

## **M641 SERIES**

*DC/DC POWER SUPPLY*



### **PRODUCT HIGHLIGHTS**

- **MINIATURE, HIGH DENSITY**
- **NINE OUTPUTS**
- **UP TO 250 W**
- **DC/DC POWER SUPPLY**

## M641 SERIES DC/DC POWER SUPPLY

### APPLICATIONS

Military, Ruggedized, Telecom, Industrial

### SPECIAL FEATURES

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

### ENVIRONMENTAL

Meets or exceeds MIL-STD-810D

Temperature:

Operating  $-55^{\circ}\text{C}$  to  $+90^{\circ}\text{C}$  (baseplate) Storage  
 $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$

### RELIABILITY

150,000 hours, calculated per

MIL-STD-217F at  $+85^{\circ}\text{C}$  baseplate, ground fixed.

### ELECTRICAL SPECIFICATIONS

#### DC INPUT

DC Input range: 18 to 70 VDC Input transient protection:  
All models meet or exceed (no damage)  
MIL-STD-1275A (100V for 50 mSec) and  
MIL-STD-704A, MIL-STD-704D (80V for 0.1 Sec)

Efficiency: up to 80% EMC:

Designed to meet MIL-STD-461F\*

CE101, CE102, CS101, CS114, CS115, CS116, RE101,  
RE102, RS101, RS103

Isolation:

200V between Input and Output 200V between Input and  
Case

#### DC OUTPUT (floating)

Line/Load regulation:

Less than 1% (no load to full load,  $-55^{\circ}\text{C}$  to  $+90^{\circ}\text{C}$ )

Ripple and Noise: 50mVp-p, typical (max. 1%) Current

limiting (Hiccup):

Continuous protection for unlimited time

Over voltage protection:

Passive transorb on outputs.

Over temperature protection:

Shutdown at baseplate temperature of  $+105^{\circ}\text{C}$  ( $\pm 5^{\circ}\text{C}$ )

Automatic recovery at baseplate temperature lower than  
 $+95^{\circ}\text{C}$  ( $\pm 5^{\circ}\text{C}$ )

Isolation:

200V between Output and Input 100V between Output  
and Case

\* EMC compliance achieved when tested with 5  $\mu\text{H}$  LISNs,  
shielded harness and static resistive load.

## 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  $250 \text{ kHz} \pm 10 \text{ kHz}$ .

When this pin is left open (unconnected) the power supply will synchronize to its internal clock, set at  $250 \text{ kHz} \pm 10 \text{ kHz}$

### **SIGNAL RTN**

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

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### SELECTION GUIDE

Models	Regulation	Ripple (20MHz BW)
All	± 1%	50 mVp-p

Model	Input	Output #1	Output #2	Output #3	Output #4	Output #5	Output #6	Output #7	Output #8	Output #9
M641-1	18 to 70 VDC	+5V/5A	+16.5V/1A	+15V/2A	-15V/2A	+18V/0.7A	-18V/0.7A	+30V/1A	+45V/0.6A	-45V/0.6A

Note: other voltages and currents are available, consult factory.

### PIN ASSIGNMENT (Upper Panel Connector)

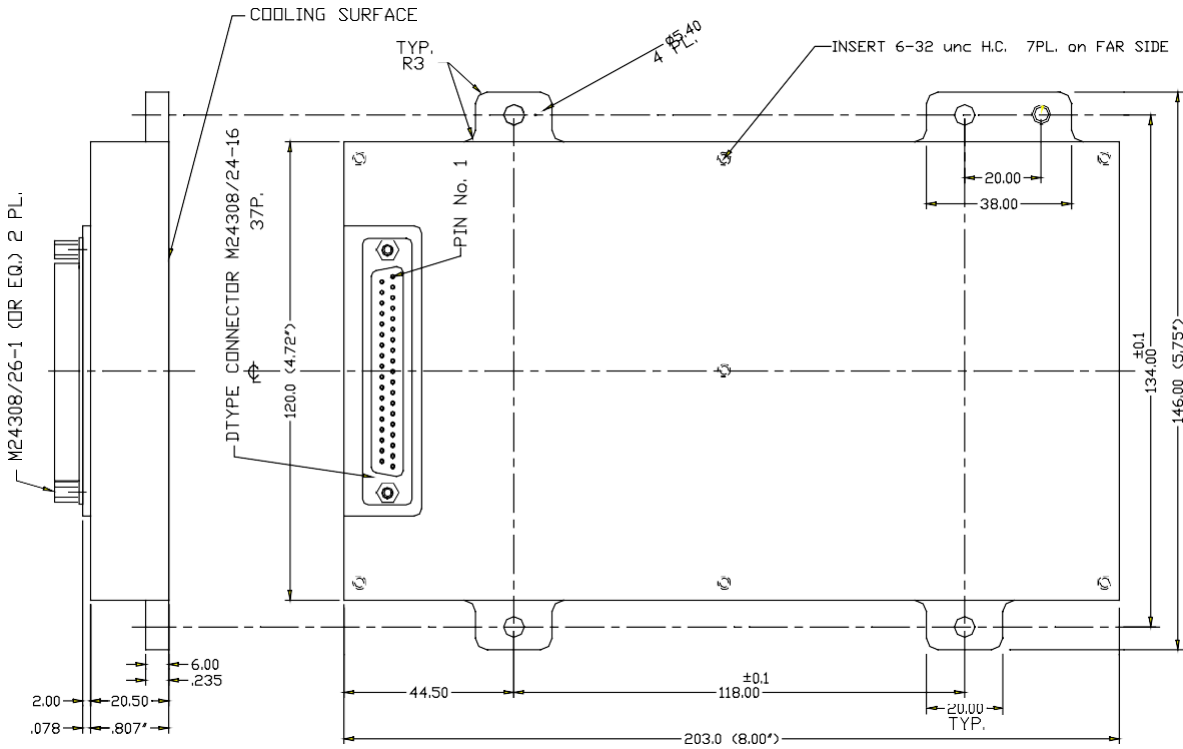
PIN No.	PIN Function
1	+ OUT 1
2	- OUT 1
3	- OUT 2
4	+ OUT 2
5	+ OUT 9
6	+ OUT 8
7	- OUT 8
8	- OUT 5
9	+ OUT 6
10	- OUT 4

PIN No.	PIN Function
11	+ OUT 4
12	+ OUT 3
13	- OUT 3
14	+ VIN
15	+ VIN
16	+ VIN
17	- VIN
18	- VIN
19	- VIN
20	+ OUT 1

PIN No.	PIN Function	PIN No.	PIN Function
21	- OUT 1	31	- SIGNAL
22	OUT 1 - SENSE	32	+ VIN
23	OUT 1 +SENSE	33	+ VIN
24	- OUT 9	34	+ VIN
25	+ OUT 7	35	- VIN
26	+ OUT 5	36	- VIN
27	- OUT 6	37	- VIN
28	- OUT 7		
29	INHIBIT		
30	SYN INPUT		

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**OUTLINE DRAWING**



**Notes**

1. Dimensions are in Inches [mm]
2. Tolerance is:  
.XX ±.02 IN  
.XXX ±.01 IN
3. Weight: 39.5 oz (1120 g)

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