

M641 SERIES

DC/DC POWER SUPPLY



PRODUCT HIGHLIGHTS

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

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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°C to $+90^{\circ}\text{C}$ (baseplate)

Storage -55°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°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 μH 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 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**.

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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		

