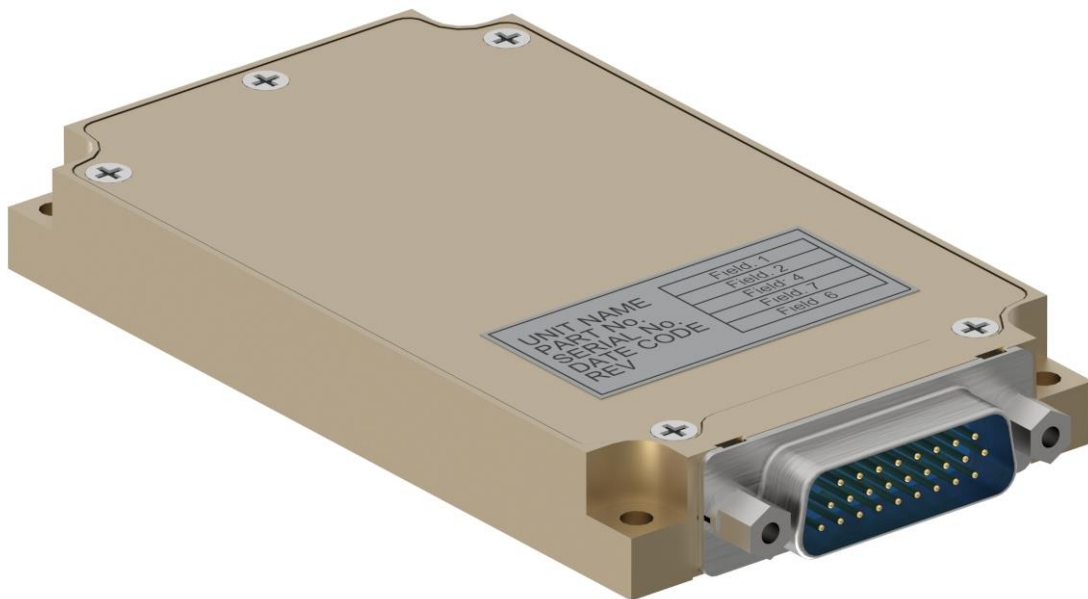


# M8349 SERIES

## FOUR-OUTPUTS, 60W DC TO DC POWER SUPPLY

The M8349 is a series of mechanically robust, base-plate cooled, high performance, power supplies, designed for Ground Mobile (MIL-STD-1275), Airborne (MIL-STD-704) and other Hi-Reliability applications where 28VDC has to be converted to a tightly regulated, filtered and protected DC output.



## M8349 Series— DC/DC Power Supply

**Standard Models List** (for other voltages – consult factory)

Part number	Input	Output 1		Output 2		Output 3		Output 4	
	Voltage range	Voltage	Current	Voltage	Current	Voltage	Current	Voltage	Current
M8349-101	18 to 48 V <sub>DC</sub>	N.C	N.C	12 V <sub>DC</sub>	3A	5 V <sub>DC</sub>	3 A	12 V <sub>DC</sub>	1A

- \*tolerance at output #3 up to  $\pm 2\%$  of nominal voltage, peak-to-peak.
- Additional standard configurations available. **Contact factory for more details.**
- All of our products can be configured to comply with EU REACH regulations. **Contact factory for more details.**

## M8349 Series– DC/DC Power Supply

### THE MAIN FEATURES OF THE M8349 ARE:

- DC/DC Four outputs power supply up to 60W
- 18 to 48VDC Standard Input version
- For extended input version - **Please contact factory for more details**
- No damage (may shutdown) due to abnormal transients IAW MIL-STD-1275A (100 V / 50 ms) and MIL-STD-704A (80 V / 0.1 s)
- High efficiency – up to 80% (depending on output voltage).
- Full galvanic isolation between Input, Chassis and Outputs
- External Inhibit (On/Off)
- Fixed switching freq. (250 kHz)
- EMI filters included
- Indefinite short circuit protection with auto-recovery
- Over-voltage protection
- Over temperature shutdown with auto-recovery
- High density
- Conduction cooled via the baseplate
- J-STD-001B and IPC-610A Class-3 workmanship
- Conformal Coating per MIL-I-46058C and IPC-CC-830

## M8349 Series– DC/DC Power Supply

### SPECIFICATIONS:

<b>DC Input</b>	<b><i>Voltage Range</i></b>	Normal range: 18 to 48 V <sub>DC</sub> No damage (may shutdown) due to abnormal transients IAW MIL-STD-1275A (100 V / 50 ms) and MIL-STD-704A (80 V / 0.1 s)  For extended input version - Please contact factory for more details
	<b><i>Isolation</i></b>	Input to Output: 200 VDC Input to Case: 200 VDC
	<b><i>Over and under protection</i></b>	Vin high from 50-52V P.S.S.D Vin low from 16-17 P.S.S.D
<b>DC Output</b>	<b><i>Rating</i></b>	See table on page 8
	<b><i>Voltage Regulation</i></b>	Better than or equal to $\pm 1\%$ * (low to high line voltage, no load to full load, $-55^{\circ}\text{C}$ to $+85^{\circ}\text{C}$ at baseplate).
	<b><i>Ripple</i></b>	Less than 50 mVp-p, typical (max. 1% of output voltage)
	<b><i>Isolation</i></b>	Output to Case: 100 VDC
	<b><i>Current Limit &amp; Overload</i></b>	Continuous protection for unlimited time Overload/short-circuit  *If output current is higher than 1.5A and there is short due to failure, when the failure is removed the load will be 50%.
	<b><i>Efficiency</i></b>	Up to 80%, depending on output voltage.
	<b><i>Overvoltage Protection</i></b>	Passive transorb, chosen at $120\% \pm 10\%$ of nominal voltage.
	<b><i>Over Temp. Protection</i></b>	Shutdown if base plate temperature rises above $+105^{\circ}\text{C} \pm 5^{\circ}\text{C}$ . Auto recovery when baseplate cools down to $+95^{\circ}\text{C} \pm 5^{\circ}\text{C}$ .

\*For 5V/3.3V/2.5V in current more then 1A tolerance will be  $\pm 2\%$

## M8349 Series– DC/DC Power Supply

### Specifications (Cont.):

<b>Control &amp; Indication</b>	<b><i>INHIBIT Input</i></b>	The INHIBIT signal is used to turn the power supply ON and OFF. TTL “1” or OPEN – Power supply active (output turned on). TTL “0” or SHORT to Signal RTN – Power supply inhibited (output turned off). If this function is not required, leave this pin unconnected. This signal is referenced to SIGNAL RTN (pin 17)
	<b><i>SIGNAL RTN</i></b>	INHIBIT and SYNC signals are referenced to this pin. This pin is referenced to VIN RTN (pins 5,14,15,23 and 24).
	<b><i>SYNC</i></b>	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
<b>Environment Designed to meet MIL-STD-810F</b>	<b><i>Temperature</i></b>	Methods 501.4 & 502.4 Operating: –55 °C to +85 °C (at baseplate) Storage: –55 °C to +125 °C (ambient)
	<b><i>Humidity</i></b>	Method 507.4 Up to 95% RH
	<b><i>Salt-fog</i></b>	Method 509.4
	<b><i>Altitude</i></b>	Method 500.4 Procedures I – Storage/Air transport: up to 70,000 ft. (non-operational) Procedure II – Operation/Air Carriage: up to 70,000 ft. (operational)
	<b><i>Mechanical Shock</i></b>	Method 516.5 Procedure I 50 g / 11 ms terminal peak half-sine shock pulse
	<b><i>Vibration</i></b>	Method 514.5 Procedure I 14.76 g <sub>rms</sub> 20-2000 Hz for 500 seconds at each of 3 perpendicular axes.
	<b><i>Fungus</i></b>	Does not support fungus growth, in accordance with the guidelines of MIL-STD-454, Requirement 4-

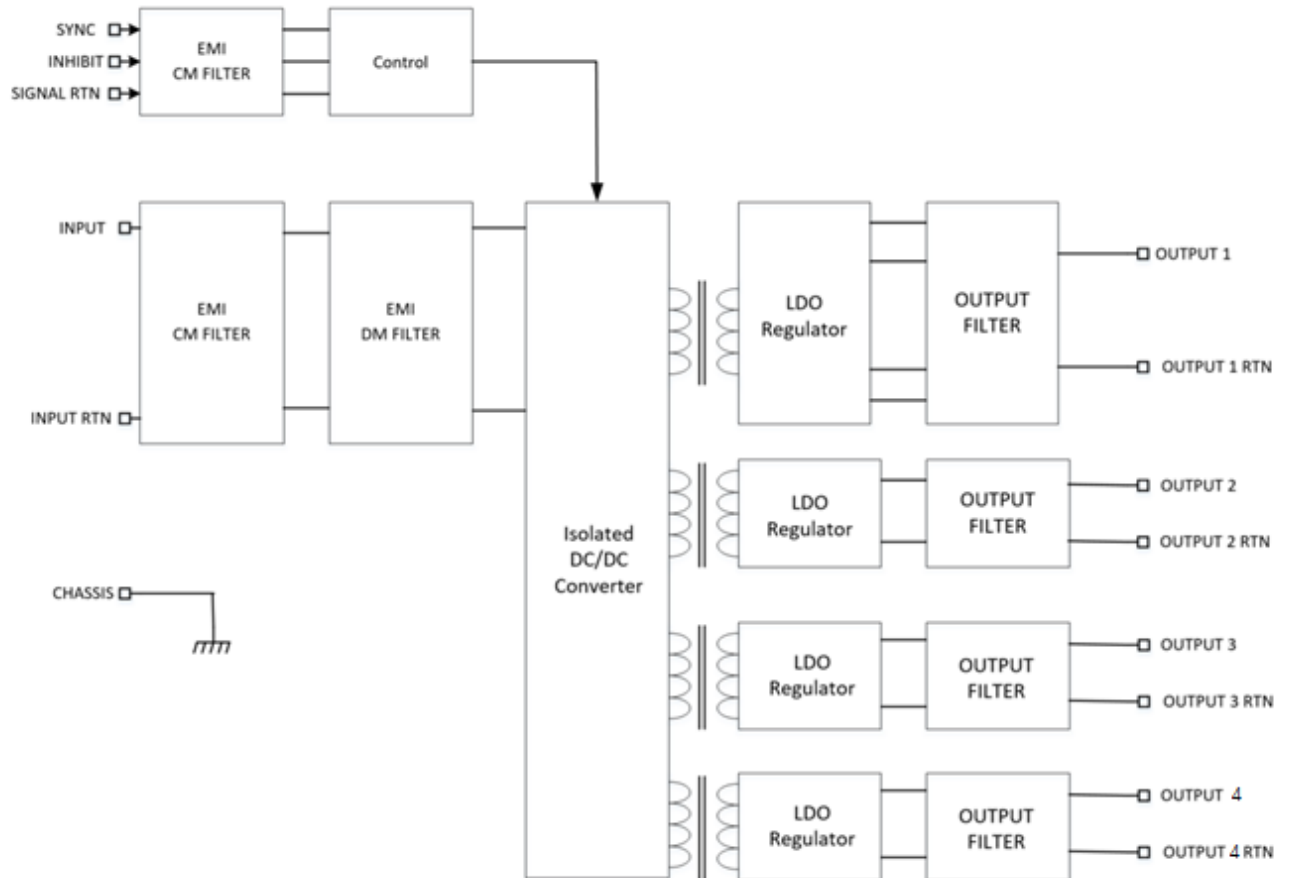
## M8349 Series– DC/DC Power Supply

<b>EMI</b>	<i>MIL-STD-461F</i>	Designed to meet* MIL-STD-461F CE101, CE102, CS101, CS114, CS115, CS116, RE101, RE102, RS101, RS103
<b>Reliability</b>	150,000 hours, calculated per MIL-HDBK-217F Notice 2 at +85 °C baseplate, Ground Fix conditions.	
<b>Cooling Requirements</b>	The M8349 is a baseplate cooled unit. The base of the M8349 should be thermally attached to suitable heatsink that maintains it below +85 °C.	
<b>Form factor</b>	2.16" wide, 0.5" high and 3.65" deep. For detailed dimensions and tolerances see Drawing: M8349001	
<b>Weight</b>	TBD	
<b>Connectors</b>	See Page 8	

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

## M8349 Series– DC/DC Power Supply

### OPERATIONAL BLOCK DIAGRAM



## M8349 Series– DC/DC Power Supply

### PIN ASSIGNMENT:

**Connector type:** M24308/24-74F OR EQ

**Mates with:** M24308/2-12F OR EQ

Name	Pin No.
OUT 1	10, 11
OUT 1 RTN	19, 20
OUT 2	25, 26
OUT 2 RTN	8, 9
OUT 3	2
OUT 3 RTN	1
OUT 4	7
OUT 4 RTN	6
VIN	3, 4, 13 ,21 22
VIN RTN	5, 14, 15, 23, 24
INHIBIT	18
STNC	16
SIGNAL RTN	17

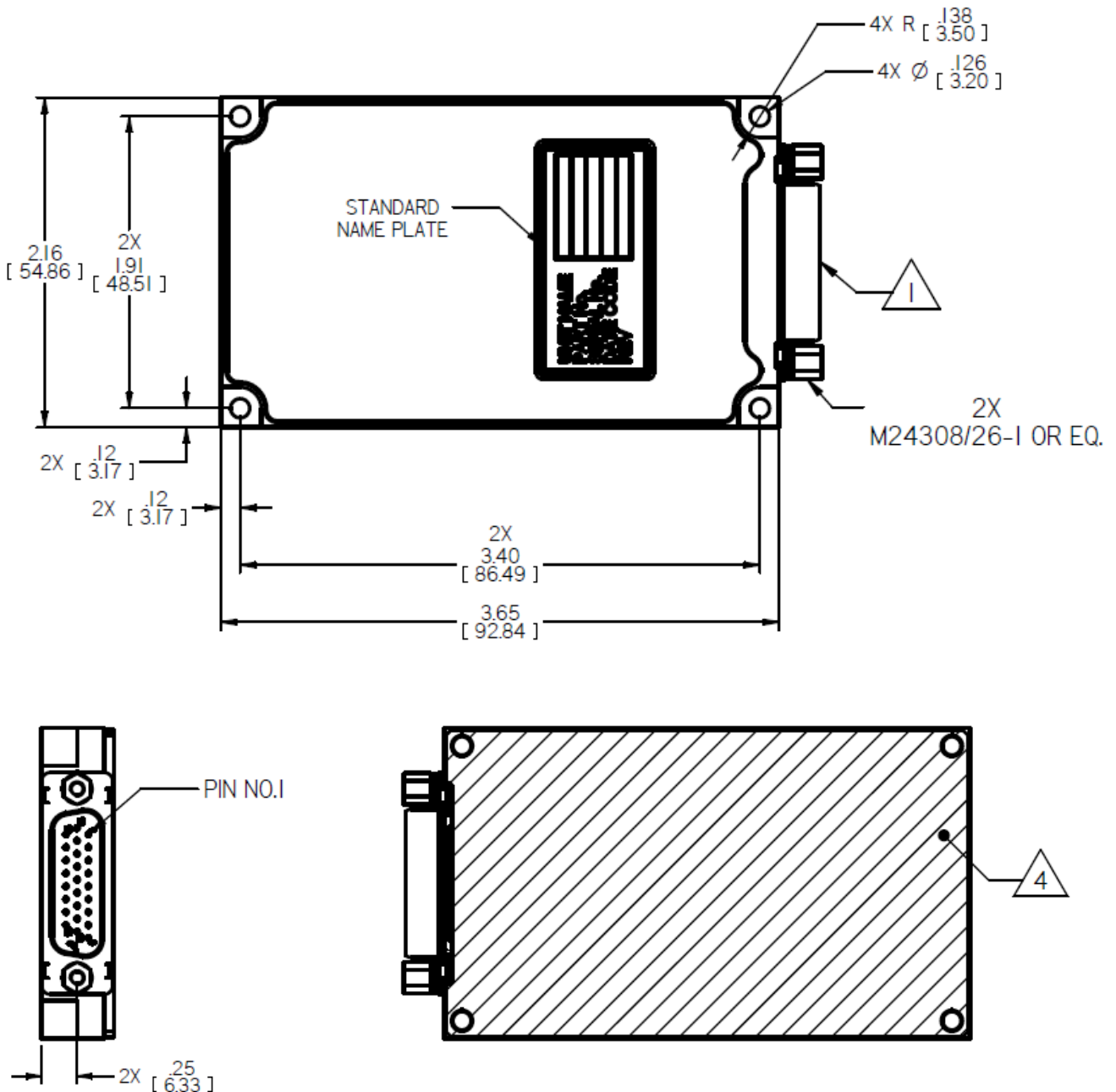
**Note:** All pins with identical function/designation should be connected together for optimal performance.



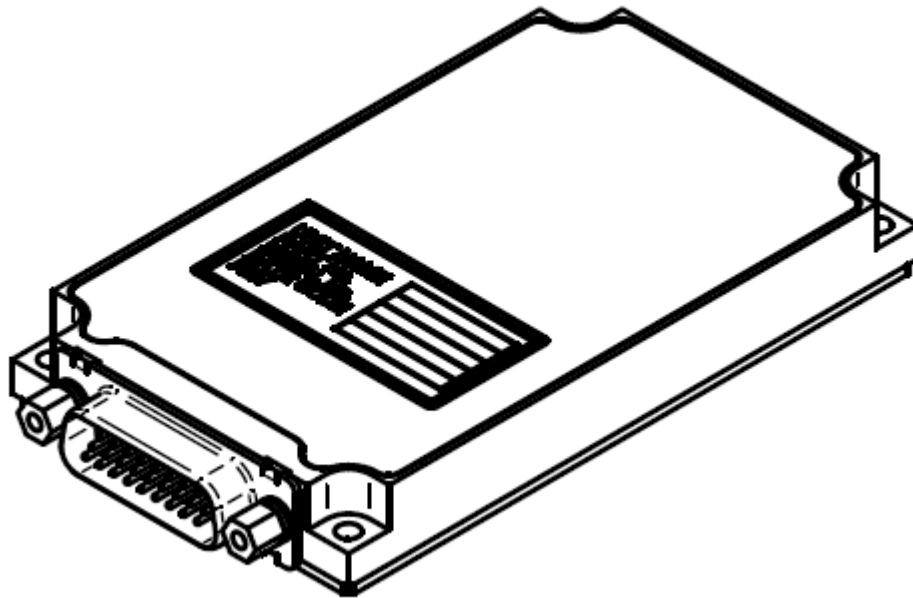
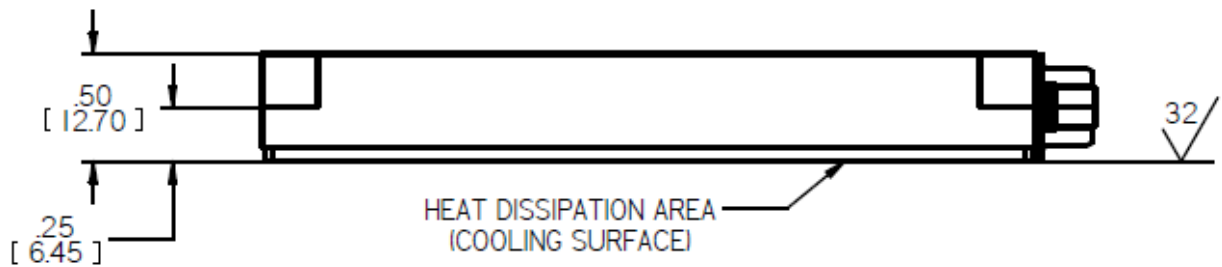
## M8349 Series— DC/DC Power Supply

### OUTLINE DRAWING:

For detailed dimensions and tolerances see Drawing: M8349101



## M8349 Series– DC/DC Power Supply



### NOTES :

1. CONNECTOR: INPUT/OUTPUT, D- TYPE, DD SERIES, 3 LINES, 26P, P/N DD26M4000C OR EQ.
2. MTL AL 6061-T65I, AL 5052-H32.
3. FINISH: CHROMATE CONVERSION COATING PER MIL -DTL-554I, LAST REVISION, TYPE I, CLASS IA, OR EQ.
4. COOLING: HEAT DISSIPATION AREA- 7.405 [IN<sup>2</sup>].
5. WORKMANSHIP SHALL BE MIL-STD-454, REQ. 9.

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