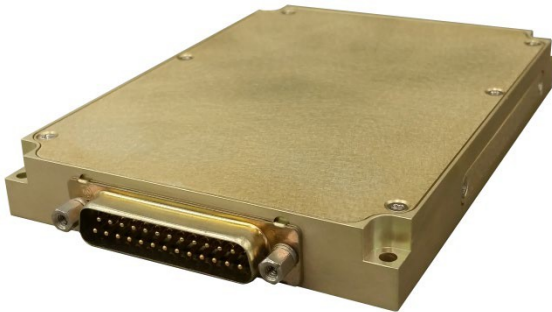


## M8337 SERIES

*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  $-55\text{ }^{\circ}\text{C}$  to  $+85\text{ }^{\circ}\text{C}$   
(baseplate) Storage  $-$   
 $55\text{ }^{\circ}\text{C}$  to  $+125\text{ }^{\circ}\text{C}$

### 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  $+85\text{ }^{\circ}\text{C}$  baseplate,  
Ground Fixed.

## Electrical Specifications

### DC INPUT

Normal voltage range: 18 to  
 $70\text{ V}_{\text{DC}}$  Option: 12 to  $70\text{ V}_{\text{DC}}$ —  
*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:  
 $200\text{ V}_{\text{DC}}$  Input to  
Case:  $200\text{ V}_{\text{DC}}$

### DC OUTPUT (floating)

#### Line/Load regulation:

Up to  $\pm 1\%$  (no load to full load,  $-55\text{ }^{\circ}\text{C}$  to

$+85\text{ }^{\circ}\text{C}$ ) 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  
 $+105\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$ ; Automatic recovery  
upon cooldown to below  $+95\text{ }^{\circ}\text{C} \pm$   
 $5\text{ }^{\circ}\text{C}$ .

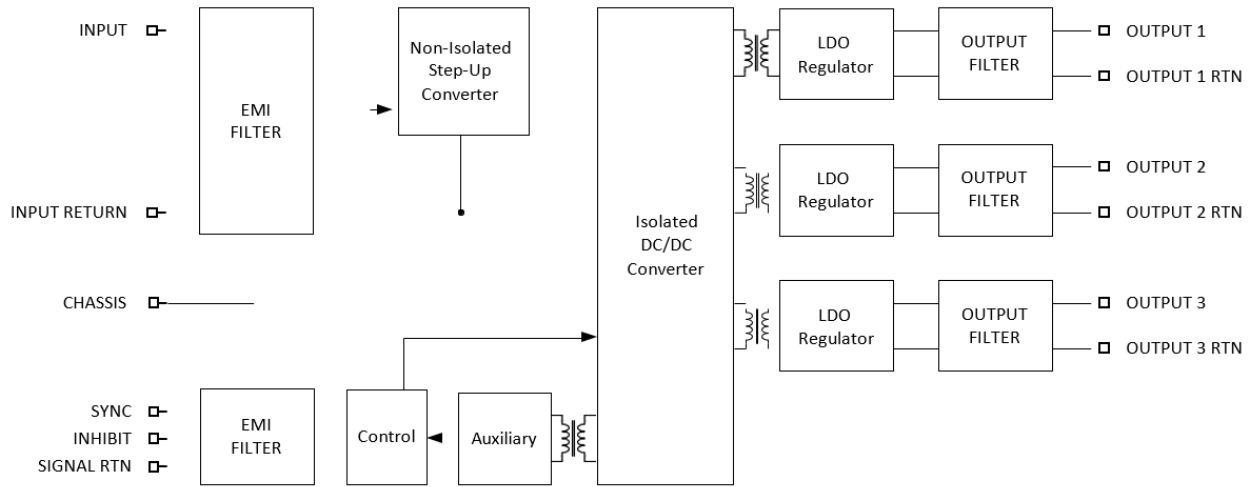
### Isolation:

Output to Case:  $100\text{ V}_{\text{DC}}$

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\* Compliance achieved with  $5\mu\text{H}$   
LISN, shielded harness and static resistive  
load.

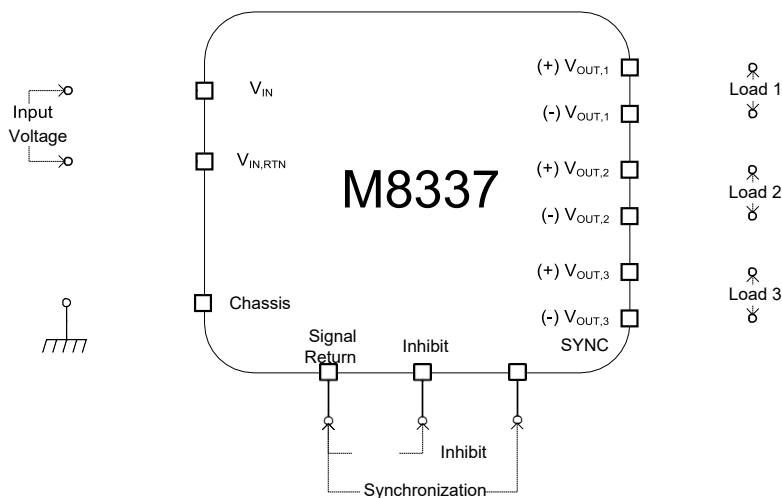
**Operational Block Diagram**



**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>			0 to 125 W

**Typical Connection Diagram**



**Pin Assignment\***

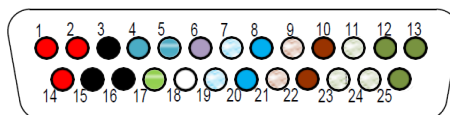
Connector type: M24308/24-39F or eq.

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**

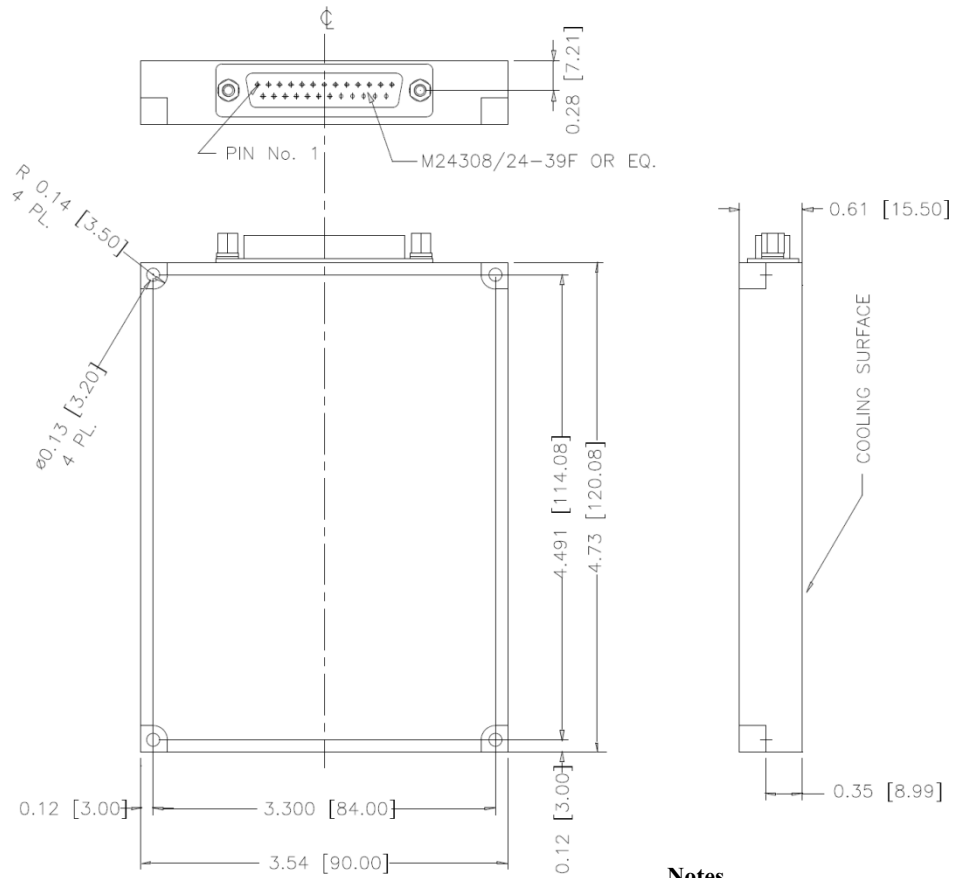
The **SIGNAL RTN** is used as a return path for the **SYNC** and **INHIBIT** signals. This pin is referenced to **VIN RTN**.

**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.

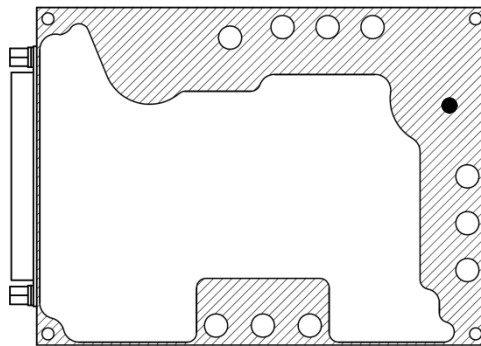
**Outline Drawing**



**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**



<p><b>Heat Dissipation Area:</b>                  6.12 in<sup>2</sup>                  [3,950 mm<sup>2</sup>]</p>
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*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***