

# MINT1045

## 45 W Single Output Series

### Medical & ITE – Universal Input Power Supply



3 Year Warranty

- 45 W Convection Cooled
- Universal Input 80--270 Vac
- Very Small Size: 2" W x 3" L x 1.0" H
- 88% Efficiency Typical
- Class I or Class II AC Input Applications
- CSA/EN/IEC/UL60601-1 3<sup>rd</sup> Edition for Medical, BF Rated (2 MOPP), Ultra-low Leakage Current
- CSA/EN/IEC/UL60950-1 2<sup>nd</sup> Edition for ITE



### International Safety Standard Approvals



### Specifications

All Specifications are typical at nominal input, full load at 25°C unless otherwise stated.

|                              |                                                                                                           |                                   |                                                                                                                                             |
|------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| <b>AC Input</b>              | 100-240Vac +/- 10%, 47-63 Hz 1Ø rated<br>80-270 Vac, 47-440 Hz operational                                | <b>Turn On Time</b>               | 500 ms max at 120 Vac                                                                                                                       |
| <b>Input Current</b>         | 0.75A @ 120 Vac, 0.45 A @ 240 Vac                                                                         | <b>Hold-up Time</b>               | 25 ms minimum at 45 W, nominal input (120Vac)                                                                                               |
| <b>Inrush Current</b>        | Average over half cycle 37A max., 264 Vac                                                                 | <b>Overvoltage Protection</b>     | 110-160%, auto-reset                                                                                                                        |
| <b>Input Fuses</b>           | F1, F2: 1.6A, 250Vac fuses provided internally                                                            | <b>Overload Protection</b>        | Hiccup Mode, 58W typical                                                                                                                    |
| <b>Power Factor</b>          | Complies with EN61000-3-2, Class A                                                                        | <b>Short Circuit Protection</b>   | Hiccup Mode, 58W typical                                                                                                                    |
| <b>Efficiency</b>            | 88% typical                                                                                               | <b>Overtemperature Protection</b> | Self-Recovering                                                                                                                             |
| <b>Output Power</b>          | 45 W continuous. See chart for operation above 50°C                                                       | <b>Medical Safety Standards</b>   | CSA/EN/IEC/UL 60601-1, 3 <sup>rd</sup> Edition<br>Methods Of Protection: 2 MOPP for Type BF Applications                                    |
| <b>Peak Output Power</b>     | 50 W for 1 minute, 10% duty cycle                                                                         | <b>ITE Safety Standards</b>       | CSA/EN/IEC/UL 60950-1, IEC 2 <sup>nd</sup> Edition<br>See page 2 for detailed safety agency standards                                       |
| <b>Ripple and Noise</b>      | 1% pk-pk max., 20 MHz BW, differential mode<br>Measured with noise probe directly across output terminals | <b>Isolation</b>                  | Input-Output: 4500Vac, Input-Ground: 1900Vac<br>Output-Ground: 1900Vac                                                                      |
| <b>Output Voltage</b>        | See chart                                                                                                 | <b>Leakage Current</b>            | 12V-28V models: 120Vac: 30µA NC/70µA SFC<br>264Vac: 75µA NC/130µA SFC<br>48V model: 120Vac: 90µA NC/120µA SFC<br>264Vac: 200µA NC/300µA SFC |
| <b>Voltage Adjustability</b> | Not adjustable<br>Factory set with fixed resistors for higher reliability                                 | <b>Operating Temperature</b>      | -20° to 70°C<br>See derating chart                                                                                                          |
| <b>Minimum Load</b>          | Not required                                                                                              | <b>Output Power Derating</b>      | Derate output power by 2.5%<br>per °C above 50°C, up to 70°C max                                                                            |
| <b>Total Regulation</b>      | See chart                                                                                                 | <b>Storage Temperature</b>        | -40 to +85°C                                                                                                                                |
| <b>Transient Response</b>    | 500µs max. to 1%, 50% load step<br>0.2A/µs, 3.5% deviation. typical                                       | <b>Relative Humidity</b>          | 5% to 95%, non-condensing                                                                                                                   |
| <b>Switching Frequency</b>   | Fixed 65 kHz, typical                                                                                     | <b>MTBF</b>                       | 300K hours per Telcordia                                                                                                                    |

### Model Number Key

MINT 1 045 A 12 75 K 01

01 = Standard Model, 02 and higher indicates a modified model.

"K" = Input Connector - 3 pin header

"75" = Output Connector - 4 pin header

Output Voltage: "12" = 12V output, "24" = 24V output, etc.

Model Configuration: "A" = Class I Input; "B" = Class II Input (no ground)

Output Power (Watts) - "045" = 45W

# of Outputs

Product Family: "M" = Medical, "I" = Internal, "NT" = New Technology

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| Model Number     | Volts | Output Current | Output Parameters |                  | Initial Set-point Tolerance |
|------------------|-------|----------------|-------------------|------------------|-----------------------------|
|                  |       |                | Ripple & Noise    | Total Regulation |                             |
| MINT1045A1275K01 | 12 V  | 3.75           | 120mV             | ±0.5%            | ±2%                         |
| MINT1045A1575K01 | 15 V  | 3.00           | 150mV             | ±0.5%            | ±2%                         |
| MINT1045A2475K01 | 24 V  | 1.90           | 240mV             | ±0.5%            | ±2%                         |
| MINT1045A2875K01 | 28 V  | 1.60           | 280mV             | ±0.5%            | ±2%                         |

Only class I input

#### Notes:

- Derate output power by 2% per volt AC for input voltage <90Vac.

#### Specifications (continued)

|                             |                                                                                                     |                               |                                                                                   |
|-----------------------------|-----------------------------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------------|
| <b>Vibration</b>            | Random vibration per MIL-STD-810E, Method 514.4, Cat. 1, Figure 514.4-1, 1 hr in each of three axes | <b>Shock</b>                  | Half-sine, 40 gpk, 10 msec duration, +/- in each of three axes, total of 6 shocks |
| <b>Enclosure Dimensions</b> | See outline drawing                                                                                 | <b>Operating Altitude</b>     | -500 to 10,000 ft                                                                 |
| <b>Weight</b>               | 113 grams                                                                                           | <b>Non-operating Altitude</b> | -500 to 40,000 ft                                                                 |

#### EMI/EMC Compliance

|                                                                  |                                                                                                                        |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>Conducted Emissions</b>                                       | EN55011/22 Class B, FCC Part 15, Class B, 3db margin                                                                   |
| <b>Radiated Emissions</b>                                        | EN55011/22 Class A, FCC Part 15, Class A,                                                                              |
| <b>Static Discharge Immunity</b>                                 | EN61000-4-2, 6kV Contact Discharge, 8kV air discharge                                                                  |
| <b>Radiated RF Immunity</b>                                      | EN61000-4-3, 3V/m.                                                                                                     |
| <b>EFT/Burst Immunity</b>                                        | EN61000-4-4, 2kV/5kHz.                                                                                                 |
| <b>Line Surge Immunity</b>                                       | EN61000-4-5, 1kV differential, 2kV common-mode                                                                         |
| <b>Conducted RF Immunity</b>                                     | EN61000-4-6, 3Vrms                                                                                                     |
| <b>Power Frequency Magnetic Field Immunity</b> Convection Cooled | EN61000-4-8, 3A/m                                                                                                      |
| <b>Voltage Dip Immunity</b>                                      | EN61000-4-11 100Vac, 95% dip/0.5 cycle (Criteria A), 60%/5cycles (Criteria A at 30% load), 30%/25 cycles (Criteria A). |
| <b>Line Frequency Harmonics</b>                                  | Complies with EN61000-3-2, EN60601-2-1                                                                                 |

#### Safety Agency Compliance

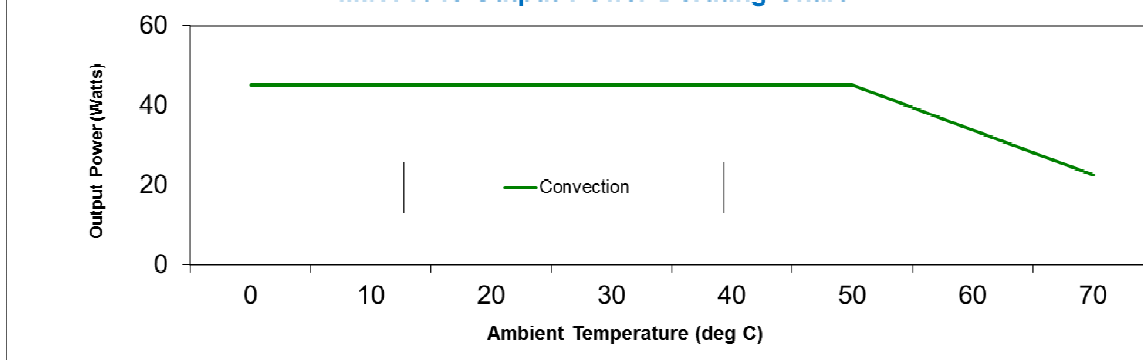
##### Medical Certification to the New 3rd Edition:

- Demko certified to EN 60601-1:2005, 3rd Ed.
- CB certified to IEC 60601-1:2005, 3rd Edition
- UL Recognized to ANSI AAMI ES60601-1:2005 & CAN/CSA C22.2, No. 60601-1-08

##### ITE Certification to the New 2nd Edition:

- Demko certified to EN60950-1:2006+ A11:2009, 2nd Ed.
- CB certified to IEC 60950-1:2005, 2nd Edition
- UL Recognized to UL 60950-1:2007, 2nd Edition & CAN/CSA C22.2, No. 60950-1-07, 2nd Edition

MINT1045 Output Power Derating Chart



# MINT1045

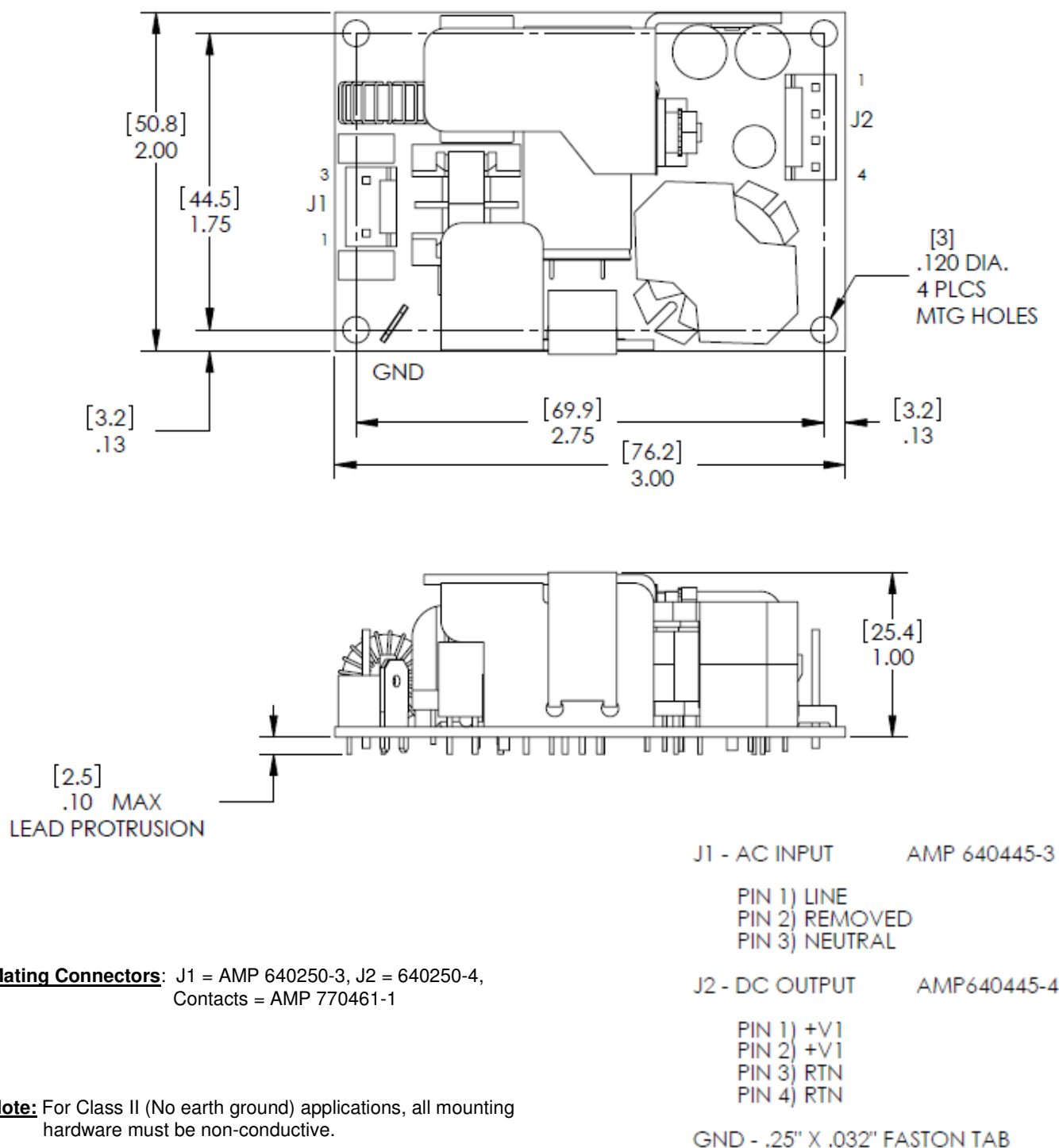
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## Outline Drawing



**Mating Connectors:** J1 = AMP 640250-3, J2 = 640250-4,  
Contacts = AMP 770461-1

**Note:** For Class II (No earth ground) applications, all mounting hardware must be non-conductive.