

## M8337 SERIES

*DC/DC POWER SUPPLY*



### PRODUCT HIGHLIGHTS

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

### **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  
70000 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<sub>DC</sub> Option: 12 to 70 V<sub>DC</sub>–  
*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<sub>DC</sub> Input to  
Case: 200 V<sub>DC</sub>

#### DC OUTPUT (floating)

#### Line/Load regulation:

Up to ±1% (no load to full load, –55 °C to  
+85 °C) Ripple and Noise: 50 mV<sub>p-p</sub>, 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.

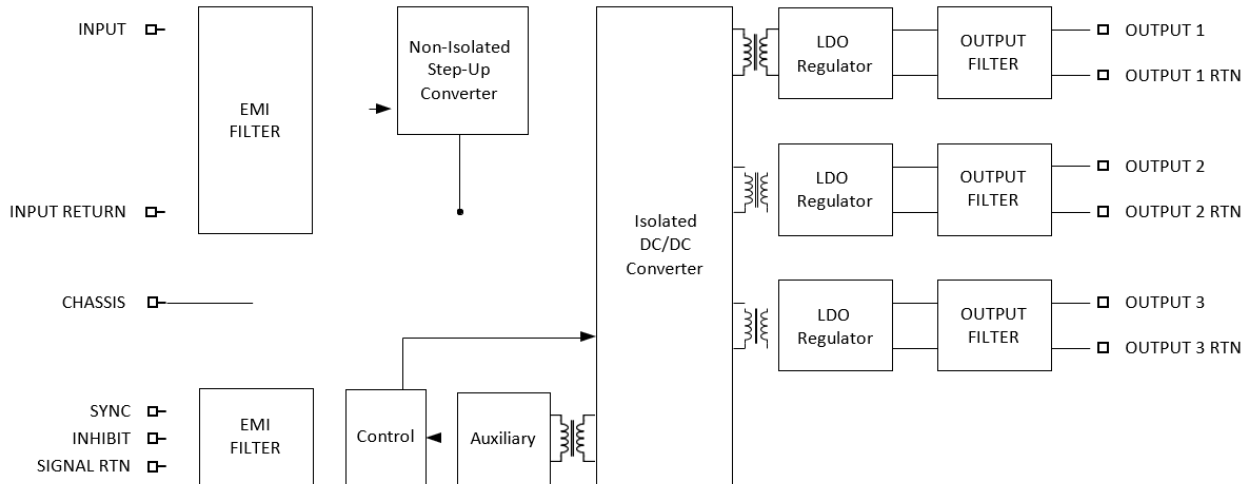
#### Isolation:

Output to Case: 100 V<sub>DC</sub>

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

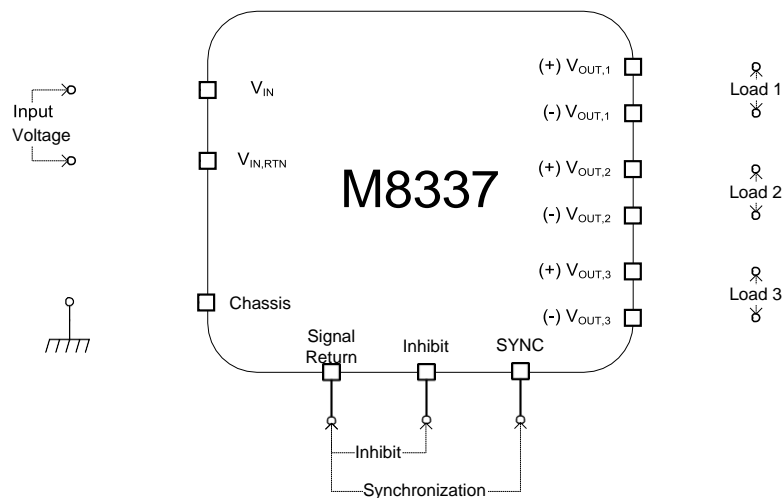
## Operational Block Diagram



## Outputs Range

Output #	Voltage Range	Current Range	Power Range
1	3.3 to 28 V <sub>DC</sub>	0 to 10 A	0 to 50 W
2	3.3 to 28 V <sub>DC</sub>	0 to 6 A	0 to 50 W
3	7 to 28 V <sub>DC</sub>	0 to 6 A	0 to 50 W
<b>Total</b>			<b>0 to 125 W</b>

## Typical Connection Diagram



## Pin Assignment\*

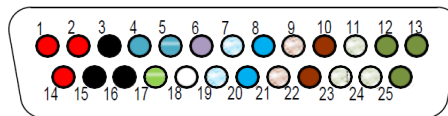
**Connector type:** M24308/24-39F or eq.

**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**.

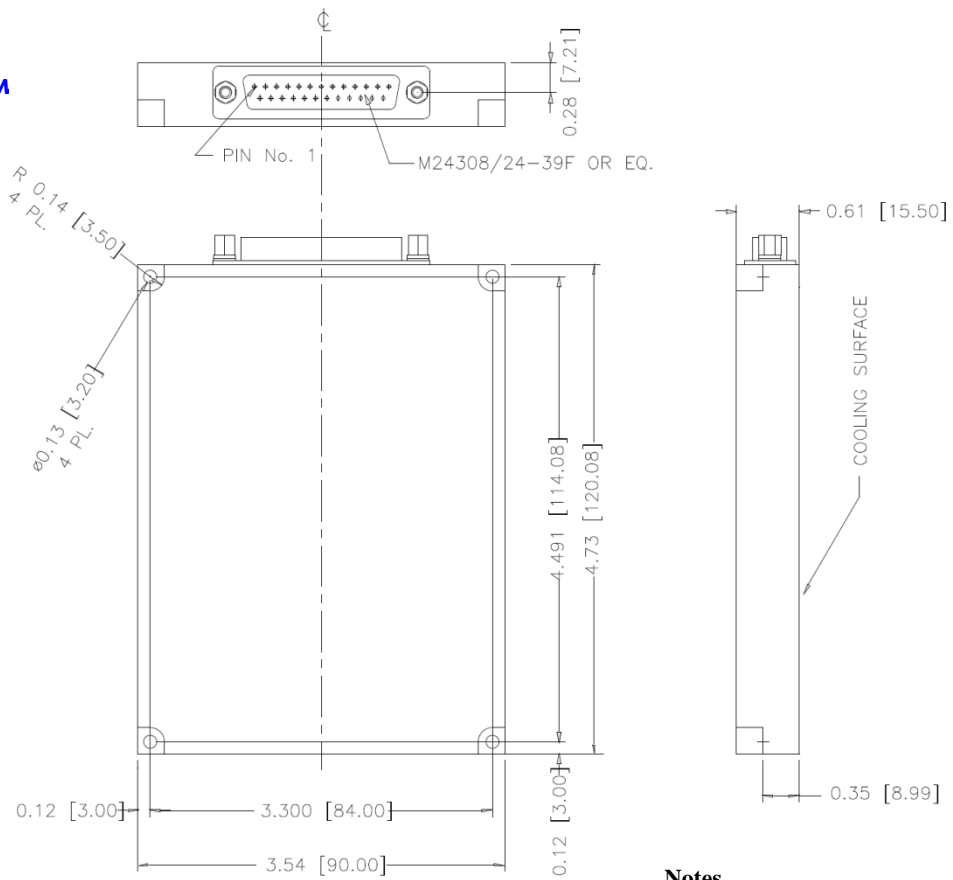
### CHASSIS

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.

**M8337 SERIES DC/DC POWER SUPPLY**

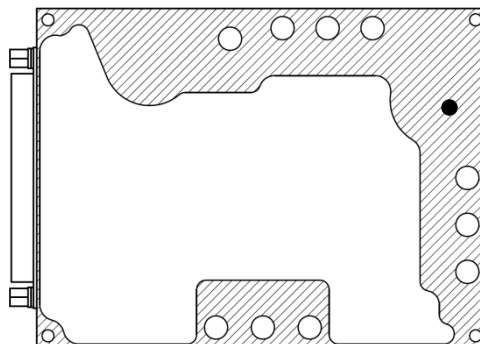
**Outline Draw**



**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 in<sup>2</sup>  
[3,950 mm<sup>2</sup>]

*Standard Configurations*

Part Number	Input	Output #1		Output #2		Output #3	
	Voltage	Voltage	Current	Voltage	Current	Voltage	Current
M8337-100	18 to 48 V <sub>DC</sub>	5 V <sub>DC</sub>	10 A	3.3 V <sub>DC</sub>	6 A	12 V <sub>DC</sub>	4 A
M8337-101	18 to 48 V <sub>DC</sub>	5 V <sub>DC</sub>	10 A	3.3 V <sub>DC</sub>	6 A	28 V <sub>DC</sub>	1.7 A
M8337-102	18 to 48 V <sub>DC</sub>	5 V <sub>DC</sub>	6 A	15 V <sub>DC</sub>	3 A	15 V <sub>DC</sub>	3 A
M8337-103	18 to 48 V <sub>DC</sub>	5 V <sub>DC</sub>	6 A	12 V <sub>DC</sub>	4 A	12 V <sub>DC</sub>	4 A
M8337-104	18 to 48 V <sub>DC</sub>	15 V <sub>DC</sub>	3.2 A	15 V <sub>DC</sub>	3.2 A	5 V <sub>DC</sub>	1.25 A

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