

M8757 Series– DC/DC Power Supply

M8757 SERIES
DC/DC POWER SUPPLY



PRODUCT HIGHLIGHTS

- MINIATURE
- HIGH DENSITY
- RUGGED
- FIVE OUTPUTS
- DC/DC CONVERTER
- UP TO 100W

M8757 Series— DC/DC Power Supply

Applications

Military, Ruggedized, Telecom, Industrial

Special Features

- Miniature size
- High efficiency
- Wide input range
- High density: Up to 15 W/in³
- Input-to-outputs & out-to-out isolation
- Fixed switching frequency (250 kHz)
- Synchronizable to external clock
- Remote inhibit (TTL logic/dry contact)
- EMI filters included
- Indefinite overload & short-circuit protection with auto-recovery
- Over temperature protection (shutdown) with auto-recovery

Environmental Conditions

Meets MIL-STD-810G

- Temperature
 - Operating: -55°C to +85°C (baseplate)
 - Storage: -55°C to +125°C
- Humidity: 95% @ +60°C, 10 cycles
- Low pressure: 69kft @ -30°C/+70°C, 80 min
- Acoustical noise: 141dB, 50Hz-10kHz, 21 min
- Linear acceleration (all axes): 60g, 90 seconds
- Operational Vibration (all axes)
 - Random: 10.45 g_{rms}, 4-2000Hz, 2 hours
- Transportation Vibration
 - Ground: 2.19g_{rms} (all axes), 5-500Hz, 1 hour
 - Air: 0.4g_{rms} (X&Y), 0.79g_{rms} (Z), 10-2000Hz, 75 minutes
- Shock (all axes)
 - Mechanical: 25g, 11msec, half-sine
 - Pyro: 100Hz/100g; 2kHz/600g; 4kHz/600g

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 V_{DC}

Input transient protection

All models meet or exceed (no damage)
MIL-STD-1275A (100V for 50 mSec)
and MIL-STD-704A (80V for 0.1 Sec)

Over/under voltage lockout with auto-recovery
Efficiency: up to 82%

EMC

Meets MIL-STD-461F* CS106, ,CE102
,CS101, CS114, CS115, CS116, RE102
RS103

Isolation

200V between Input to Output
200V between Input to Case

DC OUTPUTS (all floating)

Line/Load regulation

Less than 1% (no load to full load, -55°C to 85°C)

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

Current limiting

(Output 1: hiccup; other outputs: foldback)
Continuous protection for unlimited time

Over voltage protection

Passive, via transorb on outputs

Isolation

100V between Output to Case

Over Temperature Protection

Shutdown temp.: +100° C±5 °.C (at baseplate)
Automatic recovery temp.: +90° C±5 °.C

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

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Pin Assignment – Type 1

Connector type: RM272-040-312-2900 or eq

Mating connector: RM242-040-241-5900 (solder cup), RM242-040-571-5900 (crimp removable) or eq

.Pin No	Function	.Pin No	Function	.Pin No	Function
35 ,34 ,16 ,15	(+) VIN	31 - 28 ,11 - 8	(+) OUT 1	40	(+) OUT 3
33 ,32 ,14 ,13	(-) VIN RTN	27 - 24 ,7 - 4	(-) OUT 1 RTN	20	(-) OUT 3 RTN
36	INHIBIT	12	SENSE 1	1	(+) OUT 4
37	SYNC	23	SENSE 1 RTN	21	(-) OUT 4 RTN
17	SIGNAL RTN	38 ,18	(+) OUT 2	2	(+) OUT 5
22	CHASSIS	39 ,19	(-) OUT 2 RTN	3	(-) OUT 5 RTN

* Signal RTN referenced to VIN RTN

Signals Description– Type 1

INHIBIT

Description: Inhibits all outputs

Use: Apply short circuit or TTL "LOW" to inhibit all outputs

Leave open or apply TTL "HIGH" to enable all outputs

Referenced to: SIGNAL RTN

SYNC

Description: Synchronizes internal switching frequency to system clock. Use

Apply TTL level, 250kHz $\pm$ 10kHz, 50% duty-cycle clock

Leave open if unused. In this case, the switching frequency will be set by the internal clock (~250KHz)

Referenced to: SIGNAL RTN

SENSE 1 & SENSE 1 RTN

Description: Used to achieve accurate voltage regulation for output 1 at load terminal, to compensate for voltage drop across the leads connecting the converter to the load Limited to 0.25V

Use: Connect SENSE line directly to the load's positive terminal, and SENSE RTN directly to the load's negative terminal

If not used, connect SENSE 1 to OUT 1 and SENSE 1 RTN to OUT 1 RTN. Do not leave open

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Pin Assignment - Type 2

Pin No.	Function	Pin No.	Function	Pin No.	Function
13, 14, 33, 34	VIN	8, 9, 10, 28, 29	OUT 1	1, 2	OUT 4
11, 12, 31, 32	VIN RTN	6, 7, 25, 26, 27	OUT 1 RTN	21, 22	OUT 4 RTN
35	INHIBIT 1	16, 36	OUT 2	3, 23	OUT 5
30	INHIBIT 2	17, 37	OUT 2 RTN	4, 24	OUT 5 RTN
15	SIGNAL RTN	38, 39, 40	OUT 3		
5	CHASSIS	18, 19, 20	OUT 3 RTN		

Special Signals Description - Type 2

INHIBIT 1

Description: Inhibits OUT 1.

Use: Apply input voltage between INHIBIT 1 and SIGNAL RTN pins to inhibit selected output. Leave open or short INHIBIT 1 and SIGNAL RTN pins to enable output.

Referenced to: SIGNAL RTN

INHIBIT 2

Description: Inhibits OUT 2.

Use: Apply input voltage between INHIBIT 2 and SIGNAL RTN pins to inhibit selected output. Leave open or short INHIBIT 2 and SIGNAL RTN pins to enable output.

Referenced to: SIGNAL RTN

SIGNAL RTN

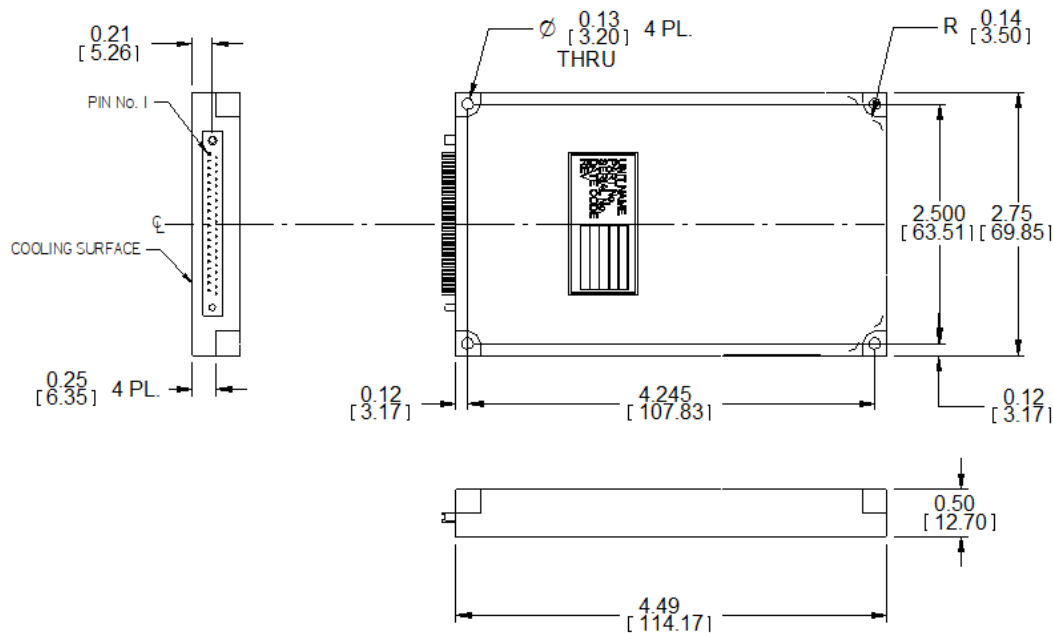
Description: Reference for INHIBIT 1 and INHIBIT 2 signals.

Use: Apply signal between desired pin and this pin to initiate desired action.

Referenced to: This signal is isolated from all rails and returns in the power supply.

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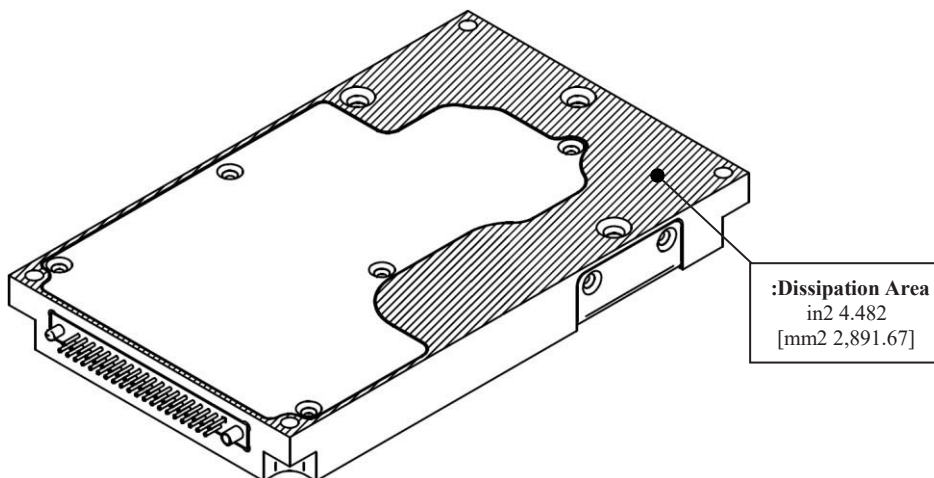
Outline Drawing



Notes

1. Dimensions are in Inches [mm]
2. :Tolerance is
XX.±IN 01.
XXX.±IN 005.
3. Weight: Approx. 13.4 oz (250 g)

Heat Dissipation Area



Specifications are subject to change without prior notice by the manufacturer