



## Features

- 3" x 5" x 1.3" Package
- 180W Convection Cooled Power
- Ideal for 1U Applications
- Class I and Class II versions
- Universal Input 90-264 VAC
- Approved to CSA/EN/IEC/UL60601-1, 3<sup>rd</sup> Edition, 2 x MOPP Isolation
- Approved to CSA/EN/IEC/UL60950-1 2<sup>nd</sup> Edition
- Efficiency 90% typical
- 3 Year Warranty
- RoHS Compliant



## Description

The MINT1180 product family is the most cost-effective medically approved supply in the market with 180 watts of convection cooled output power in 3"X5" footprint. The series comes in eight different models ranging from 12 to 48V and has been approved to IEC60601-1 3<sup>rd</sup> Edition, rated for 2 MOPP (Means of Patient Protection) isolation. This new single output power supply family has both Class I and II input versions and accepts wide input range of 90 to 264Vac. The typical 90% efficiency and convection cooled make this supply an excellent solution for HomeCare applications where the use of fans is not desired.

## Model Selection

| Model Number     | Volts | Output Current* | Minimum Load | Ripple & Noise** | Total Regulation | OVP Threshold |
|------------------|-------|-----------------|--------------|------------------|------------------|---------------|
| MINT1180A1275K01 | 12V   | 15.0A           | 0A           | 120mV pk-pk      | ±3%              | 14.0 ± 1.1V   |
| MINT1180A1575K01 | 15V   | 12.0A           | 0A           | 150mV pk-pk      | ±3%              | 18.5 ± 1.2V   |
| MINT1180A1875K01 | 18V   | 10.0A           | 0A           | 180mV pk-pk      | ±3%              | 21.5 ± 2.0V   |
| MINT1180A2475K01 | 24V   | 7.50A           | 0A           | 240mV pk-pk      | ±3%              | 29.0 ± 2.5V   |
| MINT1180A2875K01 | 28V   | 6.40A           | 0A           | 280mV pk-pk      | ±3%              | 33.5 ± 2.5V   |
| MINT1180A3275K01 | 32V   | 5.62A           | 0A           | 320mV pk-pk      | ±3%              | 36.0 ± 3.0V   |
| MINT1180A4875K01 | 48V   | 3.75A           | 0A           | 480mV pk-pk      | ±3%              | 56.0 ± 3.0V   |

Notes: \* Total convection power is 180 Watts.

\*\* Measured with noise probe directly across output terminals, and load terminated with 0.1µF ceramic and 10µF low ESR capacitors.

## General Specifications

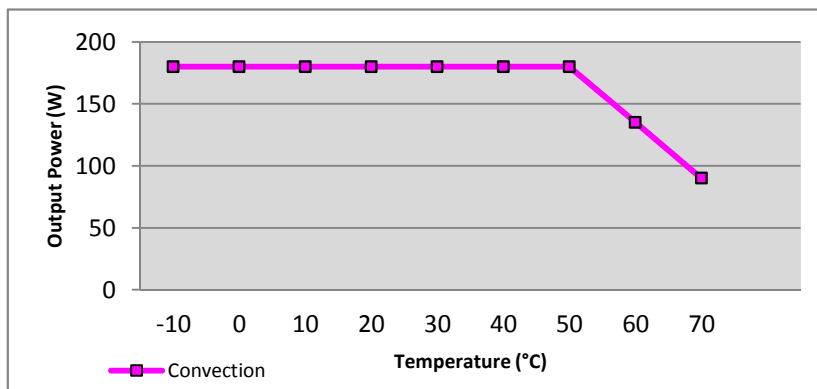
|                      |   |                     |                                      |
|----------------------|---|---------------------|--------------------------------------|
| <b>AC Input</b>      | 100-240Vac, ±10%, 47-63Hz, 1Ø<br>120-370Vdc | <b>Turn On Time</b> | Less than 3 sec. @115Vac & Full Load |
| <b>Input Current</b> | 115Vac: 1.8A, 230Vac: 0.9A                  | <b>Hold-up Time</b> | >16mS at 180W, 120Vac                |

## General Specifications (continued)

|                              |  |                                 |  |
|------------------------------|--|---------------------------------|--|
| <b>Inrush Current</b>        | 264Vac, cold start: will not exceed 55A  | <b>Signals</b>                  | N/A  |
| <b>Input Fuses</b>           | F1, F2: 4.00A, 250VAC fuses provided on all models   | <b>Overload Protection</b>      | 120%-150% of rating, Hiccup Mode   |
| <b>Earth Leakage Current</b> | <275 $\mu$ A@264Vac, 60Hz, NC; <400 $\mu$ A SFC  | <b>Short Circuit Protection</b> | Provided - no damage will occur if the output is shorted, auto recovery  |
| <b>Efficiency</b>            | 88% typical  | <b>Overvoltage Protection</b>   | OVP latch at 110%-130% of rated output voltage.  |
| <b>Output Power</b>          | 180W convection cooled   | <b>Switching Frequency</b>      | PFC: Fixed, 65kHz<br>Main Converter: Variable 35-200kHz, 65-70kHz at full load.  |
| <b>Transient Response</b>    | 500 $\mu$ S typ. for return to within 0.5% of nominal, 50% load step. $\Delta i/\Delta t$ <0.2A/ $\mu$ S. Max Volt Deviation = 3%                      | <b>Isolation</b>                | Input-Output: 4000Vac, 2 x MOPP<br>Input-Ground: 1800Vac, 1 x MOPP<br>Output-Ground: 1500Vac                                 |
| <b>Ripple and Noise</b>      | See chart  | <b>Operating Temperature</b>    | -10°C to +70°C<br>Start Up at -40°C, full load   |
| <b>Output Voltage</b>        | See chart  | <b>Temperature Derating</b>     | Derate output power linearly above 50°C to 50% at 70°C   |
| <b>Voltage Adjustability</b> | Fixed output   | <b>Storage Temperature</b>      | -40°C to +85°C   |
| <b>Minimum Load</b>          | Not required   | <b>Altitude</b>                 | Operating: -500 to 10,000 ft.<br>Non-operating: -500 to 40,000 ft.   |
| <b>Total Regulation</b>      | +/- 3% combined line, load and initial setting.  | <b>Relative Humidity</b>        | 5% to 95%, non-condensing  |
| <b>Vibration</b>             | Operating: 0.003g <sup>2</sup> /Hz, 1.5grms overall, 3 axes, 10 min/axis<br>Non-Operating: 0.026g <sup>2</sup> /Hz, 5.0grms overall, 3 axes, 1 hr/axis | <b>Shock</b>                    | Operating: Half-sine, 20gpk, 10ms, 3 axes, 6 shocks total<br>Non-Operating: Half-sine, 40 gpk, 10 ms, 3 axes, 6 shocks total |
| <b>Dimensions</b>            | W: 3.0" x L: 5.0" x H: 1.3"  | <b>Safety Standards</b>         | EN/CSA/UL/IEC 60601-1, 3 <sup>rd</sup> Edition<br>EN/CSA/UL/IEC 60950-1, 2 <sup>nd</sup> Edition                             |
| <b>Weight</b>                | 325g   | <b>MTBF</b>                     | 214,194 hours, 25°C, 110Vac  |

## Output vs. Temperature Derating Curve

180W convection cooled, derate output power to 50% at 70°C.

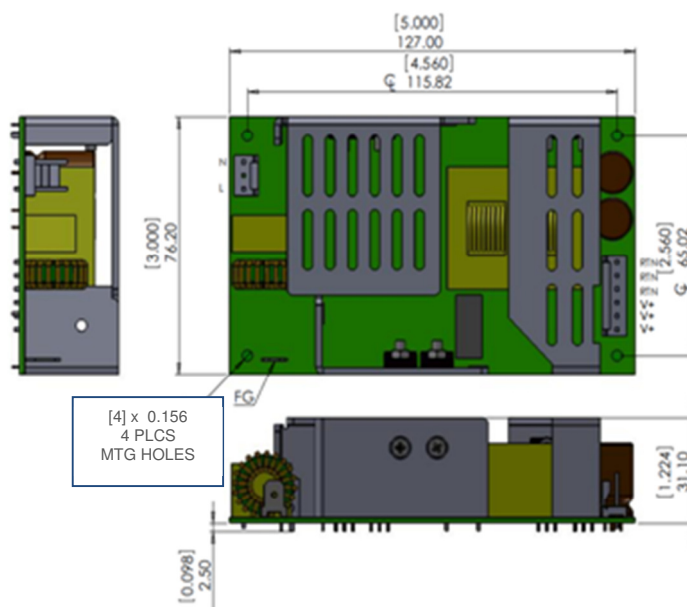


## EMI/EMC Compliance

|   |  |
|---|--|
| 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, Criteria A, 6kV Contact Discharge, 8kV air discharge                    |
| Radiated RF Immunity                    | EN61000-4-3, 3V/m. Criteria A.   |
| EFT/Burst Immunity                      | EN61000-4-4, 2kV/5kHz, Criteria A  |
| Line Surge Immunity                     | EN61000-4-5, 1kV differential, 2kV common-mode, Criteria A                           |
| Conducted RF Immunity                   | EN61000-4-6, 3Vrms, Criteria A   |
| Power Frequency Magnetic Field Immunity | EN61000-4-8, 3A/m, Criteria A  |
| Voltage Dip Immunity                    | EN61000-4-11, 5% Vnom: 0.5cycle; 40% Vnom: 5 cycles, 70% Vnom: 25 cycles, Criteria A |
| Line Harmonic Emissions                 | EN61000-3-2, Class A, B, C, & D  |
| Flicker Test                            | EN61000-3-3, Complies (dmax<6%)  |

## Mechanical Drawing

- Notes:**
1. All dimensions in inches (mm), tolerance is +/-0.000".
  2. Mounting holes should be grounded for EMI purposes.
  3. FG is safety ground connection.
  4. The power supply requires mounting on metal standoffs 0.20" (5mm) in height, min.



## Connector Information

| Input Connector<br>J100                             | Ground<br>(FG)                       | DC Output Connector<br>J300                         |  |
|---|--------------------------------------|---|--|
| PIN 1) AC LINE<br>PIN 2) EMPTY<br>PIN 3) AC NEUTRAL | 0.25" FASTON TAB                     | Term. 1,2,3: RTN<br>Term. 4,5,6: +Vout              |  |
| Mating Connector:<br>AMP 640250-3<br>Pins: 640252-2 | Mating Connector:<br>Molex 190020001 | Mating Connector:<br>AMP 640250-6<br>Pins: 640252-2 |  |