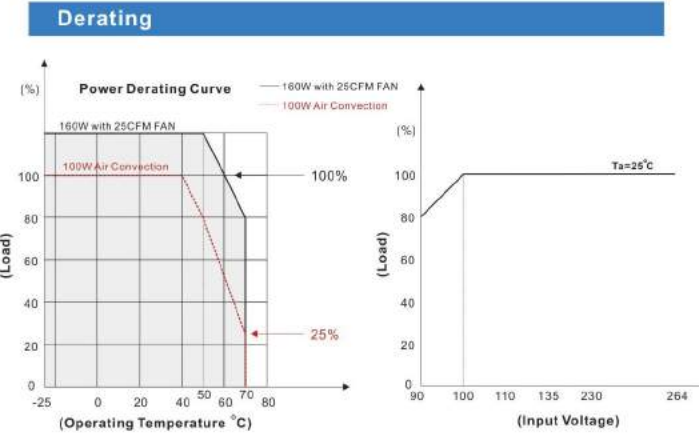
AQF160 Series



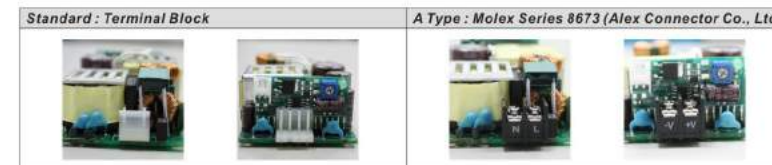
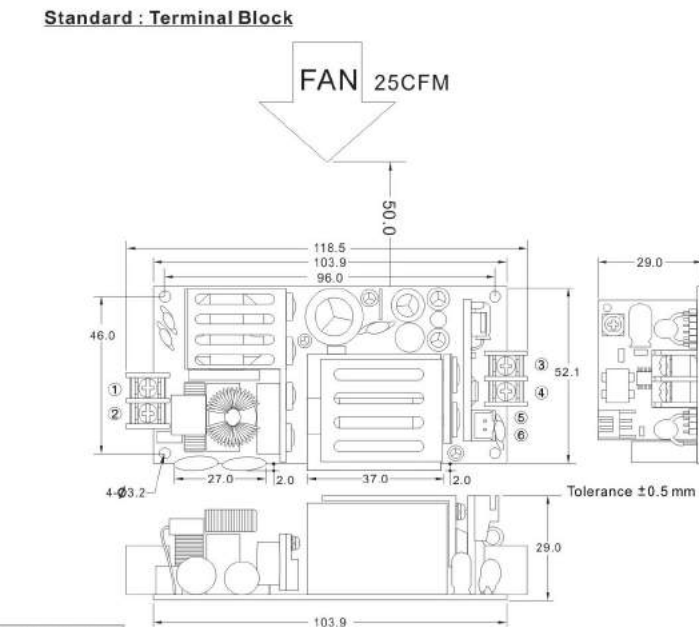
- ◆ Open Frame 100W Power Supply in 4.0" x 2.0" Size
- ◆ Active PFC Function, >0.95 (230Vac), >0.98 (115Vac)
- ◆ 100W Full Load at 40°C Under Free Air Convection
- ◆ 160W with 25CFM FAN
- ◆ <0.5W No Load Input Power (except AQF 160-48S)
- ◆ 12V (Aux) / 0.3A
- ◆ EN55022 Class B Meets
- ◆ Isolation Class I
- ◆ Continuous Short Circuit Protection with Hiccup Mode and Auto Recover
- ◆ CE, UL Approvals
- ◆ 3-Year Warranty

Input Specifications	
Voltage Range	90 ~ 264VAC or 120 ~ 370 VDC
Frequency	47 ~ 63 Hz
Output Specifications	
Output Power	Free air Convection: 100 Watt (max.) 25CFM: 160 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Line Regulation	±1% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (10% to 100% at Full Load) (typ.)
Ripple & Noise (20MHz bandwidth)	12S: 130mV (Vp-p) (max.) others: 1% Vout (Vp-p) (max.)
Temperature Coefficient	±0.03% / °C (0~70°C) (max.) ±0.06% / °C (-25~0°C) (max.)
Short Circuit Protection	Auto recovery, Hiccup mode
General Specifications	
Efficiency (see table list)	90% to 91.5% (typ.)
Isolation Voltage	3000 VAC or 4242 VDC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-25°C to +70°C (with Derating)
Storage Temperature	-25°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Vibration	10~500Hz, 2G 10min./1cycle, 60min. Each along X, Y, Z axes.
Physical Specifications	
Dimension (Tolerance ±0.5 mm)	103.9 x 52.1 x 29.0 mm 4.09 x 2.05 x 1.14 inches
Weight	220 g

Models					
▶ AQF160 Single Output					
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (A) max.	Eff (%)	
			Convection	25 CFM FAN	
AQF160-12S	90~264	12	8.4	13.3	90
AQF160-15S	90~264	15	6.7	10.6	90
AQF160-24S	90~264	24	4.2	6.66	90
AQF160-48S	90~264	48	2.1	3.33	91.5



Outline Dimensions & Pin Connections (Top View)



180 Watt

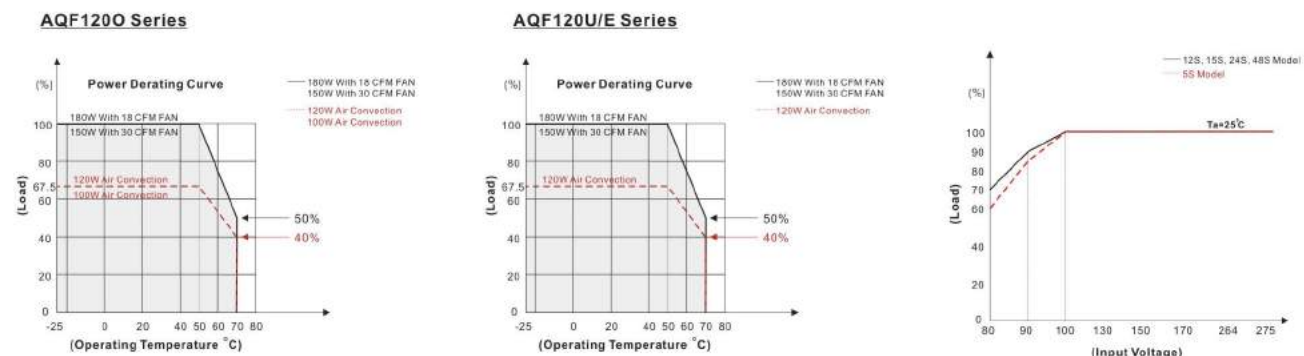
AQF120 Series



- ◆ Open Frame, U Bracket and Enclosed Package
- ◆ High Efficiency up to 93%
- ◆ With P.F.C. Function >0.95
- ◆ 120 Watt with Free Air Convection
- ◆ 180 Watt with 18 and 30CFM FAN
- ◆ Ultra Compact Size:  
AQF120O: 5.0 x 3.0 x 1.16 Inches  
AQF120U & AQF120E: 5.0 x 3.24 x 1.5 Inches
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty

Input Specifications	
Voltage Range	90 ~ 264VAC or 120 ~ 370 VDC
Frequency	80 ~ 274 VAC or 110-390 VDC with Derating 47 ~ 63 Hz
Output Specifications	
Output Power	Free air Convection: 120 Watt (max.) 18CFM / 30CFM FAN: 180 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load (at Full Load)	5S: 5% others: 1%
Line Regulation	±1% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (typ.)
Ripple & Noise (20MHz bandwidth)	5S,24S: 100mV (Vp-p) (max.) 12S,15S: 50mV (Vp-p) (max.) 48S: 200mV (Vp-p) (max.)
Temperature Coefficient	±0.03% / °C (0~50°C) (max.)
Short Circuit Protection	Auto recovery
General Specifications	
Efficiency (see table list)	87% to 93% (typ.)
Isolation Voltage	4000 VAC or 5656 VDC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-25°C to +70°C (with Derating)
Storage Temperature	-25°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Vibration	10~500Hz, 2G 10min./1cycle, 60min. Each along X, Y, Z axes.
Physical Specifications	
Dimension (Tolerance ±0.5 mm)	AQF120O-5S: 127.0 x 76.2 x 31.5 mm 5.0 x 3.0 x 1.24 inches AQF120O-12S: 127.0 x 76.2 x 29.5 mm 15S,24S,48S: 5.0 x 3.0 x 1.16 inches AQF120U/E: 127.0 x 82.2 x 38.1 mm 5.0 x 3.24 x 1.5 inches
Weight	AQF120O-5S: 350 g AQF120O-5S,15S,24S,48S: 280 g AQF120U: 382 g AQF120E: 400 g

Derating

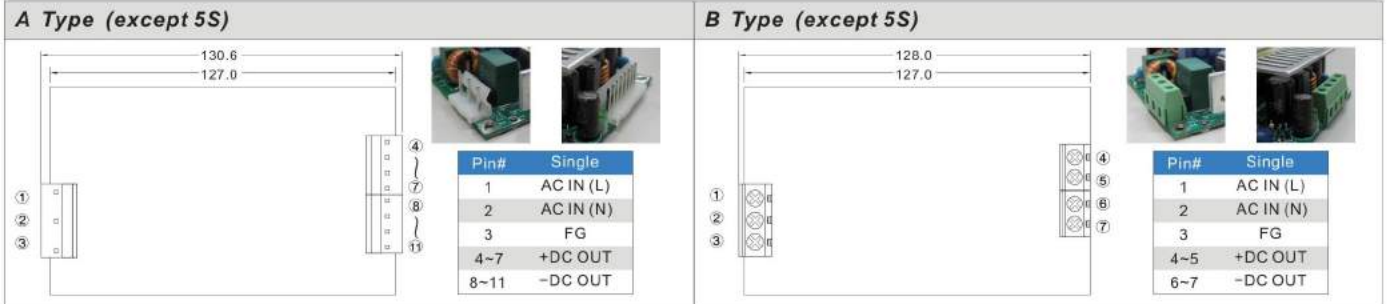
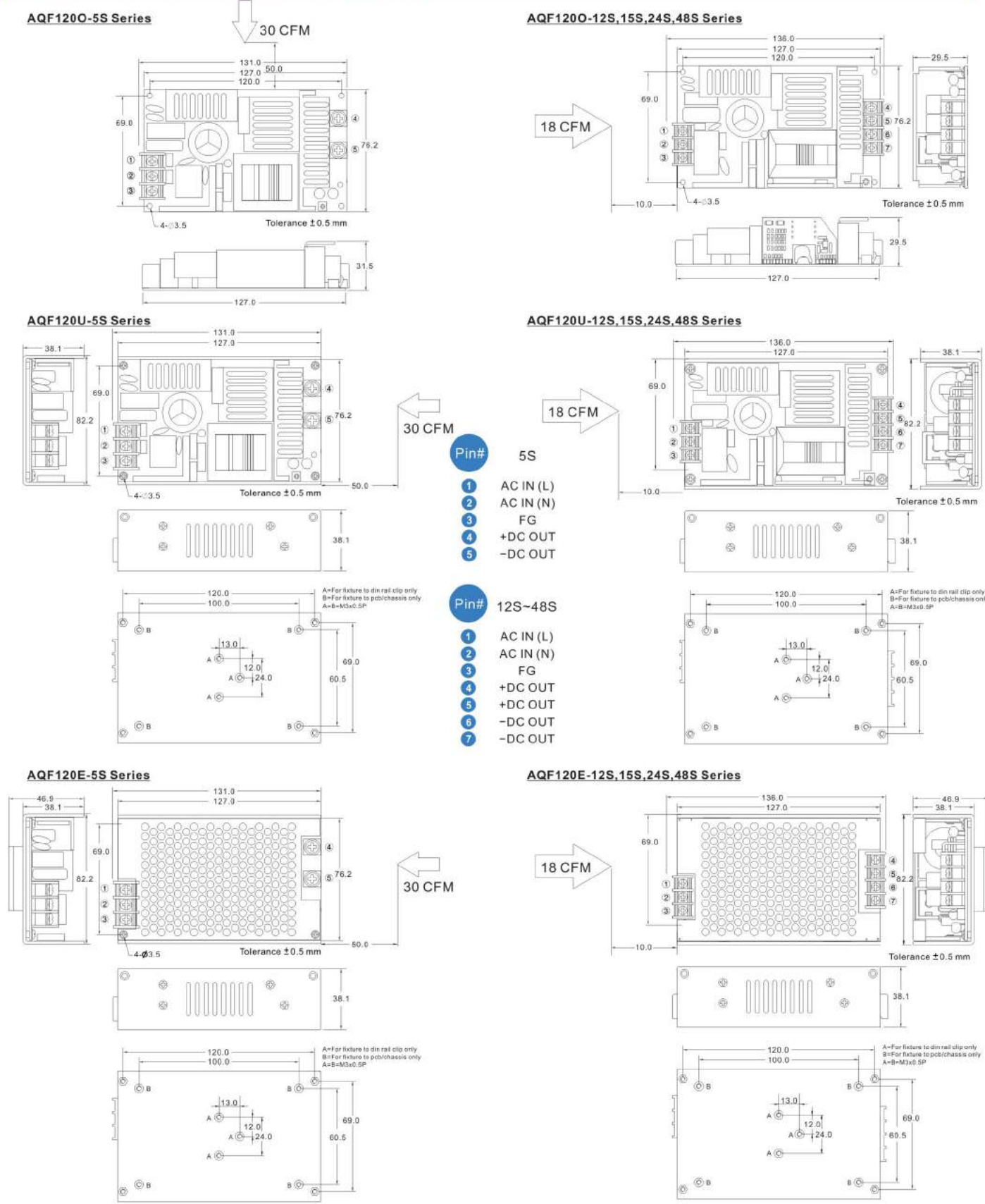


Models					
▶ AQF120O Single Output					
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (A) max.	Eff (%)	
AQF120O-5S	90~264	5	0~20	0~30	87
AQF120O-12S	90~264	12	0~10	0~15	90
AQF120O-15S	90~264	15	0~8	0~12	90
AQF120O-24S	90~264	24	0~5	0~7.5	93
AQF120O-48S	90~264	48	0~2.5	0~3.75	93
▶ AQF120U Single Output					
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (A) max.	Eff (%)	
AQF120U-5S	90~264	5	0~24	0~30	87
AQF120U-12S	90~264	12	0~10	0~15	90
AQF120U-15S	90~264	15	0~8	0~12	90
AQF120U-24S	90~264	24	0~5	0~7.5	93
AQF120U-48S	90~264	48	0~2.5	0~3.75	93
▶ AQF120E Single Output					
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (A) max.	Eff (%)	
AQF120E-5S	90~264	5	0~24	0~30	87
AQF120E-12S	90~264	12	0~10	0~15	90
AQF120E-15S	90~264	15	0~8	0~12	90
AQF120E-24S	90~264	24	0~5	0~7.5	93
AQF120E-48S	90~264	48	0~2.5	0~3.75	93

**Note:**  
5V and 15V Output Voltage without UL Approval.  
(AQF120O-5S - AQF120O-15S - AQF120U-5S - AQF120U-15S - AQF120E-5S - AQF120E-15S)



Outline Dimensions & Pin Connections (Top View)



240 Watt

AQF240 Series



- ◆ U Bracket and Enclosed Package
- ◆ High Efficiency up to 93%
- ◆ With P.F.C. Function >0.95
- ◆ Free Air Convection
- ◆ Ultra Compact Size:  
AQF240U-5S: 6.0 x 4.18 x 1.46 Inches  
AQF240U-12S~48S/AQF240E: 6.0 x 4.18 x 1.38 Inches
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty

Input Specifications

Voltage Range	90 ~ 264VAC or 120 ~ 370 VDC
Frequency	47 ~ 63 Hz

Output Specifications

Output Power	240 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load (at Full Load)	5S: 5% others: 2%
Line Regulation	±1% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (typ.)
Ripple & Noise (20MHz bandwidth)	AQF240U-5S: 150mV (Vp-p) (max.) AQF240U-12S: 120mV (Vp-p) (max.) AQF240U-15S~48S: 200mV (Vp-p) (max.) AQF240E-12S~24S: 120mV (Vp-p) (max.) AQF240E-28S~48S: 200mV (Vp-p) (max.)
Temperature Coefficient	±0.03% / °C (0~50°C) (max.)
Short Circuit Protection	Latch Off

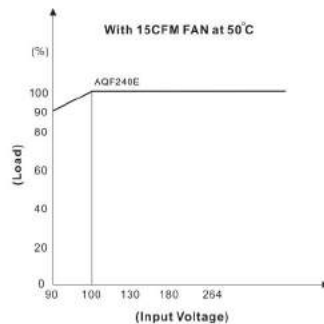
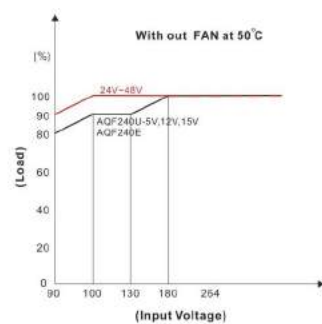
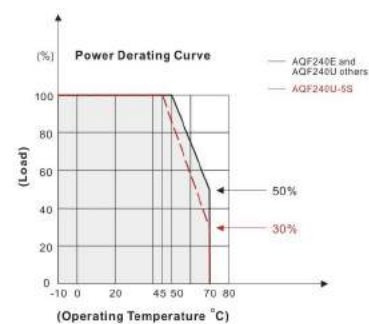
General Specifications

Efficiency (see table list)	87% to 93% (typ.)
Isolation Voltage	4000 VAC or 5656 VDC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-10°C to +70°C (with Derating)
Storage Temperature	-25°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Vibration	10~500Hz, 2G 10min./1cycle, 60min. Each along X, Y, Z axes.

Physical Specifications

Dimension (Tolerance ±0.5 mm)	AQF240U-5S: 150.0 x 106.0 x 37.0 mm 6.0 x 4.18 x 1.46 inches AQF240U others: 150.0 x 106.0 x 35.0 mm AQF240E: 6.0 x 4.18 x 1.38 inches
Weight	AQF240U: 580 g AQF240E: 610 g

Derating



Models

AQF240U Single Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (A) max.	Eff (%)
AQF240U-5S	90~264	5	36	87
AQF240U-12S	90~264	12	20	90
AQF240U-15S	90~264	15	16	90
AQF240U-24S	90~264	24	10	92
AQF240U-28S	90~264	28	8.57	92
AQF240U-32S	90~264	32	7.5	92
AQF240U-36S	90~264	36	6.66	92
AQF240U-48S	90~264	48	5	93

AQF240E Single Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (A) max.	Eff (%)
AQF240E-12S	90~264	12	16.66	90
AQF240E-15S	90~264	15	14.66	90
AQF240E-24S	90~264	24	10	92
AQF240E-28S	90~264	28	8.57	92
AQF240E-32S	90~264	32	7.5	92
AQF240E-36S	90~264	36	6.66	92
AQF240E-48S	90~264	48	5	93

Note:  
5V Output Voltage without UL Approval. ( AQF240U-5S )

AQF240U-5S Standard Type



AQF240U-12S~48S Standard Type

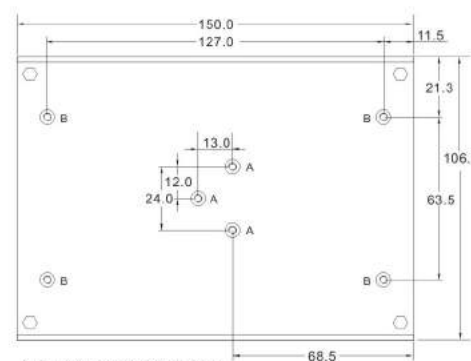
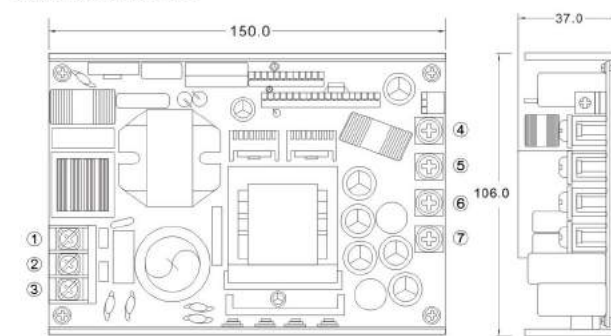


AQF240U-12S~48S A Type



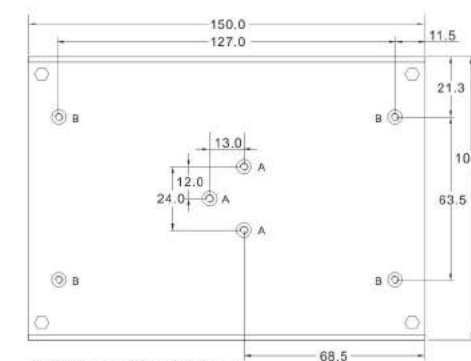
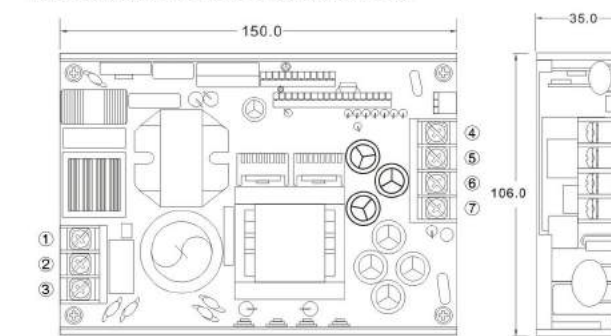
Outline Dimensions & Pin Connections (Top View)

AQF240U-5S Series



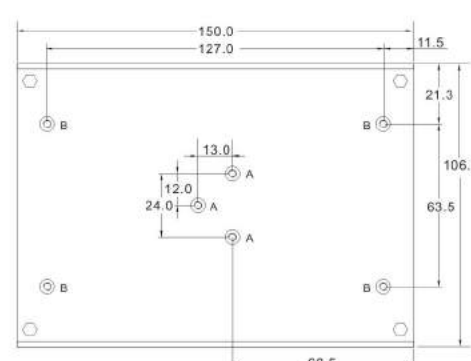
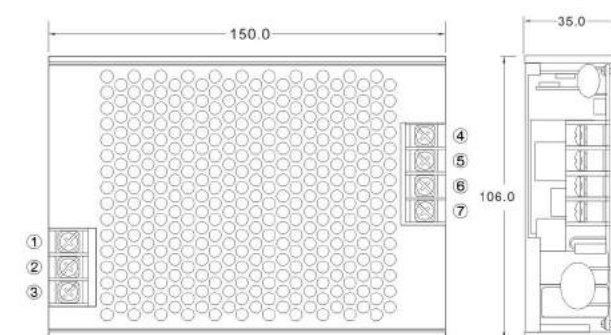
A=For fixture to din rail clip only  
B=For fixture to pcb/chassis only  
A=M3x0.5P  
B=M3x0.5P

AQF240U-12S,15S,24S,28S,32S,48S Series



A=For fixture to din rail clip only  
B=For fixture to pcb/chassis only  
A=M3x0.5P  
B=M3x0.5P

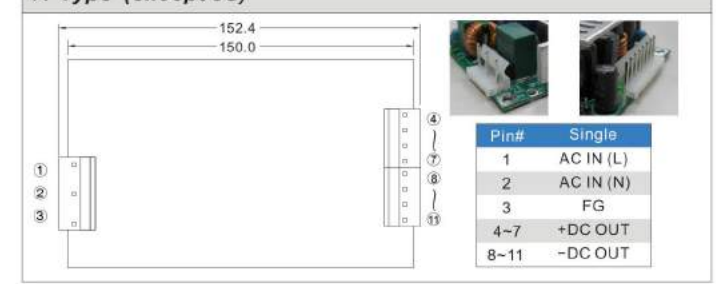
AQF240E Series



A=For fixture to din rail clip only  
B=For fixture to pcb/chassis only  
A=M3x0.5P  
B=M3x0.5P

- Pin# Single
- 1 AC IN (L)
  - 2 AC IN (N)
  - 3 FG
  - 4 +DC OUT
  - 5 +DC OUT
  - 6 -DC OUT
  - 7 -DC OUT

A Type (except 5S)



NEW

240 Watt

MQF240 Series

Medical Switching Power Supply



- ◆ Open Frame and Enclosed Package
- ◆ Universal Input: 90-264 VAC, 47-63 Hz
- ◆ 4000VAC Input to Output 2MOPP Insulation
- ◆ Cooling by Free Air Convection (MQF240O only)
- ◆ 160 Watts and 240 Watt with 10CFM Forced Air (MQF240O only)
- ◆ Built-in 12V / 0.5A Fan Supply (MQF240O only)
- ◆ High Efficiency up to 93.5%
- ◆ With P.F.C. Function >0.9
- ◆ <0.5W No Load Input Power
- ◆ EMI for Both Class I (with FG) and Class II (without FG) Configuration
- ◆ Suitable for BF Application with Appropriate System Consideration
- ◆ UL / IEC / EN 60601 3.1 Edition & UL / IEC / EN 60950 AM2 Safety Approvals
- ◆ 3-Year Warranty

Input Specifications

Voltage Range	90 ~ 264VAC
Frequency	47 ~ 63 Hz

Output Specifications

Output Power	MQF240O:	
	Convection: 160 Watt	(max.)
	10CFM FAN: 240 Watt	(max.)
	MQF240E: 240 Watt	(max.)

Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	0% (at Full Load)
Line Regulation	±1% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (0% to 100% at Full Load) (typ.)
Ripple & Noise	1% Vout (20MHz bandwidth) (max.)
Temperature Coefficient	±0.05% / °C (max.)
Short Circuit Protection	Auto recovery, Hiccup mode

General Specifications

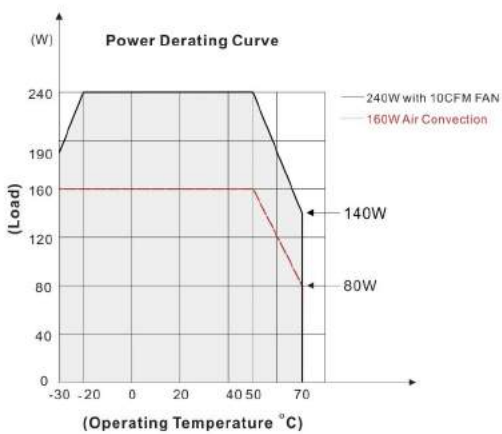
Efficiency (see table list)	MQF240O: 92.5% to 93.5%	(typ.)
	MQF240E: 92% to 93%	(typ.)
Isolation Voltage	4000 VAC or 5656 VDC	(min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output)	(min.)
Operating Temperature	-30°C to +70°C (with Derating)	
Storage Temperature	-30°C to +85°C	
Humidity	20~90% RH	(max.)
Cooling	Free-air Convection	

Physical Specifications

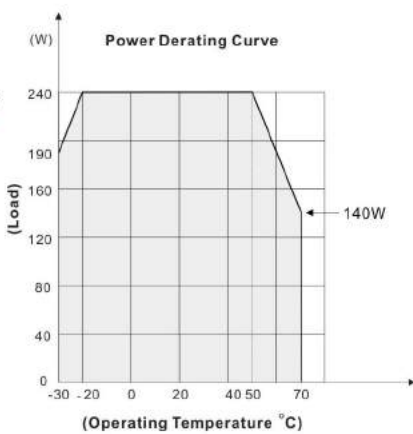
Dimension (Tolerance ±0.5 mm)	MQF240O:	103.9 x 52.0 x 27.6 mm
		4.1 x 2.05 x 1.087 inches
	MQF240E:	104.0 x 62.0 x 49.5 mm
		4.1 x 2.44 x 1.95 inches
Weight	Pending	

Derating

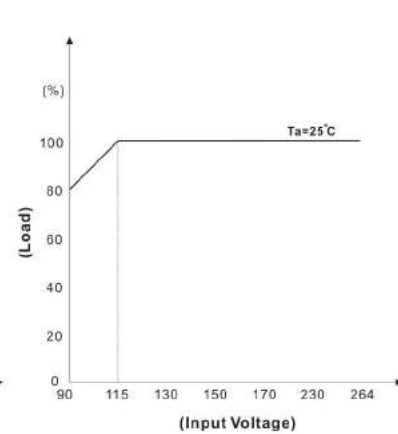
MQF240O Series



MQF240E Series



MQF240O / MQF240E Series



Models

MQF240O Single Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (A) max.		Eff (%)
			Convection	10 CFM FAN	
MQF240O-12S	90~264	12	13.3	20	92.5
MQF240O-24S	90~264	24	6.66	10	93
MQF240O-48S	90~264	48	3.33	5	93.5

MQF240E Single Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (A) max.	Eff (%)
MQF240E-24S	90~264	24	10	92.5
MQF240E-48S	90~264	48	5	93

Standard Type

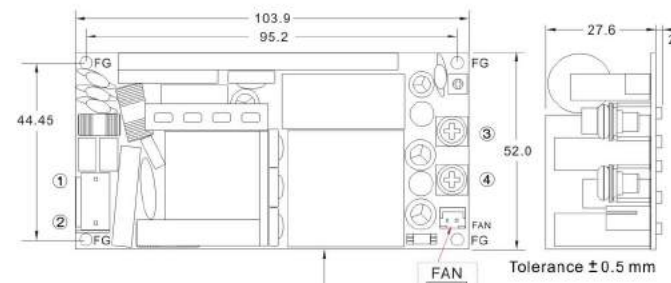


A Type

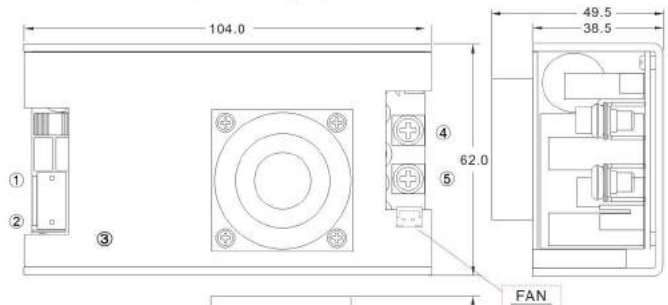


Outline Dimensions & Pin Connections (Top View)

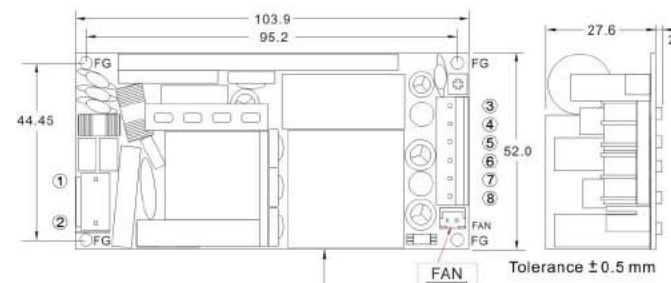
MQF240O Series (Standard Type)



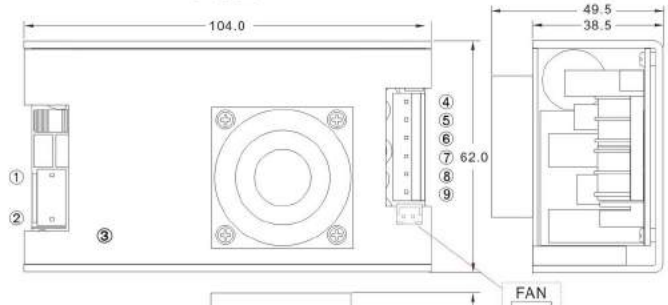
MQF240E Series (Standard Type)



MQF240O Series (A Type)



MQF240E Series (A Type)



360 Watt

AQF360 Series



- ◆ U Bracket and Enclosed Package
- ◆ High Efficiency up to 93%
- ◆ High Density
- ◆ With P.F.C. Function, PF>0.95
- ◆ Cooling by Built-in 12 VDC FAN
- ◆ 240W Convection without FAN
- ◆ Leakage Current <300uA
- ◆ Protections: Over Load / Over Voltage / Over Temperature / Short Circuit All by Auto-recovery
- ◆ CE, CB, UL Approvals
- ◆ 3-Year Warranty

Input Specifications

Voltage Range	90 ~ 264VAC or 120 ~ 370 VDC
Frequency	47 ~ 63 Hz

Output Specifications

Output Power	AQF360U: Convection: 240 Watt (max.) 18CFM FAN: 360 Watt (max.) AQF360E/F: 360 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	1% (at Full Load)
Line Regulation	±1% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (5% to 100% at Full Load) (typ.)
Ripple & Noise (20MHz bandwidth)	AQF360U-12S: 120mV (Vp-p) (max.) AQF360E-12S: 150mV (Vp-p) (max.) AQF360F-12S: 150mV (Vp-p) (max.) others: 200mV (Vp-p) (max.)
Temperature Coefficient	±0.03% / °C (0~50°C) (max.)
Short Circuit Protection	Auto recovery

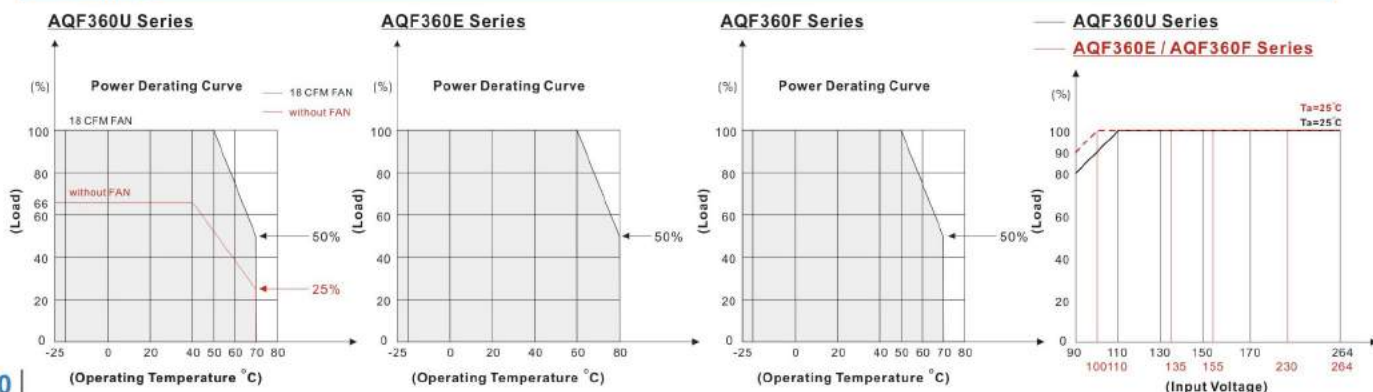
General Specifications

Efficiency (see table list)	AQF360U: 90% to 93% (typ.) AQF360E/F: 89% to 93% (typ.)
Isolation Voltage	3000 VAC or 4242 VDC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-25°C to +70°C (with Derating)
Storage Temperature	-25°C to +85°C
Humidity	95% RH (max.)
Cooling	AQF360U: 240W Convection without FAN AQF360E/F: Cooling by Built-in DC FAN

Physical Specifications

Dimension (Tolerance ±0.5 mm)	AQF360U: 172.7 x 81.3 x 38.0 mm 6.8 x 3.2 x 1.5 inches AQF360E: 172.7 x 81.3 x 53.3 mm 6.8 x 3.2 x 2.1 inches AQF360F: 197.7 x 81.3 x 40.0 mm 7.8 x 3.2 x 1.57 inches
Weight	AQF360U: 668 g AQF360E: 729 g AQF360F: 746 g

Derating



Models

AQF360U Single Output

Model & Ordering No.	I/P Voltage (V.AC)	O/P Voltage (V.DC)	O/P Trim (V.DC)	Output Current (A) max.		Eff (%)
				Convection	18 CFM FAN	
AQF360U-12S	90~264	12	10.8~13.2	20	30	90
AQF360U-24S	90~264	24	21.6~26.4	10	15	92
AQF360U-36S	90~264	36	32.7~39.6	6.66	10	93
AQF360U-48S	90~264	48	44~51	5	7.5	93
AQF360U-54S	90~264	54	51.3~56.7	4.44	6.66	93

AQF360E Single Output

Model & Ordering No.	I/P Voltage (V.AC)	O/P Voltage (V.DC)	Output Current (A) max.	Eff (%)
AQF360E-12S	90~264	12	30	89
AQF360E-24S	90~264	24	15	91
AQF360E-36S	90~264	36	10	92
AQF360E-48S	90~264	48	7.5	93
AQF360E-54S	90~264	54	6.66	93

AQF360F Single Output

Model & Ordering No.	I/P Voltage (V.AC)	O/P Voltage (V.DC)	Output Current (A) max.	Eff (%)
AQF360F-12S	90~264	12	30	89
AQF360F-24S	90~264	24	15	91
AQF360F-36S	90~264	36	10	92
AQF360F-48S	90~264	48	7.5	93
AQF360F-54S	90~264	54	6.66	93

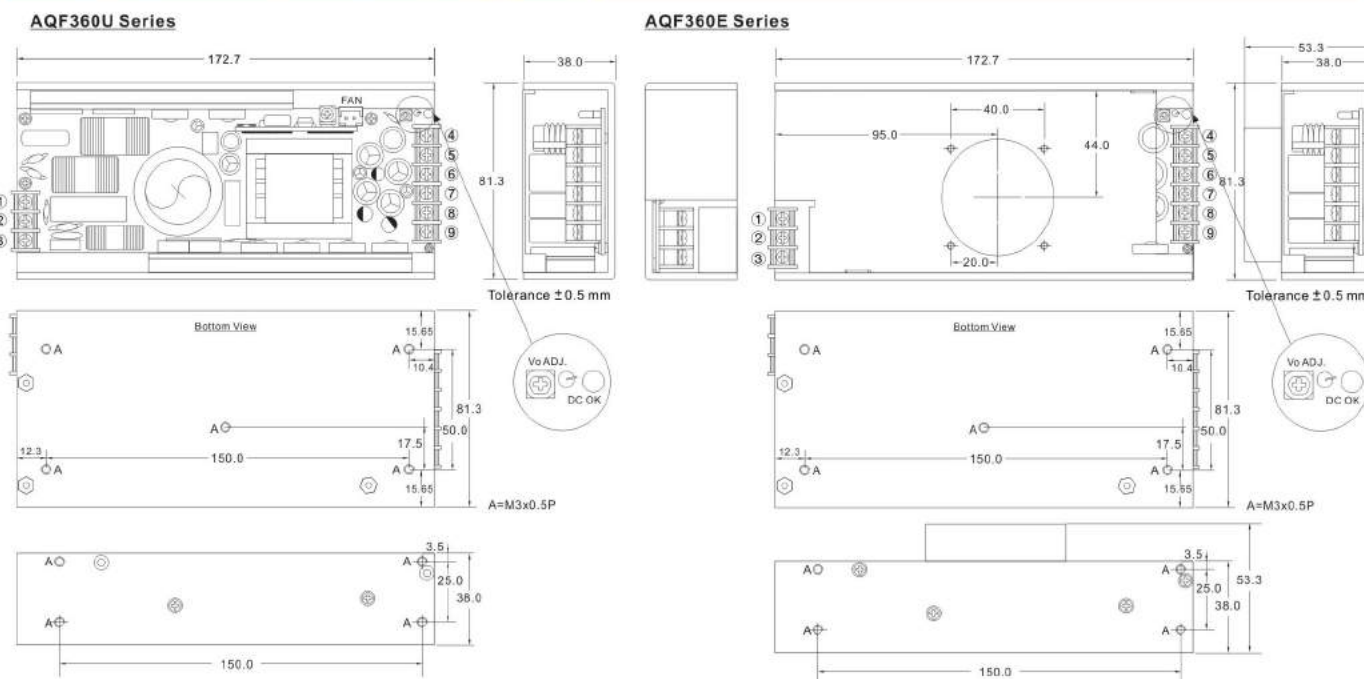
Standard Type



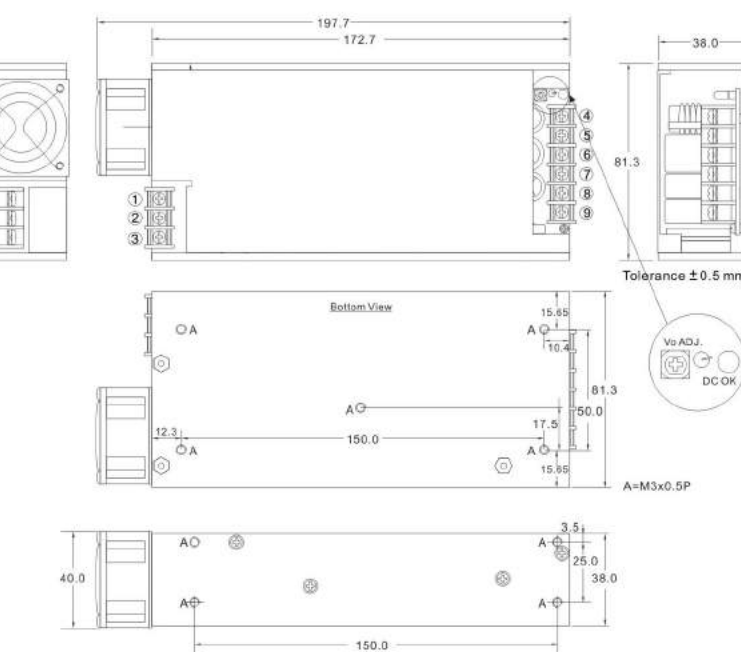
A Type



Outline Dimensions & Pin Connections (Top View)



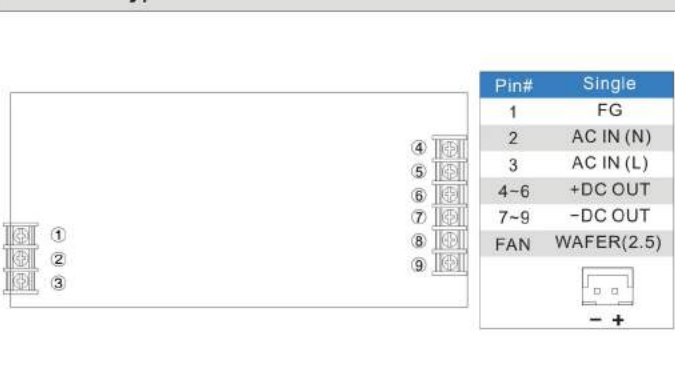
AQF360F Series



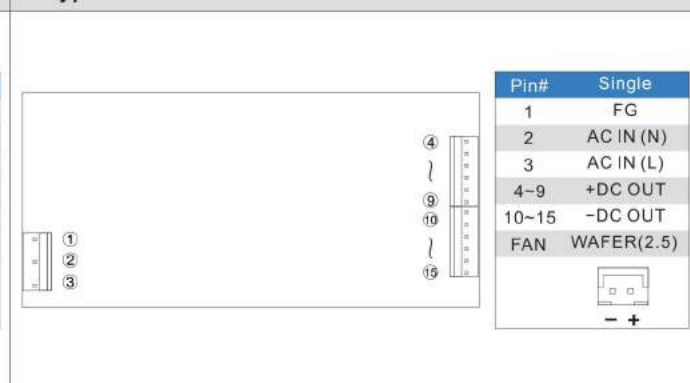
FAN Molex Pin	
Pin#	Single
F1	-DC
F2	+DC

Note: AQF360E and AQF360F Series without F1 & F2 Pin

Standard Type



A Type





480 Watt

AQFV480 Series

(CV Mode)



- ◆ U Bracket and Enclosed Package
- ◆ High Efficiency up to 92%
- ◆ Active P.F.C. Function, PF>0.95
- ◆ 300W Convection without FAN(AQFV480U only)
- ◆ 480W Convection with 18CFM FAN(AQFV480U only)
- ◆ Cooling by Built-in DC FAN(AQFV480E and AQFV480F only)
- ◆ Built-in ON/OFF Remote Control
- ◆ Stand-by 5V @ 0.6A (AQFV480U with 18CFM FAN)
- ◆ Protections: Over Load / Over Voltage / Over Temperature / Short Circuit All by Auto-recovery
- ◆ CE, UL Approvals
- ◆ 3-Year Warranty

Input Specifications

Voltage Range	90 ~ 264VAC or 120 ~ 370 VDC
Frequency	47 ~ 63 Hz

Output Specifications

Output Power	AQFV480U: Convection: 300 Watt (max.) 18CFM FAN: 480 Watt (max.)
Minimum Load	5% (at Full Load)
Line Regulation	±0.5% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (5% to 100% at Full Load) (typ.)
Ripple & Noise	12S: 100mV / 48S: 300mV (Vp-p) (max.) 24S,36S: 200mV (Vp-p) (max.)
Function	5V Stand-by (U:18CFM FAN) Remote Control FAN Control
Temperature Coefficient	±0.03% / °C (0~50°C) (max.)
Short Circuit Protection	Auto recovery (max.)

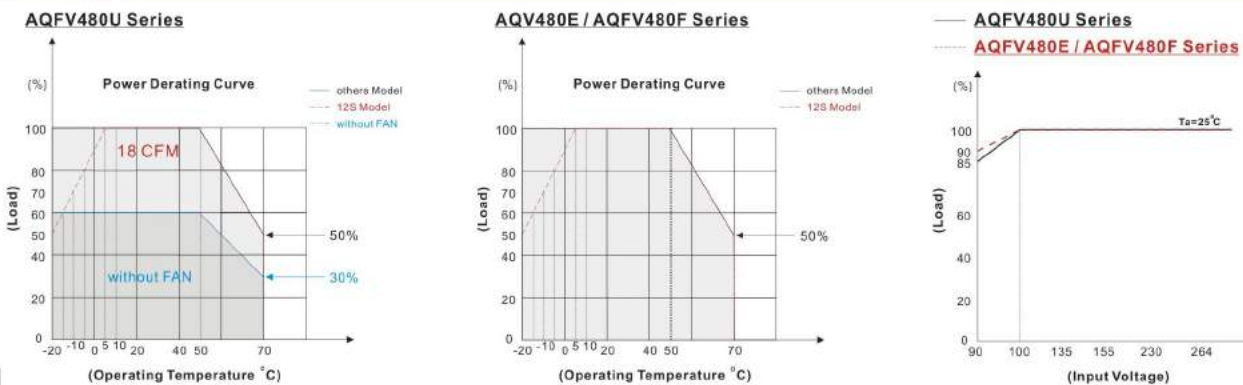
General Specifications

Efficiency (see table list)	AQFV480U Convection: Vin:115(VAC): 88% to 90% (typ.) Vin:230(VAC): 90% to 92% (typ.) 18 CFM FAN: Vin:115(VAC): 85% to 89% (typ.) Vin:230(VAC): 88% to 92% (typ.)
	AQFV480E/F Vin:115(VAC): 85% to 89% (typ.) Vin:230(VAC): 88% to 92% (typ.)
Isolation Voltage	3000 VAC or 4242 VDC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-25°C to +70°C (with Derating)
Storage Temperature	-25°C to +85°C
Humidity	95% RH (max.)

Physical Specifications

Dimension (Tolerance ±0.5 mm)	AQFV480U: 177.8 x 106.5 x 45.0 mm 7.0 x 4.2 x 1.78 inches AQFV480E: 177.8 x 106.5 x 60.3 mm 7.0 x 4.2 x 2.37 inches AQFV480F: 202.8 x 106.5 x 45.0 mm 7.98 x 4.2 x 1.78 inches
Weight	AQFV480U: 780 g / AQFV480E: 950 g AQFV480F: 1050 g

Derating



Models

► AQFV480U Single Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Trim (V.DC)	Output Current (A) max.	Eff (%)	Convection		18 CFM FAN	
						Vin: 115 / 230	Vin: 115 / 230	Vin: 115 / 230	Vin: 115 / 230
AQFV480U-12S	90~264	12	10.8~13.2	23.33	40	88 / 90	85 / 88		
AQFV480U-24S	90~264	24	21.6~26.4	11.66	20	89 / 91	87 / 90		
AQFV480U-36S	90~264	36	32.4~39.6	8.33	13.33	90 / 92	89 / 92		
AQFV480U-48S	90~264	48	43.2~50.4	6.25	10	89 / 91	88 / 91		

► AQFV480E Single Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Trim (V.DC)	Output Current (A) max.	Eff (%)	Convection		18 CFM FAN	
						Vin: 115 / 230	Vin: 115 / 230	Vin: 115 / 230	Vin: 115 / 230
AQFV480E-12S	90~264	12	10.8~13.2	40	85 / 88				
AQFV480E-24S	90~264	24	21.6~26.4	20	87 / 90				
AQFV480E-36S	90~264	36	32.4~39.6	13.33	89 / 92				
AQFV480E-48S	90~264	48	43.2~50.4	10	88 / 91				

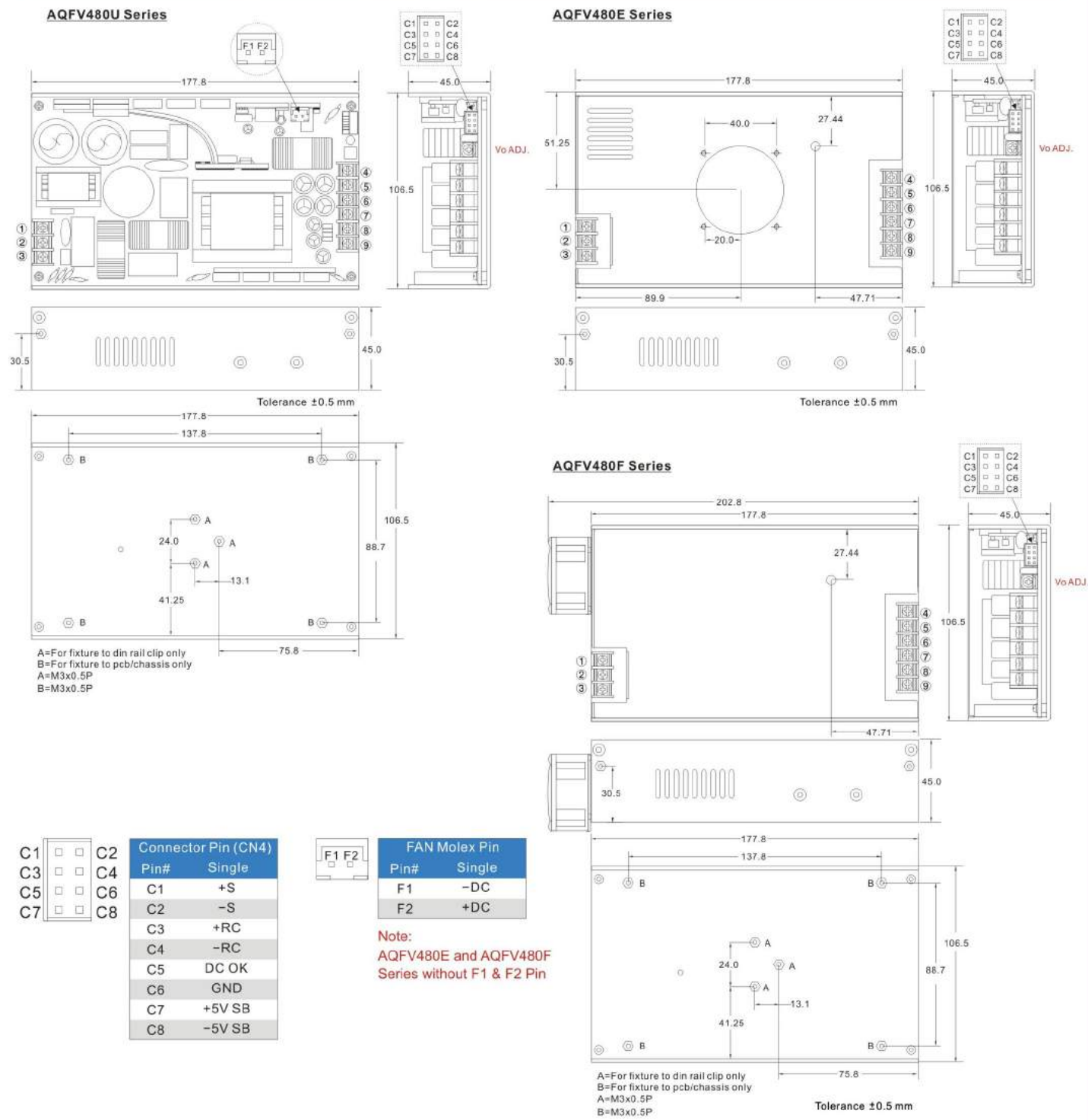
► AQFV480F Single Output

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Trim (V.DC)	Output Current (A) max.	Eff (%)	Convection		18 CFM FAN	
						Vin: 115 / 230	Vin: 115 / 230	Vin: 115 / 230	Vin: 115 / 230
AQFV480F-12S	90~264	12	10.8~13.2	40	85 / 88				
AQFV480F-24S	90~264	24	21.6~26.4	20	87 / 90				
AQFV480F-36S	90~264	36	32.4~39.6	13.33	89 / 92				
AQFV480F-48S	90~264	48	43.2~50.4	10	88 / 91				

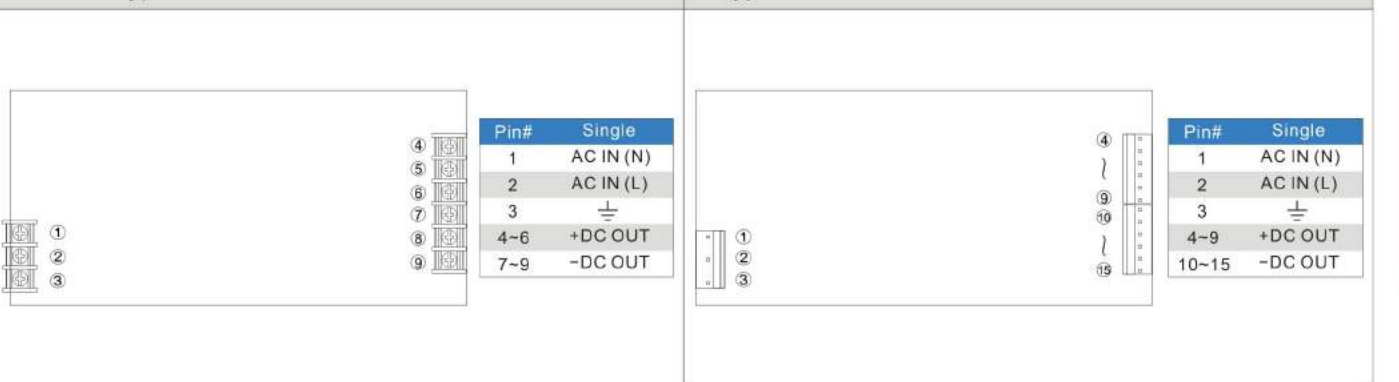
Standard Type A Type



Outline Dimensions & Pin Connections (Top View)



Standard Type A Type



NEW

500 Watt

MQF500 Series

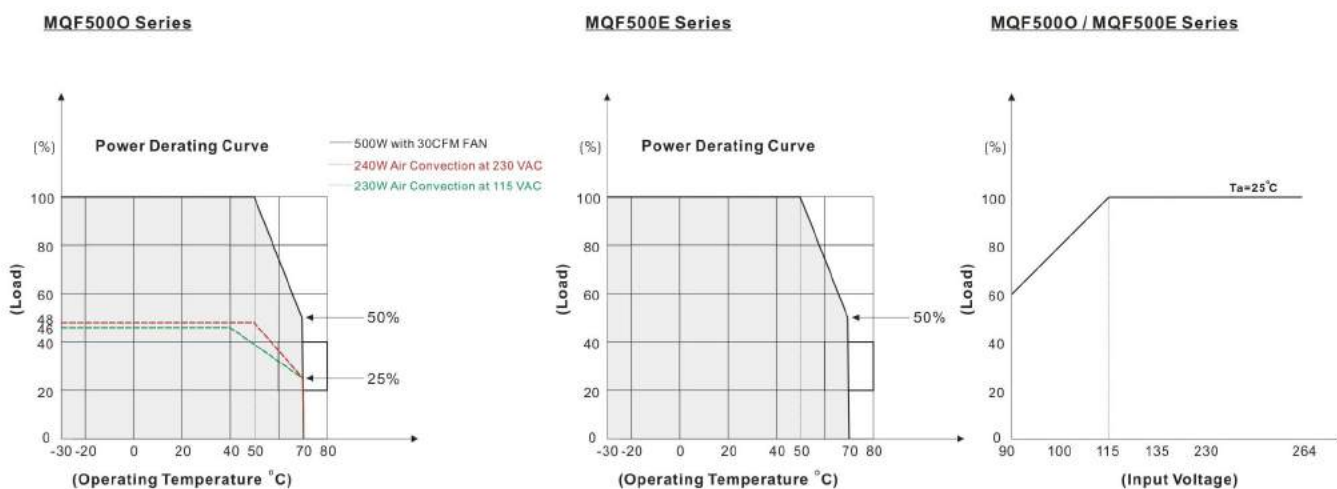
Medical Switching Power Supply



- ◆ Open Frame and Enclosed Package
- ◆ Universal Input: 90-264 VAC, 47-63 Hz
- ◆ Remote ON/OFF Function
- ◆ 240 Watt with Free Air Convection (MQF500O only)
- ◆ 500 Watt with 30CFM FAN (MQF500O only)
- ◆ Built-in 12V/0.3A Auxiliary Output
- ◆ High Efficiency up to 93%
- ◆ With P.F.C. Function >0.94
- ◆ Standby 5V@1A with Fan, @0.4A without Fan (MQF500O)
- ◆ Standby 5V@1A (MQF500E)
- ◆ Suitable for BF Application with Appropriate System Consideration
- ◆ UL / IEC / EN 60601 3.1 Edition & UL / IEC / EN 60950 AM2 Safety Approvals
- ◆ 3-Year Warranty

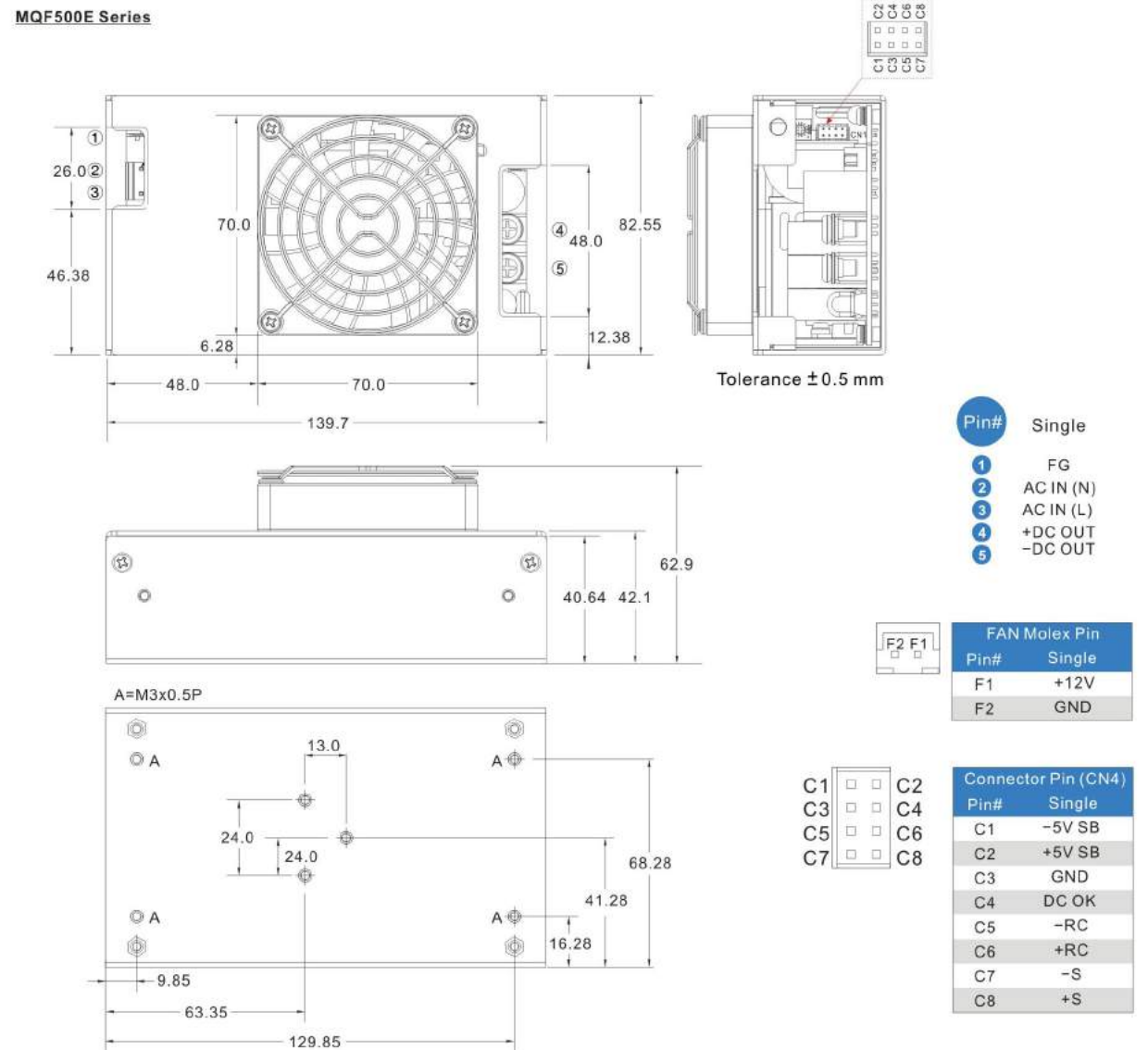
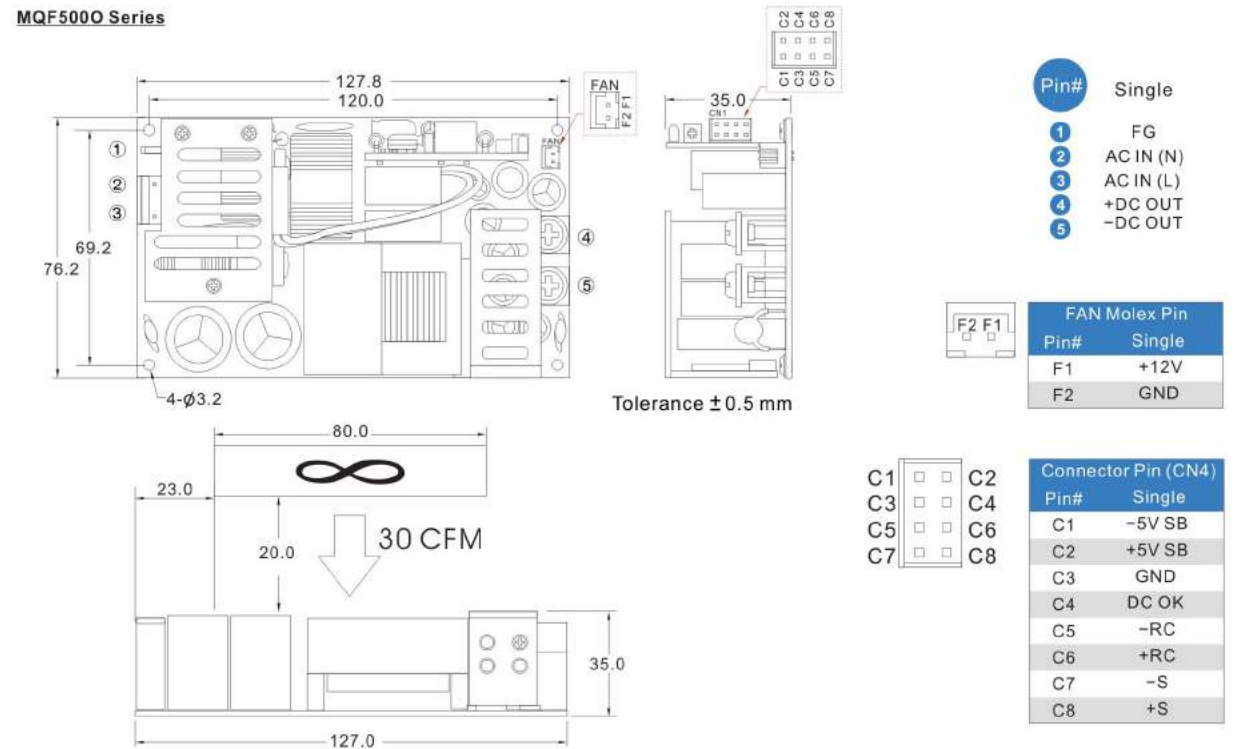
Input Specifications	
Voltage Range	90 ~ 264VAC or 127 ~ 370 VDC
Frequency	47 ~ 63 Hz
Output Specifications	
Output Power	MQF500O: Convection: 230 Watt (115 VAC) (max.) 240 Watt (230 VAC) (max.) 30CFM FAN: 500 Watt (max.) MQF500E: 500 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	3% (at Full Load)
Line Regulation	±0.5% (115-264 VAC) (typ.)
Load Regulation	±1% (10% to 100% at Full Load)
Ripple & Noise (20MHz bandwidth) (at Full Load)	12S: 160mV (Vp-p) (typ.) 24S: 240mV (Vp-p) (typ.) 48S: 480mV (Vp-p) (typ.)
Temperature Coefficient	±0.03% / °C (0~50°C) (max.) ±0.06% / °C (-30~0°C) (max.)
Short Circuit Protection	Auto recovery, Hiccup mode
General Specifications	
Efficiency (see table list)	MQF500O: 90.5% to 93.5% (typ.) MQF500E: 89% to 92% (typ.)
Isolation Voltage	4000 VAC or 5656 VDC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-30°C to +70°C (with Derating)
Storage Temperature	-35°C to +85°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Physical Specifications	
Dimension (Tolerance ±0.5 mm)	MQF500O: 127.8 x 76.2 x 35.0 mm 5.03 x 3.0 x 1.38 inches MQF500E: 139.7 x 82.55 x 62.9 mm 5.5 x 3.25 x 2.48 inches
Weight	MQF500O: 480 g / MQF500E: 690 g

Derating



Models					
MQF500O Single Output					
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (A) max.		Eff (%)
			Convection Vin: 115 / 230	30 CFM FAN	
MQF500O-12S	90~264	12	19.16 / 20	41.5	90.5
MQF500O-24S	90~264	24	9.58 / 10	20.8	92
MQF500O-48S	90~264	48	4.8 / 5	10.41	93
MQF500E Single Output					
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (A) max.		Eff (%)
MQF500E-12S	90~264	12	41.5		89
MQF500E-24S	90~264	24	20.8		91
MQF500E-48S	90~264	48	10.41		92

Outline Dimensions & Pin Connections (Top View)



1.5 Watt

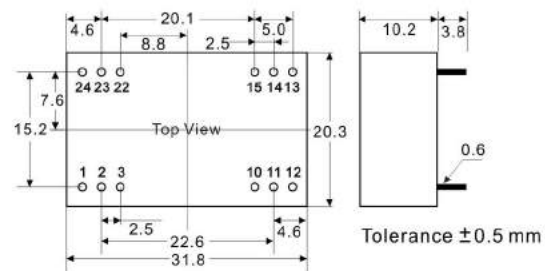
SB1R5 Series



- ◆ Power Module for PCB Mountable
- ◆ Fully Encapsulated Plastic Case
- ◆ Regulated Output
- ◆ Low Ripple and Noise
- ◆ 3-Year Warranty

Input Specifications	
Voltage Range	5V — 4.5~5.5 VDC 12V — 10.8~13.2 VDC 24V — 21.6~26.4 VDC 48V — 43.2~52.8 VDC
Filter	$\pi$ type
Output Specifications	
Output Power	1.5 Watt(max.)
Voltage Accuracy	±3% (Full Load and Nominal Vin)
Line Regulation	±0.3% (LL to HL at Full Load) (typ.)
Load Regulation	±0.5% (10% to 100% at Full Load) (typ.)
Ripple(20MHz bandwidth)	<0.2% Vout +10mV (Vp-p) (max.)
Noise (20MHz bandwidth)	<0.5% Vout +30mV (Vp-p) (max.)
Temperature Coefficient	±0.02% / °C (max.)
Short Circuit Protection	Current limit,Auto-recovery
General Specifications	
Efficiency (see table list)	51% to 65% (typ.)
Frequency	20K Hz (typ.)
Isolation Voltage	500 VDC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-25°C to +70°C (at Full Load)
Storage Temperature	-55°C to +105°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Physical Specifications	
Dimension	31.8 x 20.3 x 10.2 mm
(Tolerance ±0.5 mm)	1.25 x 0.8 x 0.4 inches
Weight	13 g
Case Material	Plastic

Outline Dimensions & Pin Connections



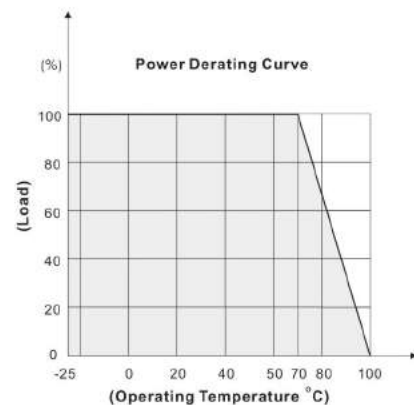
Pin#	Single	Dual
1	+VIN	+VIN
2	NC	-VOUT
3	NO PIN	COMMON
10	-VOUT	COMMON
11	+VOUT	+VOUT
12	-VIN	-VIN
13	-VIN	-VIN
14	+VOUT	+VOUT
15	-VOUT	COMMON
22	NO PIN	COMMON
23	NC	-VOUT
24	+VIN	+VIN

Models				
▶▶ SB1R5 Single Output				
Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
SB1R5-5-5S	4.5~5.5	5	300	60
SB1R5-5-12S	4.5~5.5	12	125	54
SB1R5-5-15S	4.5~5.5	15	100	56
SB1R5-5-24S	4.5~5.5	24	63	58
SB1R5-12-5S	10.8~13.2	5	300	65
SB1R5-12-12S	10.8~13.2	12	125	60
SB1R5-12-15S	10.8~13.2	15	100	62
SB1R5-12-24S	10.8~13.2	24	63	64
SB1R5-24-5S	21.6~26.4	5	300	57
SB1R5-24-12S	21.6~26.4	12	125	55
SB1R5-24-15S	21.6~26.4	15	100	55
SB1R5-24-24S	43.2~52.8	24	63	58
SB1R5-48-5S	43.2~52.8	5	300	53
SB1R5-48-12S	43.2~52.8	12	125	52
SB1R5-48-15S	43.2~52.8	15	100	51
SB1R5-48-24S	43.2~52.8	24	63	54

▶▶ SB1R5 Dual Output				
Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
SB1R5-5-5D	4.5~5.5	±5	±150	57
SB1R5-5-12D	4.5~5.5	±12	±60	59
SB1R5-5-15D	4.5~5.5	±15	±50	61
SB1R5-12-5D	10.8~13.2	±5	±150	60
SB1R5-12-12D	10.8~13.2	±12	±60	61
SB1R5-12-15D	10.8~13.2	±15	±50	65
SB1R5-24-5D	21.6~26.4	±5	±150	54
SB1R5-24-12D	21.6~26.4	±12	±60	54
SB1R5-24-15D	21.6~26.4	±15	±50	56
SB1R5-48-5D	43.2~52.8	±5	±150	52
SB1R5-48-12D	43.2~52.8	±12	±60	54
SB1R5-48-15D	43.2~52.8	±15	±50	54

Derating



5 Watt

ZA05 SERIES

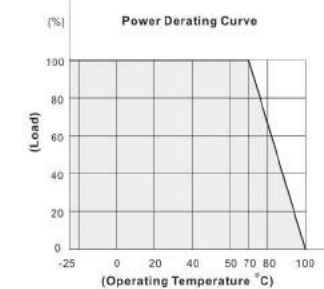
- ◆ Power Module for PCB Mountable
- ◆ Low Cost but High Reliability
- ◆ 4:1 Wide Input Range
- ◆ Regulated Output
- ◆ 4:1 Wide Input Range
- ◆ 3-Year Warranty



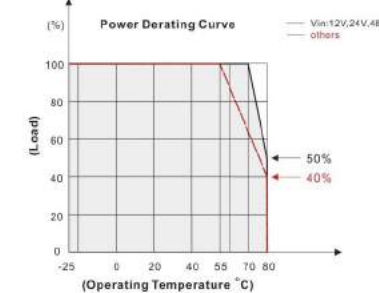
Input Specifications	ZA05	ZC05
Voltage Range	24V — 9~36 VDC 48V — 18~75 VDC	
Filter	$\pi$ type	
Output Specifications		
Output Power	6 Watt (max.)	
Voltage Accuracy	±2% (Full Load and Nominal Vin)	
Line Regulation	±0.5% (LL to HL at Full Load) (typ.)	
Load Regulation	3.3S: ±3% (typ.) (10% to 100% at Full Load) others: ±1% (typ.)	
Ripple(20MHz bandwidth)	<0.5% Vout +50mV (Vp-p) (max.)	
Noise (20MHz bandwidth)	<0.5% Vout +50mV (Vp-p) (max.)	
Temperature Coefficient	±0.02% / °C (max.)	
Short Circuit Protection	Current limit,Auto-recovery	
General Specifications		
Efficiency (see table list)	71% to 83%	72% to 81% (typ.)
Isolation Voltage	1600 VDC	(min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output)	(min.)
Operating Temperature	-25°C to +70°C (at Full Load)	
Storage Temperature	-55°C to +105°C	
Humidity	95% RH	(max.)
Cooling	Free-air Convection	
Physical Specifications		
Dimension	31.8 x 20.3 x 10.2 mm	
(Tolerance ±0.5 mm)	1.25 x 0.8 x 0.4 inches	
Weight	13 g	20 g
Case Material	Five-side shielded Aluminum with Non-Conductive base, Black Anodize	

Derating

ZA05 Series



ZC05 Series



5 Watt

ZC05 SERIES

- ◆ Power Module for PCB Mountable
- ◆ High Efficiency and Reliability
- ◆ 4:1 Wide Input Range
- ◆ Regulated Output
- ◆ Low Ripple and Noise
- ◆ 3-Year Warranty



Models				
▶▶ ZA05 Single Output (4:1 Range)				
Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ZA05-24-3.3S	9~36	3.3	1200	71
ZA05-24-5S	9~36	5	1000	75
ZA05-24-12S	9~36	12	500	82
ZA05-24-15S	9~36	15	400	79
ZA05-24-24S	9~36	24	250	81
ZA05-48-3.3S	18~75	3.3	1200	71
ZA05-48-5S	18~75	5	1000	75
ZA05-48-12S	18~75	12	500	82
ZA05-48-15S	18~75	15	400	82
ZA05-48-24S	18~75	24	250	81

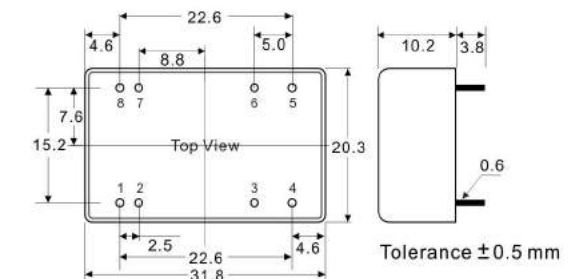
  

▶▶ ZA05 Dual Output (4:1 Range)				
Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ZA05-24-5D	9~36	±5	±500	75
ZA05-24-12D	9~36	±12	±250	78
ZA05-24-15D	9~36	±15	±200	75
ZA05-48-5D	18~75	±5	±500	77
ZA05-48-12D	18~75	±12	±250	83
ZA05-48-15D	18~75	±15	±200	81

▶▶ ZC05 Single Output (4:1 Range)				
Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ZC05-24F-3.3S	9~36	3.3	1520	72
ZC05-24F-5S	9~36	5	1000	75
ZC05-24F-12S	9~36	12	500	81
ZC05-24F-15S	9~36	15	400	79
ZC05-24F-24S	9~36	24	250	80
ZC05-48F-3.3S	18~75	3.3	1520	74
ZAC5-48F-5S	18~75	5	1000	77
ZAC5-48F-12S	18~75	12	500	81
ZAC5-48F-15S	18~75	15	400	81
ZC05-48F-24S	18~75	24	250	81

Outline Dimensions & Pin Connections



Pin#	Single	Dual
1	-VIN	-VIN
2	-VIN	-VIN
3	NC	COMMON
4	NC	-VOUT
5	+VOUT	+VOUT
6	-VOUT	COMMON
7	+VIN	+VIN
8	+VIN	+VIN

5 / 8 Watt

SB05 / SB08 Series

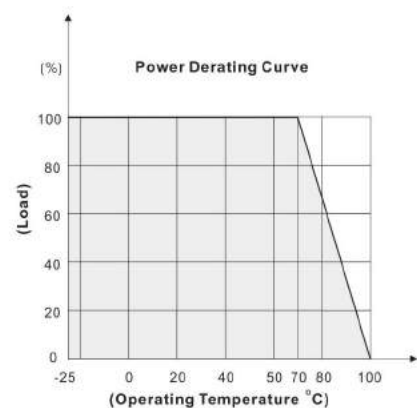


- ◆ Power Module for PCB Mountable
- ◆ SB05: 4:1 Wide Input Range  
SB08: 2:1 & 4:1 Wide Input Range
- ◆ Regulated Output
- ◆ Low Ripple and Noise
- ◆ 3-Year Warranty

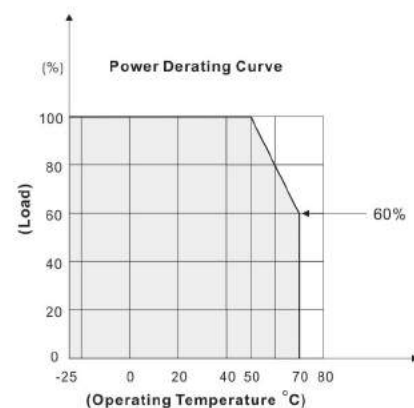
Input Specifications	SB05	SB08
Voltage Range	24V — 9~36 VDC 48V — 18~75 VDC	2:1 Range 12V — 9~18 VDC 24V — 18~36 VDC 48V — 36~75 VDC 4:1 Range 24V — 9~36 VDC 48V — 18~75 VDC
Filter	π type	L-C type
Output Specifications	SB05	SB08
Output Power	5 Watt (max.)	8 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)	
Line Regulation	±0.5% (LL to HL at Full Load) (typ.)	
Load Regulation	3.3S: ±3% / others: ±1% (typ.) (10% to 100% at Full Load)	
Ripple(20MHz bandwidth)	<0.5% Vout +50mV (Vp-p) (max.)	<0.2% Vout +20mV (Vp-p) (max.)
Noise (20MHz bandwidth)	<0.5% Vout +50mV (Vp-p) (max.)	<0.5% Vout +50mV (Vp-p) (max.)
Temperature Coefficient	±0.02% / °C (max.)	
Short Circuit Protection	Current limit, Auto-recovery	
General Specifications	SB05	SB08
Efficiency (see table list)	70% to 83% (typ.)	67% to 80% (typ.)
Isolation Voltage	1600 VDC (Input to Output) (min.)	
Isolation Resistance	10 <sup>9</sup> Ω (min.)	
Operating Temperature	-25°C to +70°C (at Full Load)	
Storage Temperature	-55°C to +105°C	-25°C to +70°C (with Derating)
Humidity	95% RH (max.)	
Cooling	Free-air Convection	
Physical Specifications	SB05	SB08
Dimension	31.8 x 20.3 x 10.2 mm	
(Tolerance ±0.5 mm)	1.25 x 0.8 x 0.4 inches	
Weight	20 g	13 g
Case Material	Five-side shielded Aluminum with Non-Conductive base, Black Anodize	Six-side shielded Aluminum with Non-Conductive base, Black Anodize

Derating

SB05 Series



SB08 Series



Models

►► SB05 Single Output (4:1 Range)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
SB05-24-3.3S	9~36	3.3	1200	71
SB05-24-5S	9~36	5	1000	75
SB05-24-12S	9~36	12	500	81
SB05-24-15S	9~36	15	400	80
SB05-24-24S	9~36	24	250	80
(at 12V.DC)				
SB05-48-3.3S	18~75	3.3	1200	70
SB05-48-5S	18~75	5	1000	75
SB05-48-12S	18~75	12	500	80
SB05-48-15S	18~75	15	400	80
SB05-48-24S	18~75	24	250	80

►► SB05 Dual Output (4:1 Range)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
SB05-24-5D	9~36	±5	±500	75
SB05-24-12D	9~36	±12	±250	78
SB05-24-15D	9~36	±15	±200	76
(at 12V.DC)				
SB05-48-5D	18~75	±5	±500	77
SB05-48-1DS	18~75	±12	±250	83
SB05-48-1DS	18~75	±15	±200	81

►► SB08 Single Output (2:1 Range)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
SB08-12-3.3S	9~18	3.3	2000	67
SB08-12-5S	9~18	5	1500	69
SB08-12-12S	9~18	12	666	76
SB08-12-15S	9~18	15	533	75
SB08-12-24S	9~18	24	333	68
SB08-24-3.3S	18~36	3.3	2000	72
SB08-24-5S	18~36	5	1500	73
SB08-24-12S	18~36	12	666	80
SB08-24-15S	18~36	15	533	80
SB08-24-24S	18~36	24	333	77
SB08-48-3.3S	36~75	3.3	2000	73
SB08-48-5S	36~75	5	1500	74
SB08-48-12S	36~75	12	666	80
SB08-48-15S	36~75	15	533	80
SB08-48-24S	36~75	24	333	79

►► SB08 Dual Output (2:1 Range)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
SB08-12-5D	9~18	±5	±800	70
SB08-12-12D	9~18	±12	±333	75
SB08-12-15D	9~18	±15	±267	74
SB08-24-5D	18~36	±5	±800	73
SB08-24-12D	18~36	±12	±333	78
SB08-24-15D	18~36	±15	±267	74
SB08-48-5D	36~75	±5	±800	73
SB08-48-12D	36~75	±12	±333	77
SB08-48-15D	36~75	±15	±267	74

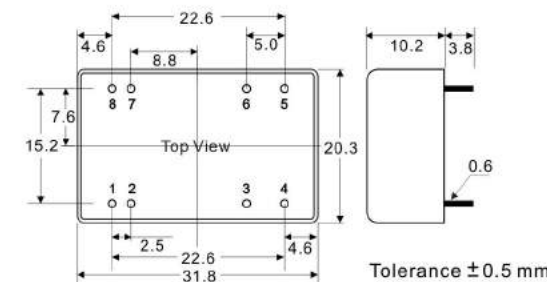
►► SB08 Single Output (4:1 Range)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
SB08-24F-5S	9~36	5	1500	66
SB08-24F-12S	9~36	12	666	72
SB08-24F-15S	9~36	15	533	71
SB08-48F-5S	18~75	5	1500	73

►► SB08 Dual Output (4:1 Range)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
SB08-24F-15D	9~36	±15	±267	74

Outline Dimensions & Pin Connections



Pin#	Single	Dual
1	-VIN	-VIN
2	-VIN	-VIN
3	NC	COMMON
4	NC	-VOUT
5	+VOUT	+VOUT
6	-VOUT	COMMON
7	+VIN	+VIN
8	+VIN	+VIN

8 / 10 Watt

SH08 / SH10 Series



Input Specifications	SH08	SH10
Voltage Range	24V — 9~36 VDC 48V — 18~75 VDC	12V — 9~18 VDC 24V — 18~36 VDC 48V — 36~75 VDC
Filter	π type	
Output Specifications	SH08	SH10
Output Power	8 Watt (max.)	10 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)	
Minimum Load	0% (at Full Load)	
Line Regulation	±0.5% (LL to HL at Full Load) (typ.)	
Load Regulation	±1% (10% to 100% at Full Load)	3.3S: ±3% (typ.) others: ±1% (typ.)
Ripple (20MHz bandwidth) (Vp-p) (max.)	50mV	3.3S:50mV 5S~24S:1% Vout
Noise (20MHz bandwidth) (Vp-p) (max.)	Single:100mV Dual:<0.5% Vout +50mV	3.3S:50mV 5S~24S:1% Vout
Temperature Coefficient	±0.02% / °C (max.)	
Short Circuit Protection	Current limit,Auto-recovery	
General Specifications	SH08	SH10
Efficiency (see table list)	79% to 85%	82% to 87% (typ.)
Frequency	300K Hz	(typ.)
Isolation Voltage	1600 VDC	(min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output)	(min.)
Operating Temperature	-25°C to +60°C (at Full Load)	
Storage Temperature	-55°C to +105°C	
Humidity	95% RH (max.)	
Cooling	Free-air Convection	
Physical Specifications	SH08	SH10
Dimension (Tolerance ±0.5 mm)	31.8 x 20.3 x 11.2 mm 1.25 x 0.8 x 0.4 inches	
Weight	20 g	
Case Material	Nickel-Coated Copper with Non-Conductive Base, Six-side shielded	



- ◆ Power Module for PCB Mountable
- ◆ SH08: 4:1 Wide Input Range  
SH10: 2:1 Input Range
- ◆ High Efficiency and Reliability
- ◆ Regulated Output
- ◆ Low Ripple and Noise
- ◆ 3-Year Warranty

Models

►► SH08 Single Output (4:1 Range)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
SH08-24F-3.3S	9~36	3.3	2200	79
SH08-24F-5S	9~36	5	1600	82
SH08-24F-12S	9~36	12	666	82
SH08-24F-15S	9~36	15	533	81
SH08-24F-24S	9~36	24	333	81
SH08-48F-3.3S	18~75	3.3	2200	80
SH08-48F-5S	18~75	5	1600	84
SH08-48F-12S	18~75	12	666	84
SH08-48F-15S	18~75	15	533	83
SH08-48F-24S	18~75	24	333	83

►► SB08 Dual Output (4:1 Range)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
SB08-24F-5D	9~36	±5	±800	82
SB08-24F-12D	9~36	±12	±333	85
SB08-24F-15D	9~36	±15	±267	85
SB08-48F-5D	18~75	±5	±800	82
SB08-48F-12D	18~75	±12	±333	85
SB08-48F-15D	18~75	±15	±267	85

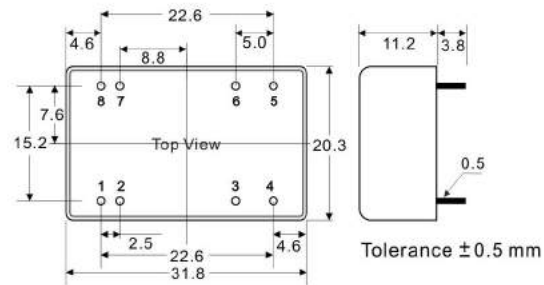
►► SH10 Single Output (2:1 Range)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
SH10-12-3.3S	9~18	3.3	2500	82
SH10-12-5S	9~18	5	2000	83
SH10-12-12S	9~18	12	830	86
SH10-12-15S	9~18	15	670	86
SH10-12-24S	9~18	24	416	86
SH10-24-3.3S	18~36	3.3	2500	82
SH10-24-5S	18~36	5	2000	85
SH10-24-12S	18~36	12	830	86
SH10-24-15S	18~36	15	670	86
SH10-24-24S	18~36	24	416	86
SH10-48-3.3S	36~75	3.3	2500	82
SH10-48-5S	36~75	5	2000	85
SH10-48-12S	36~75	12	830	86
SH10-48-15S	36~75	15	670	86
SH10-48-24S	36~75	24	416	86

►► SH10 Dual Output (2:1 Range)

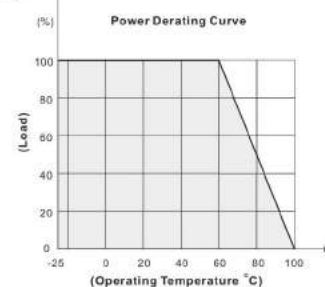
Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
SH10-12-5D	9~18	±5	±1000	83
SH10-12-12D	9~18	±12	±416	86
SH10-12-15D	9~18	±15	±333	86
SH10-24-5D	18~36	±5	±1000	83
SH10-24-12D	18~36	±12	±416	87
SH10-24-15D	18~36	±15	±333	86
SH10-48-5D	36~75	±5	±1000	82
SH10-48-12D	36~75	±12	±416	87
SH10-48-15D	36~75	±15	±333	86

Outline Dimensions & Pin Connections



Pin#	1	2	3	4	5	6	7	8
Single	-VIN	-VIN	NC	NC	+VOUT	-VOUT	+VIN	+VIN
Dual	-VIN	-VIN	COMMON	-VOUT+VOUT	COMMON	+VIN	+VIN	

Derating



15 / 20 Watt

SW15 / SW20 Series



- ◆ Power Module for PCB Mountable
- ◆ The Smallest Dimension in the Market
- ◆ High Efficiency and Reliability
- ◆ 2:1 Input Range
- ◆ Regulated Output
- ◆ Low Ripple and Noise
- ◆ Remote ON/OFF Control
- ◆ 3-Year Warranty

Models

►► SW15 Single Output (2:1 Range)

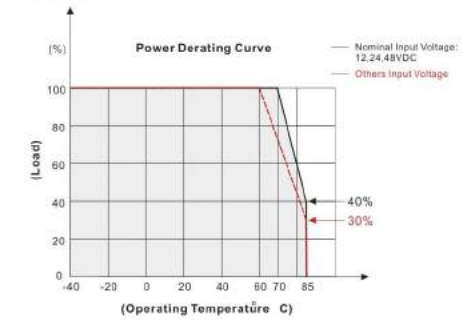
Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
SW15-12-3.3S	9~18	3.3	3500	85
SW15-12-5S	9~18	5	3000	89
SW15-12-12S	9~18	12	1250	88
SW15-12-15S	9~18	15	1000	87
SW15-24-3.3S	18~36	3.3	3500	86
SW15-24-5S	18~36	5	3000	89
SW15-24-12S	18~36	12	1250	89
SW15-24-15S	18~36	15	1000	88
SW15-48-3.3S	36~75	3.3	3500	84
SW15-48-5S	36~75	5	3000	88
SW15-48-12S	36~75	12	1250	88
SW15-48-15S	36~75	15	1000	87

►► SW20 Single Output (2:1 Range)

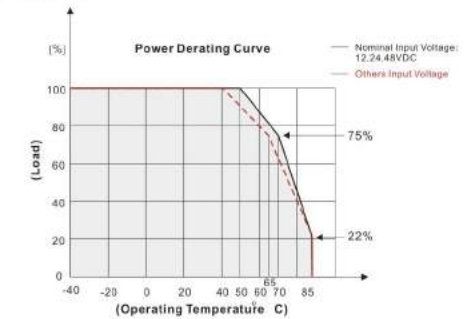
Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
SW20-12-3.3S	9~18	3.3	4500	85
SW20-12-5S	9~18	5	4000	89
SW20-12-12S	9~18	12	1660	88
SW20-12-15S	9~18	15	1330	87
SW20-24-3.3S	18~36	3.3	4500	86
SW20-24-5S	18~36	5	4000	89
SW20-24-12S	18~36	12	1660	89
SW20-24-15S	18~36	15	1330	88
SW20-48-3.3S	36~75	3.3	4500	84
SW20-48-5S	36~75	5	4000	88
SW20-48-12S	36~75	12	1660	89
SW20-48-15S	36~75	15	1330	88

Derating

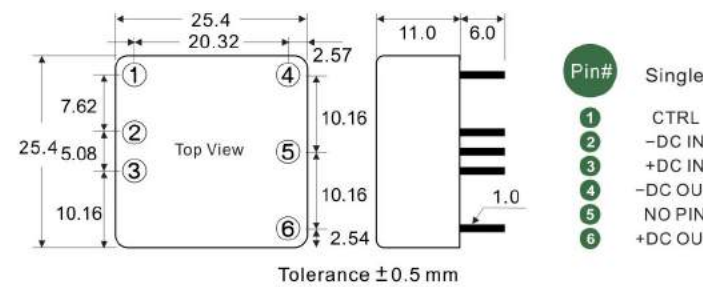
SW15 Series



SW20 Series



Outline Dimensions & Pin Connections



Pin#	1	2	3	4	5	6
Single	CTRL	-DC IN	+DC IN	-DC OUT	NO PIN	+DC OUT

DC-DC Converter

10 / 15 / 20 / 30 Watt

ST10/15/20/30 Series



ST10/15/20



ST30

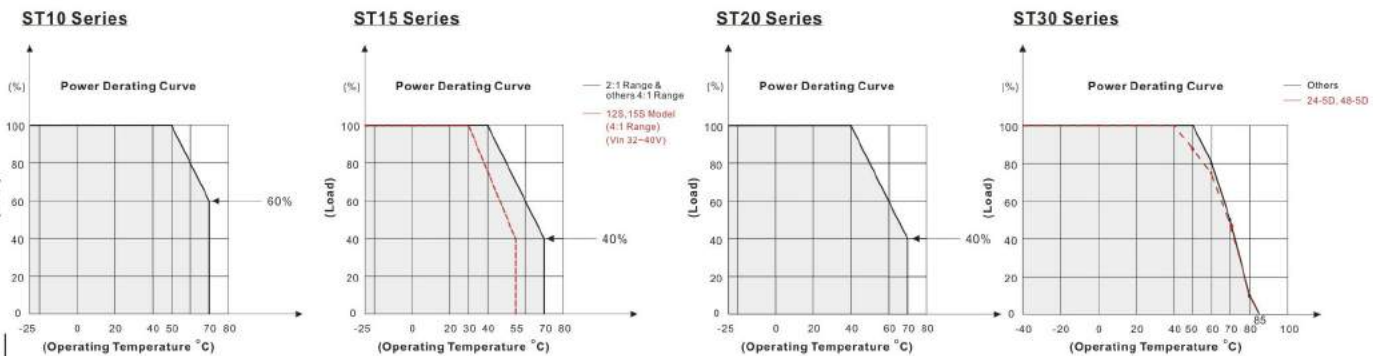
- ◆ Power Module for PCB Mountable
- ◆ ST10,ST15: 2:1 & 4:1 Wide Input Range  
ST20,ST30: 2:1 Input Range
- ◆ Regulated Output
- ◆ Low Ripple and Noise
- ◆ Remote ON/OFF Control (Optional for ST10 / ST15 / ST20)
- ◆ CE, UL Approvals (ST10,ST15,ST20)
- ◆ 3-Year Warranty

Input Specifications	ST10	ST15	ST20	ST30
Voltage Range	2:1 Range 12V — 9~18 VDC 24V — 18~36 VDC 48V — 36~75 VDC 4:1 Range 24V — 10~40 VDC 48V — 18~75 VDC		2:1 Range 24V — 18~36 VDC 48V — 36~75 VDC	
Filter	π type			
Output Specifications	ST10	ST15	ST20	ST30
Output Power	10 Watt (max.)	15 Watt (max.)	20 Watt (max.)	30 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)			
Line Regulation	±0.5% (LL to HL at Full Load) (typ.)			
Load Regulation	±2% (10% to 100% at Full Load) (typ.)			
Ripple (20MHz bandwidth)	<0.2% Vout +40mV (Vp-p) (max.)		110mV (Vp-p) (max.)	2.5S,3.3S,5S:50mV (Vp-p)(max.) 5D:60mV (Vp-p)(max.) others:<0.2% Vout +40mV(max.)
Noise (20MHz bandwidth)	<0.5% Vout +50mV (Vp-p) (max.)		200mV (Vp-p) (max.)	2.5S,3.3S,5S:100mV (Vp-p)(max.) 5D:1200mV (Vp-p)(max.) others:<0.5% Vout +50mV(max.)
Temperature Coefficient	±0.02% / °C (max.)			
Short Circuit Protection	Current limit,Auto-recovery			
General Specifications	ST10	ST15	ST20	ST30
Efficiency (see table list)	67% to 84% (typ.)	70% to 87% (typ.)	83% to 87% (typ.)	84% to 90% (typ.)
Frequency	300K Hz (typ.)		400K Hz (typ.)	
Isolation Voltage	1600 VDC (Input to Output) (min.)			
Isolation Resistance	10 <sup>9</sup> Ω (min.)			
Operating Temperature	-25°C to +70°C (with Derating)			-40°C to +85°C (with Derating)
Storage Temperature	-55°C to +105°C			
Humidity	95% RH (max.)			
Cooling	Free-air Convection			
Physical Specifications	ST10	ST15	ST20	ST30
Dimension (Tolerance ±0.5 mm)	50.1 x 25.4 x 10.8 mm 1.97 x 1.0 x 0.425 inches		50.8 x 25.4 x 11.0 mm 2.0 x 1.0 x 0.433 inches	
Weight	32 g		33 g	
Case Material	Six-side shielded Aluminum with Non-Conductive base, Black Anodize			
Safety	ST10	ST15	ST20	ST30

Application Note: Remote On/ Off

Control Pin is NOT available for standard ST10/ST15/ST20 models Please add suffix -R for models with Control Pin  
Ex: ST15-24-12S R

Derating



Models

ST10 Single Output (2:1 Range)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ST10-12-3.3S	9~18	3.3	2000	74
ST10-12-5S	9~18	5	2000	80
ST10-12-12S	9~18	12	830	81
ST10-12-15S	9~18	15	670	82
ST10-12-24S	9~18	24	420	81
ST10-24-3.3S	18~36	3.3	2000	74
ST10-24-5S	18~36	5	2000	81
ST10-24-12S	18~36	12	830	84
ST10-24-15S	18~36	15	670	85
ST10-24-24S	18~36	24	420	84
ST10-48-3.3S	36~75	3.3	2000	76
ST10-48-5S	36~75	5	2000	81
ST10-48-12S	36~75	12	830	84
ST10-48-15S	36~75	15	670	84
ST10-48-24S	36~75	24	420	84

ST10 Single Output (4:1 Range)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ST10-24F-3.3S	10~40	3.3	2000	67
ST10-24F-5S	10~40	5	2000	75
ST10-24F-12S	10~40	12	830	75
ST10-24F-15S	10~40	15	670	75
ST10-48F-3.3S	18~75	3.3	2000	66
ST10-48F-5S	18~75	5	2000	75
ST10-48F-12S	18~75	12	830	77
ST10-48F-15S	18~75	15	670	75

ST10 Dual Output (4:1 Range)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ST10-24F-5D	10~40	±5	±1000	75
ST10-24F-12D	10~40	±12	±415	75
ST10-24F-15D	10~40	±15	±333	75
ST10-48F-5D	18~75	±5	±1000	75
ST10-48F-12D	18~75	±12	±415	77
ST10-48F-15D	18~75	±15	±333	77

ST15 Single Output (2:1 Range)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ST15-12-3.3S	9~18	3.3	3000	77
ST15-12-5S	9~18	5	3000	80
ST15-12-12S	9~18	12	1250	82
ST15-12-15S	9~18	15	1000	84
ST15-12-24S	9~18	24	625	84
ST15-24-3.3S	18~36	3.3	3000	77
ST15-24-5S	18~36	5	3000	82
ST15-24-12S	18~36	12	1250	85
ST15-24-15S	18~36	15	1000	86
ST15-24-24S	18~36	24	625	87
ST15-48-3.3S	36~75	3.3	3000	79
ST15-48-5S	36~75	5	3000	83
ST15-48-12S	36~75	12	1250	86
ST15-48-15S	36~75	15	1000	87
ST15-48-24S	36~75	24	625	87

ST15 Single Output (4:1 Range)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ST15-24F-3.3S	10~40	3.3	3000	70
ST15-24F-5S	10~40	5	3000	76
ST15-24F-12S	10~40	12	1250	77
ST15-24F-15S	10~40	15	1000	75
ST15-48F-3.3S	18~75	3.3	3000	71
ST15-48F-5S	18~75	5	3000	78
ST15-48F-12S	18~75	12	1250	79
ST15-48F-15S	18~75	15	1000	79

ST15 Dual Output (4:1 Range)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ST15-24F-5D	10~40	±5	±1500	78
ST15-24F-12D	10~40	±12	±625	79
ST15-24F-15D	10~40	±15	±500	79
ST15-48F-5D	18~75	±5	±1500	78
ST15-48F-12D	18~75	±12	±625	79
ST15-48F-15D	18~75	±15	±500	79

ST20 Single Output (2:1 Range)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ST20-24-2.5S	18~36	2.5	4000	83
ST20-24-3.3S	18~36	3.3	4000	86
ST20-24-5S	18~36	5	4000	87
ST20-48-2.5S	36~75	2.5	4000	83
ST20-48-3.3S	36~75	3.3	4000	86
ST20-48-5S	36~75	5	4000	87

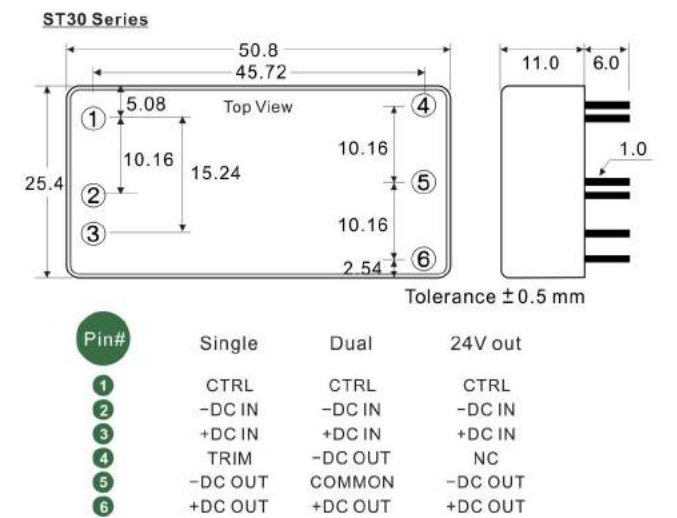
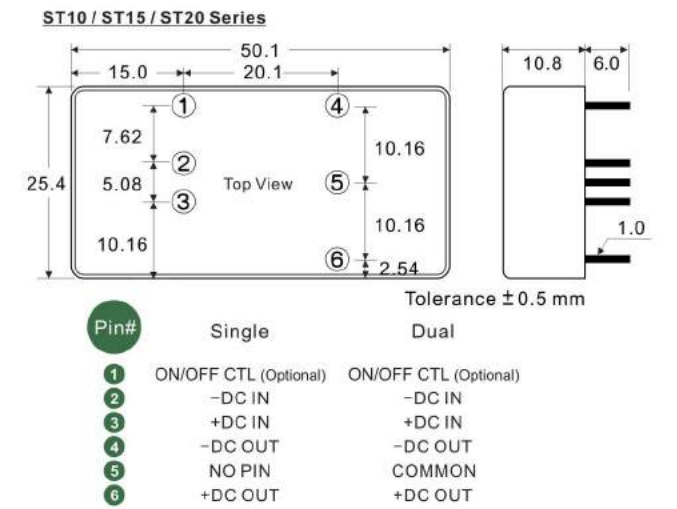
ST30 Single Output (2:1 Range)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ST30-24-2.5S	18~36	2.5	6000	84
ST30-24-3.3S	18~36	3.3	6000	87
ST30-24-5S	18~36	5	6000	90
ST30-24-12S	18~36	12	2500	88
ST30-24-15S	18~36	15	2000	88
ST30-24-24S	18~36	24	1250	88
ST30-48-2.5S	36~75	2.5	6000	85
ST30-48-3.3S	36~75	3.3	6000	88
ST30-48-5S	36~75	5	6000	90
ST30-48-12S	36~75	12	2500	88
ST30-48-15S	36~75	15	2000	88
ST30-48-24S	36~75	24	1250	88

ST30 Dual Output (2:1 Range)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ST30-24-5D	18~36	±5	±2400	85
ST30-24-12D	18~36	±12	±1250	88
ST30-24-15D	18~36	±15	±1000	88
ST30-48-5D	36~75	±5	±2400	85
ST30-48-12D	36~75	±12	±1250	88
ST30-48-15D	36~75	±15	±1000	88

Outline Dimensions & Pin Connections



NEW

60 Watt

ST60 Series



- ◆ Power Module for PCB Mountable
- ◆ 4:1 Wide Input Range
- ◆ Smaller Size
- ◆ Regulated Output
- ◆ High Efficiency
- ◆ Remote ON/OFF Control
- ◆ Operating Temperature: -40°C...+80°C (with derating)
- ◆ CE Approvals
- ◆ 3-Year Warranty

Models

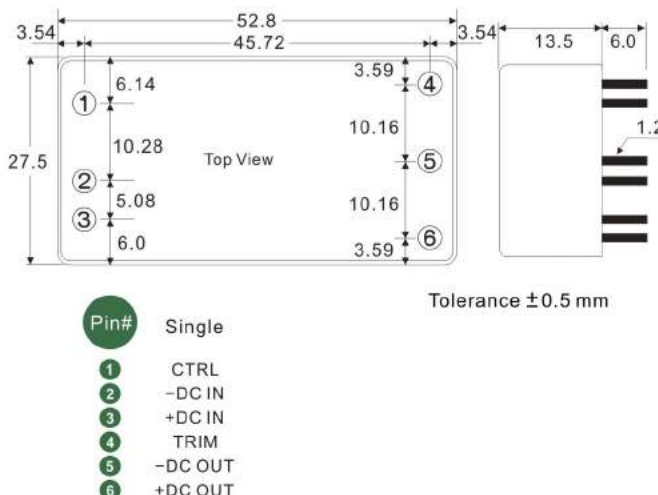
ST60 Single Output (without Heatsink)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ST60-48-12S	18~72	12	5000	91
ST60-48-15S	18~72	15	3700	90
ST60-48-24S	18~72	24	2350	90

ST60 Single Output (with Heatsink)

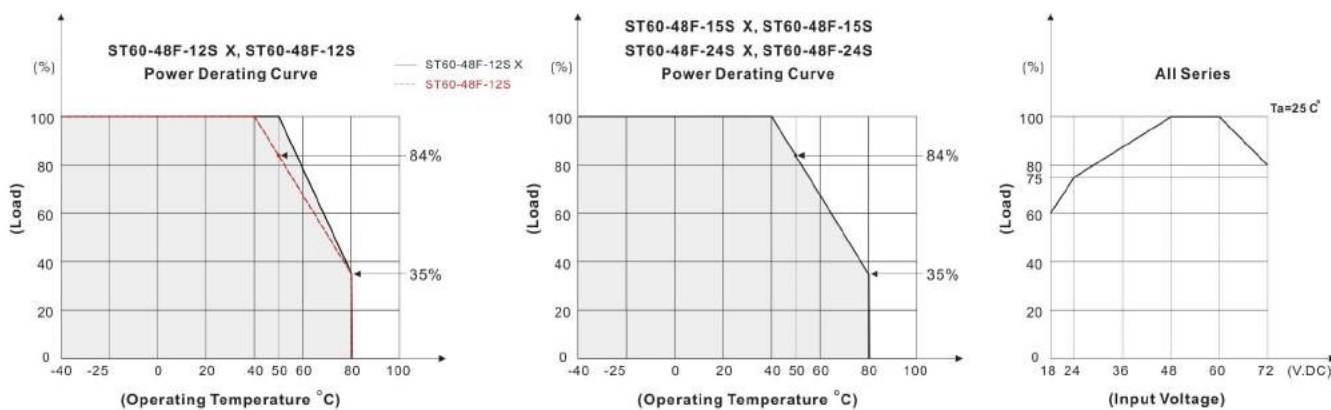
Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ST60-48-12S X	18~72	12	5000	91
ST60-48-15S X	18~72	15	4000	90
ST60-48-24S X	18~72	24	2500	90

Outline Dimensions & Pin Connections



Input Specifications	
Voltage Range	48V — 18~72 VDC
Remote ON/OFF Specifications	
DC-DC ON	Open
DC-DC OFF	When -DC IN and ON/OFF CTL is Short
Output Specifications	
Output Power	60 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	0% (at Full Load)
Line Regulation	±0.5% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (10% to 100% at Full Load) (typ.)
Ripple & Noise (20MHz bandwidth)	12S: 150mV (max.) others: 1% Vout (max.)
Temperature Coefficient	±0.05% / °C (max.)
Short Circuit Protection	Auto-recovery
General Specifications	
Efficiency (see table list)	90% to 91% (typ.)
Isolation Voltage	1600 VDC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-40°C to +80°C (with Derating)
Storage Temperature	-45°C to +100°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Physical Specifications	
Dimension (Tolerance ±0.5 mm)	52.8 x 27.5 x 13.5 mm 2.08 x 1.08 x 0.53 inches
Weight	Pending
Case Material	Six-side shielded Aluminum with Non-Conductive base, Black Anodize

Derating



15 Watt

ZB15 Series



- ◆ Power Module for PCB Mountable
- ◆ Low Cost and High Reliability
- ◆ 2:1 & 4:1 Wide Input Range
- ◆ Remote ON/OFF Control (Optional)
- ◆ Regulated Output
- ◆ Low Ripple and Noise
- ◆ 3-Year Warranty

Models

ZB15 Single Output (2:1 Range)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ZB15-12-3.3S	9~18	3.3	3000	77
ZB15-12-5S	9~18	5	3000	80
ZB15-12-12S	9~18	12	1250	82
ZB15-12-15S	9~18	15	1000	84
ZB15-12-24S	9~18	24	625	84
ZB15-24-3.3S	18~36	3.3	3000	77
ZB15-24-5S	18~36	5	3000	82
ZB15-24-12S	18~36	12	1250	85
ZB15-24-15S	18~36	15	1000	86
ZB15-24-24S	18~36	24	625	87
ZB15-48-3.3S	36~75	3.3	3000	79
ZB15-48-5S	36~75	5	3000	83
ZB15-48-12S	36~75	12	1250	86
ZB15-48-15S	36~75	15	1000	87
ZB15-48-24S	36~75	24	625	87

ZB15 Dual Output (2:1 Range)

Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ZB15-12-5D	9~18	±5	±1500	78
ZB15-12-12D	9~18	±12	±625	79
ZB15-12-15D	9~18	±15	±500	79
ZB15-24-5D	18~36	±5	±1500	78
ZB15-24-12D	18~36	±12	±625	79
ZB15-24-15D	18~36	±15	±500	79
ZB15-48-5D	36~75	±5	±1500	78
ZB15-48-12D	36~75	±12	±625	79
ZB15-48-15D	36~75	±15	±500	79

ZB15 Single Output (4:1 Range)

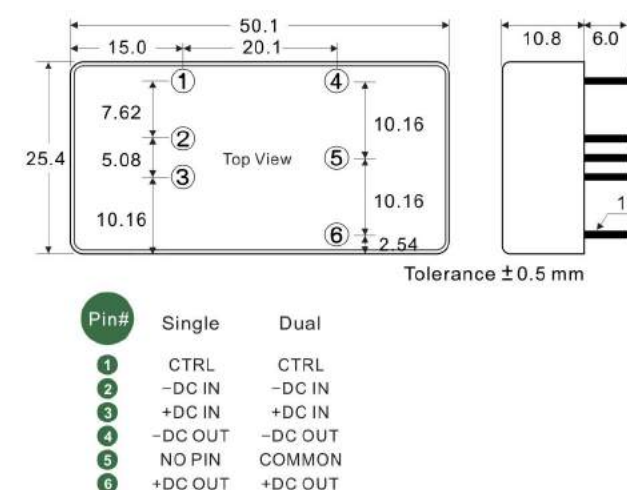
Model & Ordering No.	Input Voltage (V.DC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
ZB15-24F-3.3S	9~36	3.3	3000	70
ZB15-24F-5S	9~36	5	3000	76
ZB15-24F-12S	9~36	12	1250	77
ZB15-24F-15S	9~36	15	1000	75
ZB15-48F-3.3S	18~75	3.3	3000	71
ZB15-48F-5S	18~75	5	3000	78
ZB15-48F-12S	18~75	12	1250	79
ZB15-48F-15S	18~75	15	1000	79

Input Specifications	
Voltage Range	2:1 Range 12V — 9~18 VDC 24V — 18~36 VDC 48V — 36~75 VDC 4:1 Range 24V — 9~36 VDC 48V — 18~75 VDC
Filter	π type
Output Specifications	
Output Power	15 Watt (max.)
Voltage Accuracy	±2% (Full Load and Nominal Vin)
Minimum Load	0% to 3% (at Full Load)
Line Regulation	±0.5% (LL to HL at Full Load) (typ.)
Load Regulation	±1% (10% to 100% at Full Load) (typ.)
Ripple(20MHz bandwidth)	<0.2% Vout +40mV (Vp-p) (max.)
Noise (20MHz bandwidth)	<0.5% Vout +50mV (Vp-p) (max.)
Temperature Coefficient	±0.02% / °C (max.)
Short Circuit Protection	Current limit, Auto-recovery
General Specifications	
Efficiency (see table list)	70% to 87% (typ.)
Frequency	3000K Hz (typ.)
Isolation Voltage	1600 VDC (min.)
Isolation Resistance	10 <sup>9</sup> Ω (Input to Output) (min.)
Operating Temperature	-25°C to +70°C (with Derating)
Storage Temperature	-55°C to +105°C
Humidity	95% RH (max.)
Cooling	Free-air Convection
Physical Specifications	
Dimension (Tolerance ±0.5 mm)	50.1 x 25.4 x 10.8 mm 1.97 x 1.0 x 0.425 inches
Weight	32 g
Case Material	Five-side shielded Aluminum with Non-Conductive base, Black Anodize

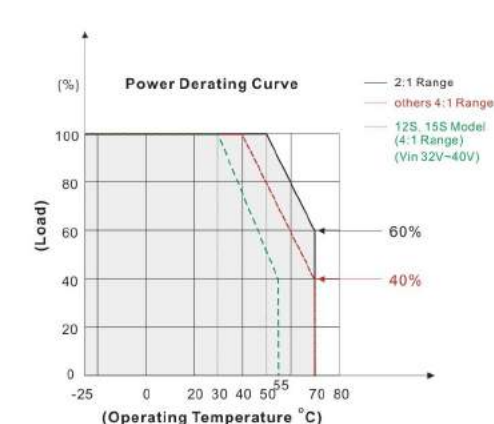
Application Note: Remote On/ Off

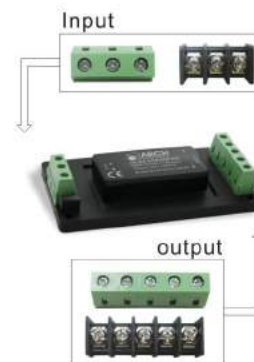
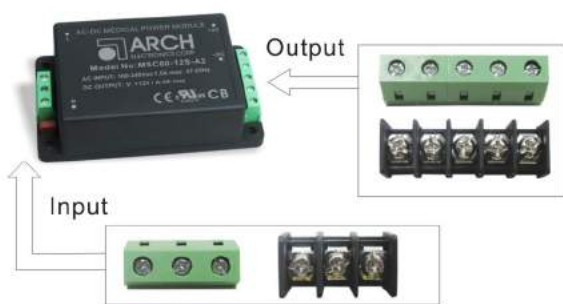
Control Pin is available for standard ZB15 models  
Please add suffix -N for models WITHOUT Control Pin  
Ex: ZB15-24-12S N

Outline Dimensions & Pin Connections



Derating





**AC-DC ITE Power Module**

MFC15, MZC20, AKC, MTC30, AJC, MSC60, AEC60 Series

**AC-DC ITE Medical Power Module**

MFC15, MZC20, MTC30, MSC60 Series

**DC-DC Converter**

ST10/ST15/ST20/ST30, ZB15, SW15/SW20 Series

<p><b>A2</b></p>	<p><b>A2-DN</b></p>	<p><b>MFC15 / MZC20 Series</b></p> <p>Pin# Single</p> <ul style="list-style-type: none"> <li>1 NO CONNECT</li> <li>2 AC IN (L)</li> <li>3 AC IN (N)</li> <li>4 NO CONNECT</li> <li>5 +DC OUT</li> <li>6 -DC OUT</li> <li>7 NO CONNECT</li> <li>8 NO CONNECT</li> </ul> <p><b>MTC30 Series</b></p> <p>Pin# Single</p> <ul style="list-style-type: none"> <li>1 AC IN (N)</li> <li>2 NO CONNECT</li> <li>3 AC IN (L)</li> <li>4 NO CONNECT</li> <li>5 -DC OUT</li> <li>6 NO CONNECT</li> <li>7 +DC OUT</li> <li>8 NO CONNECT</li> </ul>
<p><b>A2</b></p>	<p><b>A2-DN</b></p>	<p><b>AKC Series</b></p> <p>Pin# Single Dual Triple</p> <ul style="list-style-type: none"> <li>1 FG FG FG</li> <li>2 AC IN (N) AC IN (N) AC IN (N)</li> <li>3 AC IN (L) AC IN (L) AC IN (L)</li> <li>4 NO CONNECT NO CONNECT NO CONNECT</li> <li>5 +DC OUT +DC OUT +DC OUT</li> <li>6 -DC OUT -DC OUT COMMON</li> <li>7 NO CONNECT COMMON +DC OUT</li> <li>8 +DC OUT +DC OUT +5V RTN</li> <li>9 NO CONNECT NO CONNECT NO CONNECT</li> </ul> <p><b>AJC Series</b></p> <p>Pin# Single Dual 5512S 5524S Triple</p> <ul style="list-style-type: none"> <li>1 AC IN (L) AC IN (L) AC IN (L) AC IN (L)</li> <li>2 NO CONNECT NO CONNECT NO CONNECT NO CONNECT</li> <li>3 AC IN (N) AC IN (N) AC IN (N) AC IN (N)</li> <li>4 +DC OUT +DC OUT +OUT2 OUT +DC OUT</li> <li>5 NO CONNECT NO CONNECT +5V OUT +5V OUT</li> <li>6 -DC OUT COMMON +OUT2 RTN COMMON</li> <li>7 D O N O T C O N N E C T +5V RTN +5V RTN</li> <li>8 NO CONNECT -DC OUT NO CONNECT -DC OUT</li> </ul> <p><b>MSC60 Series</b></p> <p>Pin# Single</p> <ul style="list-style-type: none"> <li>1 NO CONNECT</li> <li>2 AC IN (L)</li> <li>3 AC IN (N)</li> <li>4 +DC OUT</li> <li>5 NO CONNECT</li> <li>6 -DC OUT</li> <li>7 NO CONNECT</li> <li>8 NO CONNECT</li> </ul>
<p><b>A2</b></p>	<p><b>A2-DN</b></p>	<p><b>AEC60 Series</b></p> <p>Pin# Single</p> <ul style="list-style-type: none"> <li>1 FG</li> <li>2 AC IN (L)</li> <li>3 AC IN (N)</li> <li>4 +DC OUT</li> <li>5 -DC OUT</li> <li>6 Trim</li> </ul>

<p><b>A2</b></p>	<p><b>A2-DN</b></p>	<p><b>ST10 / ST15 / ST20, ZB15, SW15 / SW20 Series</b></p> <p>Pin# Single Dual</p> <ul style="list-style-type: none"> <li>1 CTRL CTRL CTRL</li> <li>2 -DC IN -DC IN -DC IN</li> <li>3 +DC IN +DC IN +DC IN</li> <li>4 -DC OUT -DC OUT -DC OUT</li> <li>5 NO CONNECT NO CONNECT NO CONNECT</li> <li>6 NO CONNECT NO CONNECT COMMON</li> <li>7 +DC OUT +DC OUT +DC OUT</li> <li>8 NO CONNECT NO CONNECT NO CONNECT</li> </ul>
<p><b>A5</b></p>	<p><b>A5-DN</b></p>	<p><b>ST10 / ST15 / ST20, ZB15, SW15 / SW20 Series</b></p> <p>Pin# Single Dual 24Vout</p> <ul style="list-style-type: none"> <li>1 CTRL CTRL CTRL</li> <li>2 -DC IN -DC IN -DC IN</li> <li>3 +DC IN +DC IN +DC IN</li> <li>4 -DC OUT -DC OUT -DC OUT</li> <li>5 TRIM -DC OUT NO CONNECT</li> <li>6 -DC OUT COMMON -DC OUT</li> <li>7 NO CONNECT NO CONNECT NO CONNECT</li> <li>8 +DC OUT +DC OUT +DC OUT</li> <li>9 NO CONNECT NO CONNECT NO CONNECT</li> </ul>
<p><b>A2</b></p>	<p><b>A2-DN</b></p>	<p><b>ST10 / ST15 / ST20, ZB15, SW15 / SW20 Series</b></p> <p>Pin# Single Dual 24Vout</p> <ul style="list-style-type: none"> <li>1 CTRL CTRL CTRL</li> <li>2 -DC IN -DC IN -DC IN</li> <li>3 +DC IN +DC IN +DC IN</li> <li>4 -DC OUT -DC OUT -DC OUT</li> <li>5 TRIM -DC OUT NO CONNECT</li> <li>6 -DC OUT COMMON -DC OUT</li> <li>7 NO CONNECT NO CONNECT NO CONNECT</li> <li>8 +DC OUT +DC OUT +DC OUT</li> <li>9 NO CONNECT NO CONNECT NO CONNECT</li> </ul>

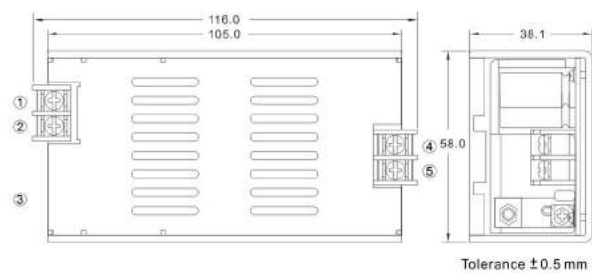




■ AES60E-DRK Series

Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (mA) max.	Eff (%)
AES60E-5S DRK	85~265	5	10,000	82
AES60E-9S DRK	85~265	9	6660	84
AES60E-12S DRK	85~265	12	5000	86
AES60E-15S DRK	85~265	15	4000	86
AES60E-24S DRK	85~265	24	2500	86
AES60E-48S DRK	85~265	48	1250	86

■ AES60E-DRK Series



- Pin# Single
- 1 AC IN (N)
  - 2 AC IN (L)
  - 3 FG
  - 4 +DC OUT
  - 5 -DC OUT

■ AQF120E-DRK Series

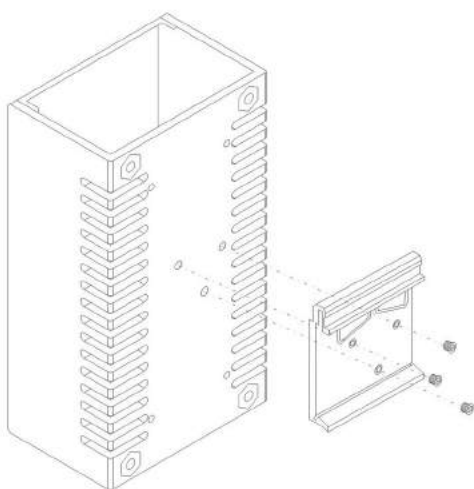
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (A) max.	Eff (%)
AQF120E-5S DRK	90~264	5	0~24	87
AQF120E-12S DRK	90~264	12	0~10	90
AQF120E-15S DRK	90~264	15	0~8	90
AQF120E-24S DRK	90~264	24	0~5	93
AQF120E-48S DRK	90~264	48	0~2.5	93

Note: 5V and 15V Output Voltage without UL Approval.  
(AQF120E-5S-DRK - AQF120E-15S-DRK)

■ AQF240E-DRK Series

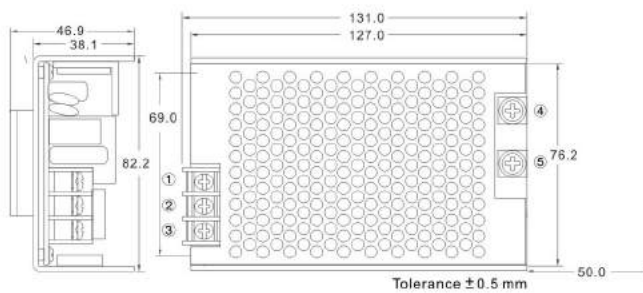
Model & Ordering No.	Input Voltage (V.AC)	Output Voltage (V.DC)	Output Current (A) max.	Eff (%)
AQF240E-12S DRK	90~264	12	16.66	90
AQF240E-15S DRK	90~264	15	14.66	90
AQF240E-24S DRK	90~264	24	10	92
AQF240E-28S DRK	90~264	28	8.57	92
AQF240E-32S DRK	90~264	32	7.5	92
AQF240E-36S DRK	90~264	36	6.66	92
AQF240E-48S DRK	90~264	48	5	93

Note: 15V Output Voltage without UL Approval.  
(AQF240E-15S-DRK)



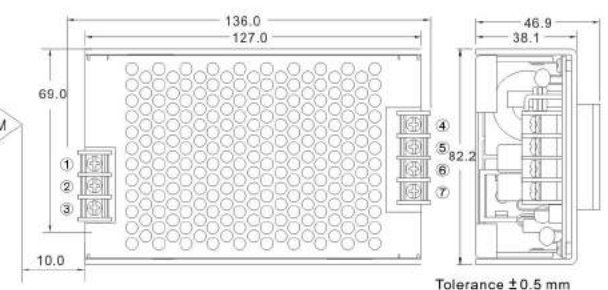
■ AQF120E-DRK Series

AQF120E-5S-DRK



- Pin# 5S
- 1 AC IN (L)
  - 2 AC IN (N)
  - 3 FG
  - 4 +DC OUT
  - 5 -DC OUT

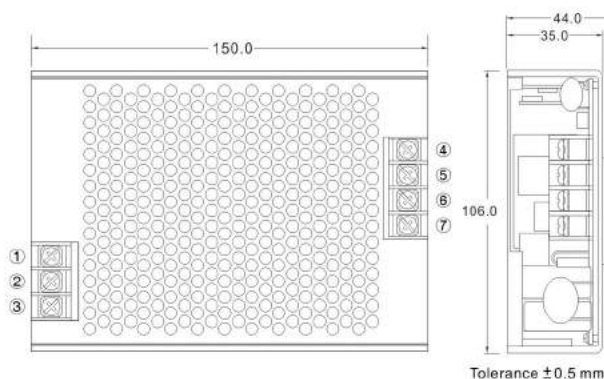
AQF120E-12S, 15S, 24S, 48S-DRK



18 CFM  
30 CFM

- Pin# 12S, 15S, 24S, 48S
- 1 AC IN (L)
  - 2 AC IN (N)
  - 3 FG
  - 4 +DC OUT
  - 5 +DC OUT
  - 6 -DC OUT
  - 7 -DC OUT

■ AQF240E-DRK Series



- Pin# Single
- 1 AC IN (L)
  - 2 AC IN (N)
  - 3 FG
  - 4 +DC OUT
  - 5 +DC OUT
  - 6 -DC OUT
  - 7 -DC OUT

A=For fixture to din rail clip only  
B=For fixture to pcb/chassis only  
A=M3x0.5P  
B=M3x0.5P



### Inquiry for Custom or Modified Power Supply

Company : \_\_\_\_\_ Name : \_\_\_\_\_  
 公司名稱 : \_\_\_\_\_ 姓名 : \_\_\_\_\_  
 Division : \_\_\_\_\_ Title : \_\_\_\_\_  
 部門 : \_\_\_\_\_ 職稱 : \_\_\_\_\_  
 Address : \_\_\_\_\_  
 地址 : \_\_\_\_\_  
 Country/City : \_\_\_\_\_ Email : \_\_\_\_\_  
 TEL : \_\_\_\_\_ FAX : \_\_\_\_\_

#### MECHANICAL CONSTRUCTION

AC/DC Converter       DC/DC Converter       Switching Power Supply

Encapsulated Module       Open Frame       Enclosed type

Mechanical Dimension (Max.) : L \_\_\_ W \_\_\_ H \_\_\_  mm  in.

#### INPUT SPECIFICATION

Input Voltage  AC \_\_\_\_\_ VAC \_\_\_\_\_ Hz

DC \_\_\_\_\_ VDC Range \_\_\_\_\_ b \_\_\_\_\_ VDC

Input /Output Isolation:  Yes Isolation : \_\_\_\_\_  VDC  VAC  No

#### OUTPUT SPECIFICATION

	Output 1 <input type="checkbox"/> OVP	Output 2 <input type="checkbox"/> OVP	Output 3 <input type="checkbox"/> OVP	Output 4 <input type="checkbox"/> OVP
Voltage (V)				
Current nom. (A)	Min.			
	Max.			
Load Regulation (%)				
Ripple & Noise pk-pk (mV)				

Protection :  Over Current  Over Voltage (OVP)  Over Power  Short Circuit

#### ELECTRONICAL SPECIFICATIONS

Operation Temperature : \_\_\_\_\_ b \_\_\_\_\_ °C Storage Temperature : \_\_\_\_\_ b \_\_\_\_\_ °C

Temperature Coefficient : \_\_\_\_\_ %/°C Trim :  Yes  No

Remote ON / OFF Control :  Yes  No Efficiency : \_\_\_\_\_ %

EMI / RFI : \_\_\_\_\_

QUANTITIES : Prototype \_\_\_\_\_ Pre-Production \_\_\_\_\_ ~~Prodtn~~ \_\_\_\_\_ /year

SCHEDULE : Prototype \_\_\_\_\_ Pre-Production \_\_\_\_\_ ~~Prodtn~~ \_\_\_\_\_ /year

TARGETPRICE : \_\_\_\_\_ (production quantities)

ADDITIONAL COMMENTS/SPECIFICATIONS :

**General**

The following terms and conditions, any price list or schedule, catalog, quotation, or invoice from Seller relevant to the sale of the Products and/or Services by Seller to Buyer. Buyer's acceptance of the Product and/or Services will manifest Buyer's assent to these terms and conditions. If Seller and Buyer have a written agreement in effect that covers the sale of the Product and/or Services, that agreement will govern the terms and conditions of sale exclusively.

**Orders**

All orders are subject to product availability and acceptance by Seller. All orders must have scheduled delivery dates. Any purchase order with a balance is unscheduled will be subject to Seller's standard lead-time.

**Prices**

Prices in general are dependent on volume of the particular items purchased, terms of payment, and the credit worthiness of the Buyer, and are subject to change without prior notice. Price is subject to change without notice and does not include packing and freight.

**Delivery**

All orders are F.O.B. shipping point, all shipping costs and insurance, as applicable, shall be added to the purchase price and shall be paid by the Buyer. Unless otherwise instructed by Buyer, Seller will exercise its own judgment in the method of shipment.

**Reschedule for Standard Products only**

Products scheduled to ship within 30 days may be rescheduled. All standard products must be taken within 60 days of the original scheduled date. Once an originally scheduled date is rescheduled, it may not be rescheduled again.

**Order cancellation**

- a. Special / Modified products: no cancellation will be allowed (100% cancellation fee)
- b. Standard products:
  - I. No charge within 3 days of the ordering day
  - II. 20% cancellation fee will be charged within 7 days of the ordering day
  - III. 30% cancellation fee will be charged within 15 days of the ordering day
  - IV. 50% cancellation fee will be charged within 30 days of the ordering day

**Limited Warranty, Limitation Of Liability And Remedy**

- a. **Limited Warranty and Remedy.** EXCEPT AS PROVIDED HEREIN, SELLER EXPRESSLY EXCLUDES AND DISCLAIMS ALL WARRANTIES, EXPRESSED OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE; AND THE WARRANTY WHICH FOLLOWS IN LIEU OF ANY AND ALL OTHER OBLIGATIONS OR LIABILITY ON SELLER'S PART. Seller warrants that it will repair or replace, at Seller's option, for any defective product because of defects in material, workmanship, which defect is discovered within warranty. This limited warranty does not extend to conditions causing the defect by Buyer such as misuse; neglect; improper installation; improper operation; inadequate maintenance, repair or alteration of the product; or unusual deterioration or damage to the product due to environment where used. Nor does said warranty cover accidental damage to the product. To have this warranty apply (1) the products should be in warranty (2) the products shall be installed, used and maintained according to Seller's instructions and guidelines, if any, and (3) no modification to the products shall be made after shipment without written authorization from Seller.
- b. **Limitation of Liability.** UNDER NO CIRCUMSTANCES WILL SELLER BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR FOR ANY OTHER LOSS, DAMAGE OR EXPENSE OF ANY KIND, INCLUDING LOSS OF PROFITS, ARISING IN CONNECTION WITH THIS CONTRACT OR WITH THE USE OF OR INABILITY TO USE SELLER'S PRODUCTS FURNISHED UNDER THIS CONTRACT. SELLER'S MAXIMUM LIABILITY SHALL NOT EXCEED AND BUYER'S REMEDY IS LIMITED TO REPAIR OR REPLACEMENT OF THE DEFECTIVE PART OF PRODUCT.
- c. **Return of Product to Seller.** Seller must be contacted and issue a return material authorization (RMA) Number prior to any product return, to assure receipt and proper credit. Any order returned to the Seller without an approved RMA Number will not be accepted.

**RMA ( Buyer should follow below procedure to return defective goods: )**

- a. Buyer must notify Seller in writing within the warranty period of any defect or nonconformance in the goods, by completing Seller's Return Merchandise Application form (RMA).
- b. Buyer must obtain authorized and an RMA number from Seller to return the defective goods
- c. Buyer must pay for one-way shipping costs, additionally, acceptance of returned goods are subject to Seller's examination of such goods, or verify that the defect or nonconformance or difficulty was not in any way caused the negligence, improper installation, misuse or unauthorized repair of the goods. Seller may refuse acceptance of returned goods that do not follow this procedure.

**Attention**

- a. We do best to ensure the exactness of information on the catalog. If there's any discrepancy in the specification sheet & catalog, the former should be given precedence over all others.
- b. For continuous product improvement, ARCH reserves the right to revise any information on catalog & specification sheet without any prior notice.
- c. The action to be strictly recommended that customers manage a sample test for evaluation and approval before placing formal order.