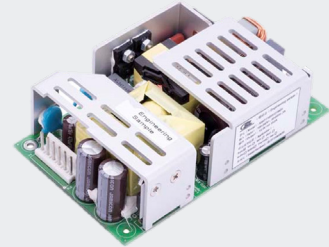


# SL POWER MINT1180 Series

180 Watts Single Output  
Medical Grade



Advanced Energy's SL Power MINT1180 series is a high power density for a power supply in a 3"x5" size. Approved to EN/IEC/UL/CSA 60601-1, 3rd edition, with isolation levels which satisfy the 2MOPP requirements. The MINT1180 series is ideal for portable medical devices, and many other applications where medical certifications, power density and cost are critical. The MINT1180 series operates at universal input range of 90 to 264Vac and wide temperature range -10 °C to 70 °C.

## AT A GLANCE

### Total Power

180 Watts

### Input Voltage

90 to 264 VAC

### # of Outputs

Single

## SPECIAL FEATURES

- 3" x 5" x 1.3" Package
- 180 W Convection Cooled Power
- Universal Input 90 to 264 VAC
- Efficiency 90% Typical
- Suitable for 1U Applications
- 2 x MOPP Input to Output Isolation
- Class I and Class II Versions
- 3 Year Warranty
- RoHS Compliant

## SAFETY

- CSA/IEC/EN/UL60601-1, 3rd Edition
- CSA/IEC/EN/UL62368-1
- CE Mark



## ELECTRICAL SPECIFICATIONS

Input	
Input range	90 to 264 VAC, 47 to 63 Hz, 1 $\phi$ ; 120 to 370 VDC
Input current	1.8 A @ 115 VAC, 0.9 A @ 230 VAC
Inrush current	55 A max., cold start @ 264 VAC input
Input fuses	4 A, 250 VAC fuses provided in both line & neutral
Earth Leakage current	<275 $\mu$ A @ 264 VAC, 60 Hz, NC <400 $\mu$ A @ 264 VAC, 60 Hz, SFC
Efficiency	90% typical
Isolation voltage	Input/Ground: 1800 VAC (1 x MOPP) Input/Output: 4000 VAC (2 x MOPP) Output/Ground: 1500 VAC
Output	
Output power	180 W convection cooled
Ripple and noise	See "Ordering Information"
Total regulation	See "Ordering Information"
Output voltage	See "Ordering Information"
Switching Frequency	PFC: Fixed, 65kHz. Main Converter: Variable 35-200kHz, 65-70kHz at full load
Adjustment range	Fixed output
Turn on time	< 3 s @ 115 VAC, 180 W load
Hold-up time	> 16 ms @ 120 VAC, 180 W load
Minimum load	Not required
Transient Response	500 $\mu$ S typical, for return to within 0.5% of nominal, <= 3% of nominal output voltage @ 50% load change, di/dt = 0.2 A/ $\mu$ S
Reliability	
MTBF	214,194 hrs @ 110 VAC Input, 25°C Ambient
Protection	
Short circuit protection	Provided - no damage will occur if the output is shorted, auto recovery
Overload protection	120% to 140% of current rating, Hiccup mode
Overvoltage protection	Latching type. See "Ordering Information" for trip ranges.
Overtemperature protection	Automatic power shutdown at T <sub>C</sub> = 135°C/115°C

## ENVIRONMENTAL SPECIFICATIONS

Weight	325 grams
Dimensions	3.0" x 5.0" x 1.3" (W x L x H)
Vibration	Operating 0.003 g <sup>2</sup> /Hz, 1.5 grms overall, 3 axes, 10 min/axis Non-operating 0.026 g <sup>2</sup> /Hz, 5.0 grms overall, 3 axes, 1 hr/axis
Shock	Operating Half-sine, 20 gpk, 10 mS, 3 axes, 6 shocks total Non-operating Half-sine, 40 gpk, 10 mS, 3 axes, 6 shocks total
Operating temperature	-10°C to +70°C. Start up at -40°C, full load
Storage temperature	-40°C to +85°C
Altitude	Operating -500 to 10,000 ft Non-operating -500 to 40,000 ft
Relative humidity	5% to 95%, non-condensing

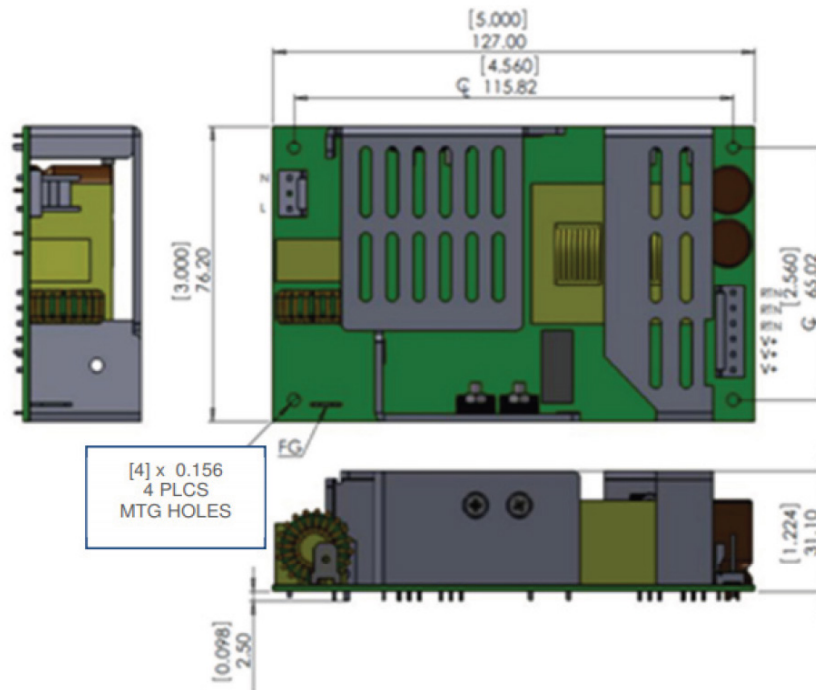
## EMI/EMC COMPLIANCE

Conducted emissions	EN55011/22 Class B, FCC Part 15, Subpart B, Class B
Radiated emissions	EN55011/22 FCC Part 15, Class A with 6dB margin
Static discharge immunity	EN61000-4-2, 6 kV contact discharge, 8 kV air discharge, criteria A <sup>1</sup>
Radiated RF immunity	EN61000-4-3, 3 V/m, criteria A <sup>1</sup>
EFT/Burst immunity	EN61000-4-4, 2kV/5kHz, criteria A <sup>1</sup>
Line surge immunity	EN61000-4-5, 1 kV differential, 2 kV common mode, criteria A <sup>1</sup>
Conducted RF immunity	EN61000-4-6, 3 Vrms, criteria A <sup>1</sup>
Power frequency magnetic field immunity	EN61000-4-8, 3 A/m, criteria A <sup>1</sup>
Voltage dip immunity	EN61000-4-11, 5% Vin, 0.5 cycle; 40% Vin, 5 cycles; 70% Vin, 25 cycles; criteria A <sup>1</sup>
Line harmonic emissions	EN61000-3-2, class A,B,C & D
Flicker test	EN61000-3-3, Complies (dmax < 6%)

## Notes:

1. According to the standards, performance criteria are decoded as following:
  - A. Normal performance during and after the test
  - B. Temporary degradation, self-recoverable
  - C. Temporary degradation, operator intervention required to recover the operation
  - D. Permanent damage

MECHANICAL DRAWING



Notes:

1. All dimensions in inches (mm).
2. Mounting holes should be grounded for EMI purpose.
3. FG is safety ground connection.
4. The power supply requires mounting on metal standoffs 0.2" (5mm) in height, min.

PIN ASSIGNMENTS

Connector	MINT1180	
J100 (Input connector)	PIN 1	AC Line
	PIN 2	SPARE
	PIN 3	AC Neutral
J300 (DC output connector)	PIN 1	RTN
	PIN 2	RTN
	PIN 3	RTN
	PIN 4	+Vo
	PIN 5	+Vo
	PIN 6	+Vo

## CONNECTORS

	Connector	Mating Connector
J100 (Input connector)	/	AMP #640250-3. Pins = 640252-2
J300 (DC output connector)	/	AMP #640250-6. Pins = 640252-2
FG (Ground)	0.25" FASTON TAB	MOLEX 190020001

## ORDERING INFORMATION

Model Number	Output Voltage	Output Current	Minimum Load	Total Regulation	Ripple & Noise <sup>2</sup>	OVP Threshold
MINT1180A1275K01	12 V	15.0 A	0 A	± 3%	120mV	14.0 ± 1.1 V
MINT1180A1575K01	15 V	12.0 A	0 A	± 3%	150mV	18.5 ± 1.2 V
MINT1180A1875K01	18 V	10.0 A	0 A	± 3%	180mV	21.5 ± 2.0 V
MINT1180A2475K01	24 V	7.50 A	0 A	± 3%	240mV	29.0 ± 2.5 V
MINT1180A2875K01	28 V	6.40 A	0 A	± 3%	280mV	33.5 ± 2.5 V
MINT1180A3275K01	32 V	5.62 A	0 A	± 3%	320mV	36.0 ± 3.0 V
MINT1180A3675K01	36 V	5.00 A	0 A	± 3%	360mV	42.0 ± 3.0 V
MINT1180A4875K01	48 V	3.75 A	0 A	± 3%	480mV	56.0 ± 3.0 V

Notes:

1. Total convection power is 180 Watts.



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## ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

**PRECISION | POWER | PERFORMANCE | TRUST**

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