M8337 SERIES

DC/DC POWER SUPPLY

PRODUCT HIGHLIGHTS

- MINIATURE
- HIGH DENSITY
- TRIPLE OUTPUT
- DC/DC CONVERTER
- UP TO 125W

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Amphenol
MILITARY HIGH SPEED

M8337 SERIES DC/DC POWER SUPPLY

Applications

Military, Ruggedized, Telecom, Industrial Power Supply

Special Features

- Miniature size
- High efficiency
- Wide input range
- Input / Output isolation
- Fixed switching frequency (250 kHz)
- External synchronization capability
- TTL logic enable
- EMI filters included
- Indefinite short circuit protection with auto-recovery
- Over temperature protection

Environmental Conditions

Designed to meet MIL-STD-810F

Temperature:
Operating –55 °C to +85 °C
(baseplate) Storage –
55 °C to +125 °C

Altitude:
Method 500.4, Procedures I & II up to 70 000 ft. Operational

Humidity:
Method 507.4 - Up to 95% RH (including condensation)

Salt Fog:
Method 509.4

Vibration and Shock:
Shock: Saw-tooth, 20 g peak, 11 ms.
Vibration: Figure 514.5C-17 general minimum integrity exposure (1 hour per axis)

Reliability

150,000 hours, calculated IAW MIL-HDBK-217F Notice 2, at +85 °C baseplate, Ground Fixed.

Electrical Specifications

DC INPUT

Normal voltage range: 18 to 70 V_{DC} Option: 12 to 70 V_{DC} – *consult factory*

Abnormal transient protection:
No damage (may shut down) when exposed to abnormal transients IAW MIL-STD-1275A (100 V for 50 ms) and MIL-STD-704A (80 V for 0.1 s)

Efficiency: up to 80%

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

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

DC OUTPUT (floating)

Line/Load regulation:
Up to ±1% (no load to full load, –55 °C to +85 °C) Ripple and Noise: 50 mV_{p-p}, typical (max. 1%) 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}

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* Compliance achieved with 5µH LISN, shielded harness and static resistive load.

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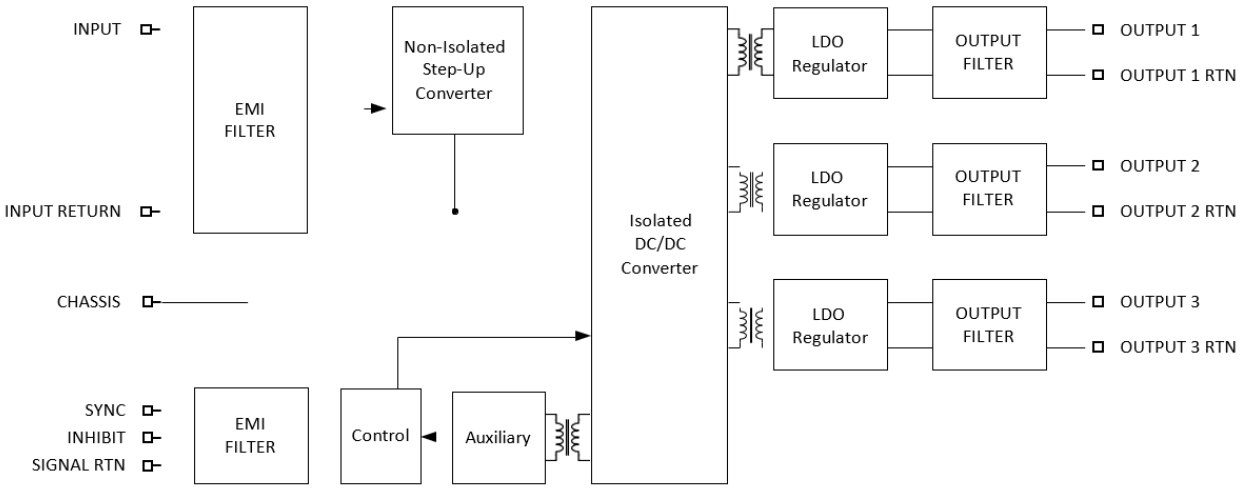
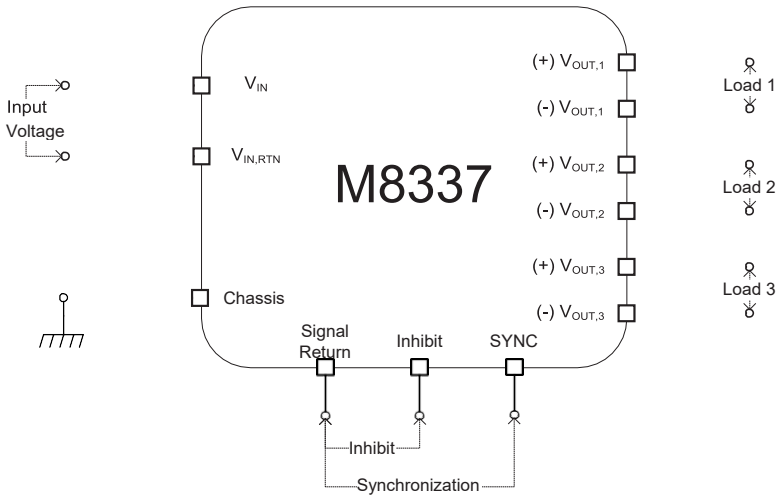
Operational Block Diagram



Outputs Range

Output #	Voltage Range	Current Range	Power Range
1	3.3 to 28 V_{DC}	0 to 10 A	0 to 50 W
2	3.3 to 28 V_{DC}	0 to 6 A	0 to 50 W
3	7 to 28 V_{DC}	0 to 6 A	0 to 50 W
Total			0 to 125 W

Typical Connection Diagram



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*Pin Assignment**

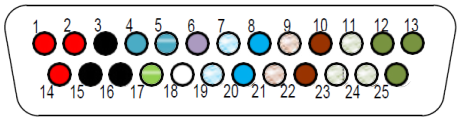
Connector type: M24308/24-39F or eq.

Mates with: M24308/2-3F or eq.

Pin No.	Function
1	VIN (+)
2	VIN (+)
3	VIN RTN (–)
4	INHIBIT
5	SIGNAL RTN
6	SYNC
7	OUT 3 RTN (–)
8	OUT 3 (+)
9	OUT 2 RTN (–)

Pin No.	Function
10	OUT 2 (+)
11	OUT 1 RTN (–)
12	OUT 1 (+)
13	OUT 1 (+)
14	VIN (+)
15	VIN RTN (–)
16	VIN RTN (–)
17	CHASSIS
18	N.C.

Pin No.	Function
19	OUT 3 RTN (–)
20	OUT 3 (+)
21	OUT 2 RTN (–)
22	OUT 2 (+)
23	OUT 1 RTN (–)
24	OUT 1 RTN (–)
25	OUT 1 (+)



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

SIGNAL RTN

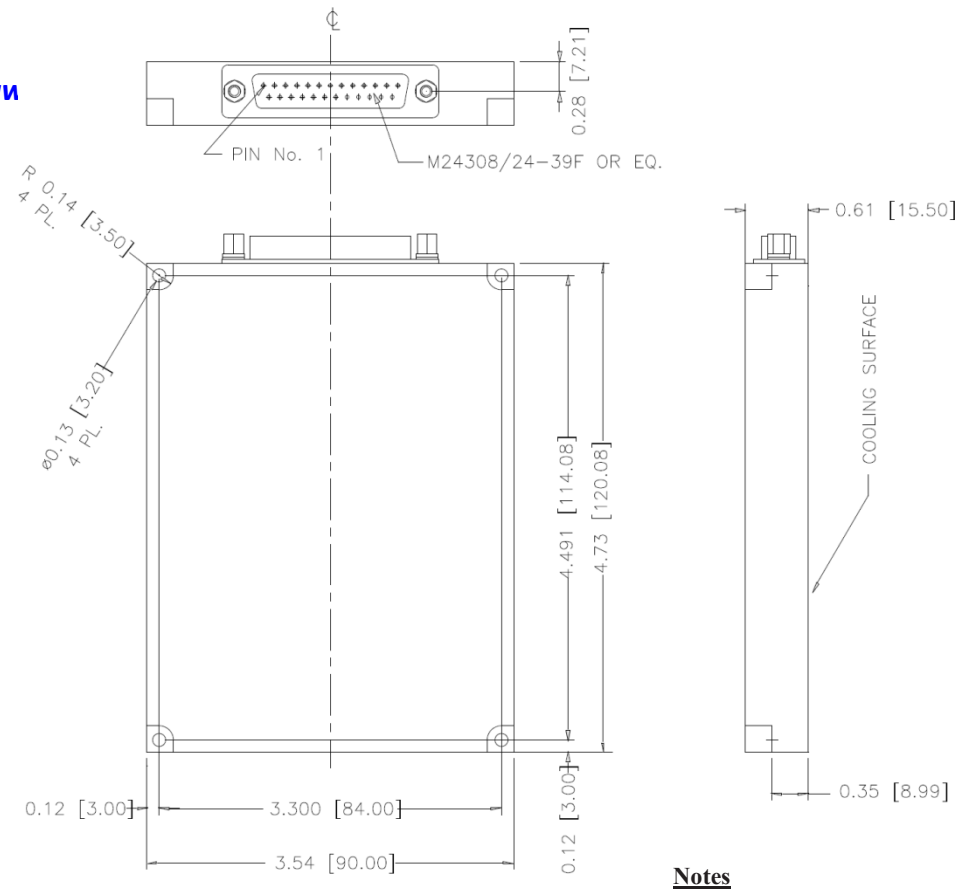
The ***SIGNAL RTN*** is used as a return path for the ***SYNC*** and ***INHIBIT*** signals. This pin is referenced to ***VIN RTN***.

CHASSIS

The ***CHASSIS*** pin is referenced to the device's chassis, to allow simple connection to system chassis.

* For optimal performance, connect all pins with identical designation together.

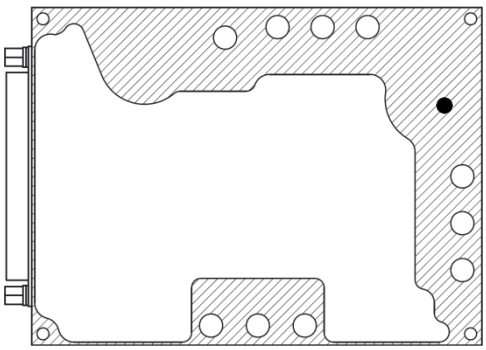
Outline Draw



Notes

1. Dimensions are in inches [mm]
2. Tolerance is:
   .XX ± 0.01 in
   .XXX ± 0.005 in
3. Weight: 13.4 oz [380 g]

Heat Dissipation Surface



Heat Dissipation Area:
6.12 in²
[3,950 mm²]

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Standard Configurations

Part Number	Input	Output #1		Output #2		Output #3	
	Voltage	Voltage	Current	Voltage	Current	Voltage	Current
M8337100	18 to 48 V_{DC}	5 V_{DC}	10 A	3.3 V_{DC}	6 A	12 V_{DC}	4 A
M8337101	18 to 48 V_{DC}	5 V_{DC}	10 A	3.3 V_{DC}	6 A	28 V_{DC}	1.7 A
M8337102	18 to 48 V_{DC}	5 V_{DC}	6 A	15 V_{DC}	3 A	15 V_{DC}	3 A
M8337103	18 to 48 V_{DC}	5 V_{DC}	6 A	12 V_{DC}	4 A	12 V_{DC}	4 A
M8337104	18 to 48 V_{DC}	15 V_{DC}	3.2 A	15 V_{DC}	3.2 A	5 V_{DC}	1.25 A

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

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