

## M8337 SERIES

*DC/DC POWER SUPPLY*



### PRODUCT HIGHLIGHTS

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

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

#### 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  $+85^{\circ}\text{C}$  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,  $-55^{\circ}\text{C}$  to  
 $+85^{\circ}\text{C}$ ) 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  
 $+105^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ; Automatic recovery  
upon cooldown to below  $+95^{\circ}\text{C} \pm$   
 $5^{\circ}\text{C}$ .

#### Isolation:

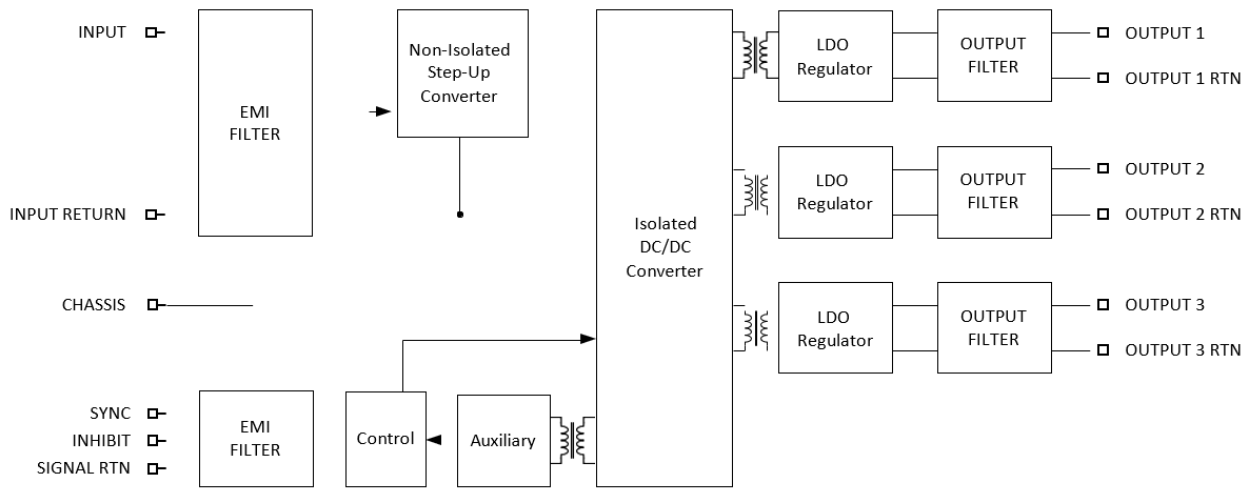
Output to Case:  $100\text{ V}_{\text{DC}}$

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

# M8337 SERIES DC/DC POWER SUPPLY

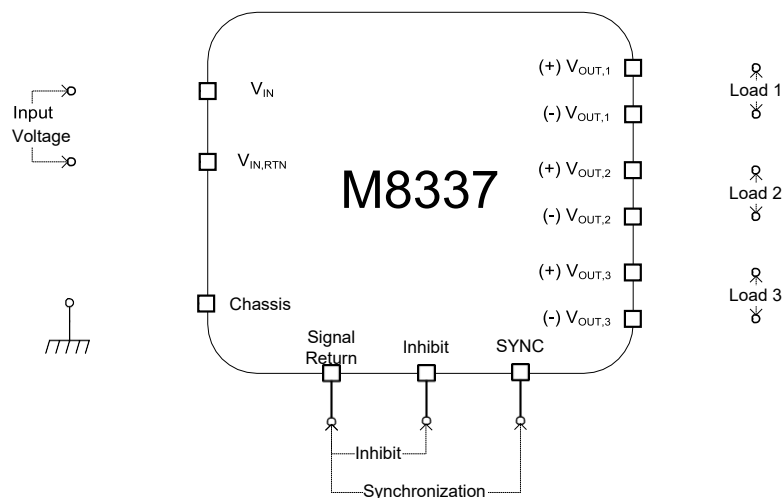
## Operational Block Diagram



## 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



## M8337 SERIES DC/DC POWER SUPPLY

### Pin Assignment\*

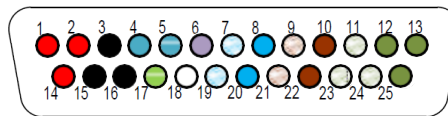
**Connector type:** M24308/24-39F or eq.

**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  $\pm$  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**.

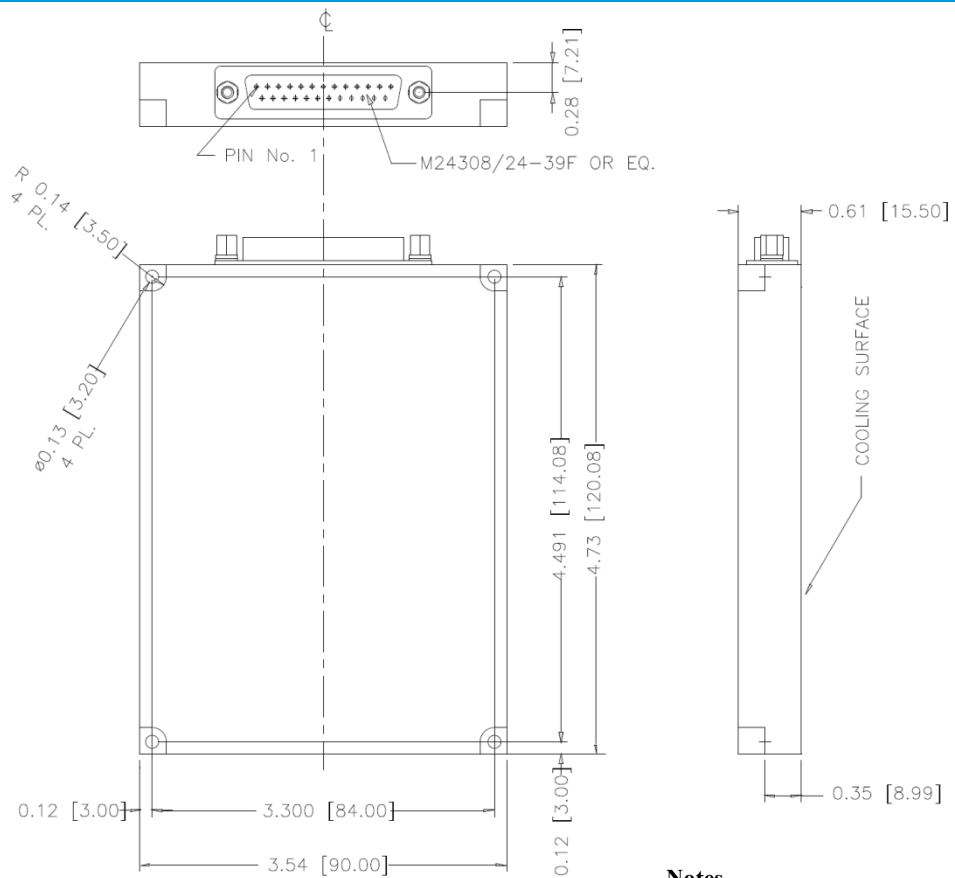
#### CHASSIS

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**

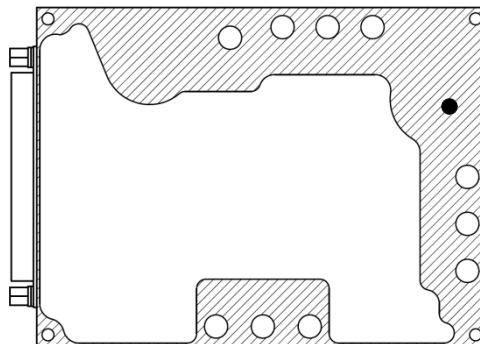
**Outline Drawing**



**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**



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

## M8337 SERIES DC/DC POWER SUPPLY

### 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*