

M8747 SERIES

DC/DC POWER SUPPLY



PRODUCT HIGHLIGHTS

- **MINIATURE**
- **HIGH DENSITY**
- **QUAD OUTPUT**
- **DC/DC CONVERTER**
- **UP TO 100W**

Applications

Military, Ruggedized, Telecom, Industrial

Special Features

- Miniature size
- High efficiency
- Wide input range
- Up to 15 W/IN³
- Input / Output isolation
- Fixed switching frequency (250 kHz)
- TTL logic enable
- EMI filters included
- Indefinite short circuit protection with auto-recovery
- Input over-voltage shutdown with auto-recovery
- Over temperature shutdown with auto-recovery

Environmental Conditions

Meets or exceeds MIL-STD-810D

Temperature:

Operating –55°C to +85°C (baseplate)

Storage –55°C to +125°C

Altitude

Method 500.4

Procedures I – Storage/Air transport:

Up to 70,000 ft. (non-operational)

Procedures II – Operation/Air Carriage:

Up to 70,000 ft. (operational)

Reliability

150,000 hours, calculated per

MIL-STD-217F at +85°C baseplate,
ground fixed.

Electrical Specifications

DC INPUT

DC Input range: 18 to 48 VDC

Input transient protection:

All models meet or exceed (no damage)

MIL-STD-1275A (100V for 50 mSec) and

MIL-STD-704A/D (80V for 0.1 Sec)

Over-voltage shutdown with auto-recovery

Efficiency: Up to 82%

EMC:

Designed to meet* MIL-STD-461F CE101,

CE102, CS101, CS114, CS115, CS116, RE101,

RE102, RS101, RS103

Isolation:

200V between Input and Output

200V between Input and Case

DC OUTPUT (floating)

Line/Load regulation:

Less than ±1% (no load to full load, –55°C to +85°C)

Ripple and Noise: 50mV_{p-p}, typical (max. 1%)

Current limiting (Foldback):

Continuous protection for unlimited time

Over voltage protection:

Passive transorb on output.

Over temperature protection:

Shutdown at baseplate

temperature of +100°C (±5°C)

Automatic recovery at baseplate

temperature lower than +90°C

(±5°C)

Isolation:

100V between Output and Case

* EMC compliance achieved when tested with 5 µH LISNs,
shielded harness and static resistive load.

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PIN ASSIGNMENT

| Pin No. | Pin Function |
|---------|-------------------|
| 1 | INHIBIT |
| 2 | SYN IN. |
| 3 | - OUT 2 SENSE RTN |
| 4 | - OUT 1 |
| 5 | - OUT 1 |
| 6 | - OUT 1 SENSE RTN |
| 7 | + OUT 1 |
| 8 | + OUT 1 |
| 9 | + OUT 1 SENSE |
| 10 | -OUT 3 |
| 11 | + OUT 2 SENSE |
| 12 | + OUT 3 |
| 13 | - VIN |
| 14 | + VIN |

| Pin No. | Pin Function |
|---------|--------------|
| 15 | - OUT 4 |
| 16 | + OUT 4 |
| 17 | - OUT 2 |
| 18 | - OUT 2 |
| 19 | - OUT 2 |
| 20 | - OUT 2 |
| 21 | SIGNAL RTN |
| 22 | CHASSIS |
| 23 | - OUT 1 |
| 24 | - OUT 1 |
| 25 | - OUT 1 |
| 26 | - OUT 1 |
| 27 | + OUT 1 |
| 28 | + OUT 1 |

| Pin No. | Pin Function |
|---------|--------------|
| 29 | + OUT 1 |
| 30 | + OUT 1 |
| 31 | - VIN |
| 32 | - VIN |
| 33 | - VIN |
| 34 | + VIN |
| 35 | + VIN |
| 36 | + VIN |
| 37 | + OUT 2 |
| 38 | + OUT 2 |
| 39 | + OUT 2 |
| 40 | + OUT 2 |

Functions and Signals

INHIBIT signal

The INHIBIT signal is used to turn the power supply ON and OFF.

TTL "1" or OPEN – will turn on the power supply (For normal operation leave the signal not connected).

TTL "0" or short– will turn off the power supply.

SYNC signal

The SYNC signal is used to allow the power supply frequency to sync with the system frequency.

The system frequency should be 250 kHz \pm 10 kHz.

When not connected the power supply will work at 250 kHz \pm 10 kHz.

SIGNAL RTN

The SIGNAL RTN is used as a return path for SYNC and INHIBIT signals.

This pin is referenced to VIN RTN.

OUT 1 SENSE

The SENSE is used to achieve accurate load regulation at load terminals. This is done by connecting the pins directly to the load terminals.

The remote sense correction function is limited to voltage drop between converter's output and load terminals of 2% to 5%, or up to 0.5V, the least of the two.

When not used, connect OUT 1 SENSE to OUT 1 and - OUT 1 SENSE RTN to - OUT 1.

Do not leave SENSE and SENSE RTN pins unconnected. These pins can be tied internally to avoid external connection, if function is not required – consult factory

OUT 2 SENSE

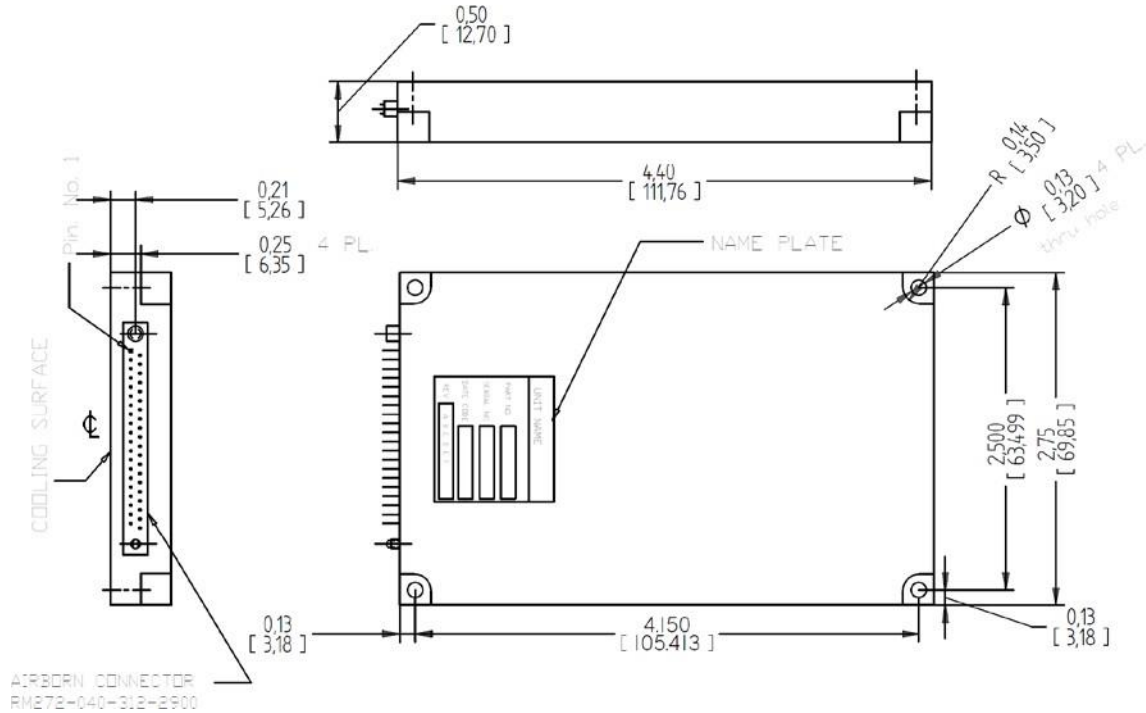
The SENSE is used to achieve accurate load regulation at load terminals. This is done by connecting the pins directly to the load terminals. The remote sense correction function is limited to voltage drop between converter's output and load terminals of 2% to 5%, or up to 0.5V, the least of the two.

When not used, connect OUT 2 SENSE to OUT 2 and - OUT 2 SENSE RTN to - OUT 2

Do not leave SENSE and SENSE RTN pins unconnected. These pins can be tied internally to avoid external connection, if function is not required – consult factory.

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OUTLINE DRAWING



Notes

1. Dimensions are in Inches [mm]
2. Tolerance is:
.XX \pm 0.01 in
.XXX \pm 0.005 in
3. Weight: Approx. 6 oz (170 g)

* Specifications are subject to change without prior notice by the manufacturer.