

M7874 SERIES

DC/DC POWER SUPPLY



PRODUCT HIGHLIGHTS

- MINIATURE
- HIGH DENSITY
- QUAD OUTPUTS
- DC/DC CONVERTER
- UP TO 50W



Applications

Military, Ruggedized, Telecom, Industrial Power Supply

Special Features

- Miniature size
- High efficiency
- High density: Up to 12.5 W/in³
- Wide input range
- Input / Output isolation
- Fixed switching frequency (250 kHz)
- EMI filters included
- Remote inhibit (On/Off) function.
- Over-voltage protection
- Indefinite short circuit protection 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

Reliability

150,000 hours, calculated IAW MIL-HDBK-217F

Notice 2 at +85 °C baseplate, Ground fix environment.

Electrical Specifications

DC INPUT

Input voltage range: 18-36 V_{DC}

Over-voltage and under-voltage lockout: Electronic shutdown with automatic recovery

Efficiency: 80% typical (measured at nominal input voltage, maximum output current and standard room temperature)

EMC: Designed to MIL-STD-461F*: CE101, CE102, CS101, CS114, CS115, CS116, RE101, RE102, RS101, RS103

Isolation:

Input to Output 200V_{DC} Input to Case 200V_{DC}

DC OUTPUT (floating from input)

Line/Load regulation:

Less than ±1% (no load to full load, -55 °C to +85 °C and over input voltage range)

Ripple and Noise:

50 mV_{p-p}, typical (up to 1% of nominal value)

Current limiting (Hiccup):

Continuous protection for unlimited time

Over-voltage protection:

Passive transorbs on outputs.

Over temperature protection:

Shutdown if baseplate temperature exceeds +105 °C ± 5 °C.

Automatic recovery upon cooldown to below +95 °C ± 5 °C.

Isolation: Output to Case 100 V_{DC}

* EMC Compliance achieved with 5μH LISN, shielded harness and static resistive load. Depending on the actual configuration, an external filter may be required for full compliance

Functions and Signals

INHIBIT

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

TTL "1" or OPEN – Power supply is ON (For normal operation, leave this pin unconnected.) TTL "0" or SHORT to ***SIGNAL RTN*** – Power supply is OFF.

SYNC

The ***SYNC*** signal is used to allow the power supply's switching frequency to sync with the system clock. The external clock's frequency can be 250 kHz \pm 10 kHz.

When this pin is left open (unconnected) the power supply will synchronize to its internal clock, set at 250 kHz \pm 10 kHz

SIGNAL RTN

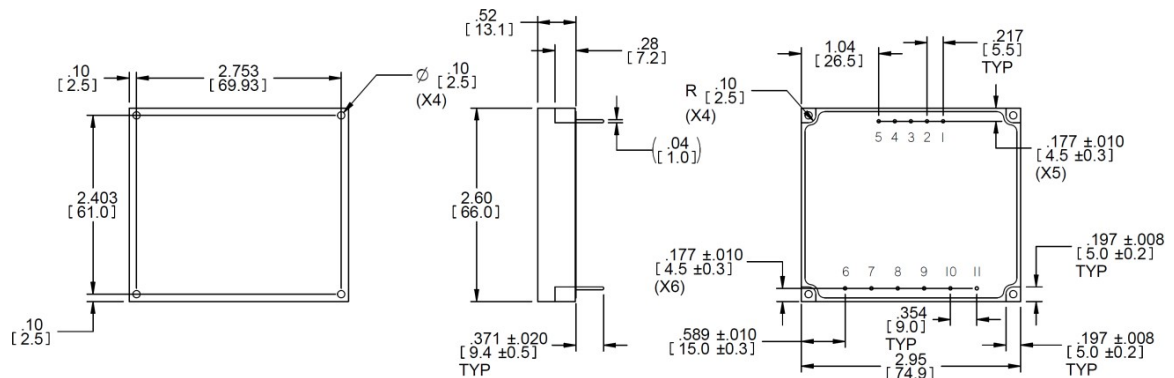
The ***SIGNAL RTN*** is used as a return path for the ***SYNC*** and ***INHIBIT*** signals. This pin is referenced to ***VIN RTN***.

Pin Assignment

| Pin No. | Pin Function |
|---------|-----------------|
| 1 | IN |
| 2 | IN RTN |
| 3 | SYNC |
| 4 | SIGNAL RTN |
| 5 | INHIBIT |
| 6 | OUT 1 |
| 7 | OUT 1 RTN |
| 8 | OUT 4 |
| 9 | OUT 2, 3, 4 RTN |
| 10 | OUT 3 |
| 11 | OUT 2 |

***SIGNAL RTN** is referenced to **IN RTN**.

Outline Drawing



Notes

1. Dimensions are in inches [mm]
2. Tolerance is:
 .XX ± 0.01 in
 .XXX ± 0.005 in
3. Weight: Approx. 3.52 oz [100 g]

Note: Specifications are subject to change without prior notice by the manufacturer