Amphenol
MILITARY HIGH SPEED

M635 SERIES

DC/DC POWER SUPPLY



PRODUCT HIGHLIGHTS

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

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M635 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: –55C to +85°C (baseplate) Storage: –55C to +125°C

RELIABILITY
150,000 hours, calculated per
MIL-STD-217F at +85°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 75%

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 +85°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°C (±5°C)
Automatic recovery at baseplate temperature lower than +95°C (±5°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.

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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***.

SELECTION GUIDE

Model	Input	Regulation (Typical)	Ripple (20 MHz BW)
M635-1	18 to 70 VDC	± 1% / ± 2%	50/100 mVp-p
M635-2	18 to 70 VDC	± 1% / ± 2%	50/100 mVp-p
M635-3	18 to 70 VDC	± 1% / ± 2%	50/100 mVp-p

Model	Output #1	Output #2	Output #3	Output #4
M635-1	+5V/5A	+16.5V/1A	+15V/2A	-15V/2A
M635-2	+3.3V/3.7A	+5V/1A	+15V/2A	+12V/1.3A
M635-3	+12V/4.5A	-15V/0.3A	-12V/3.5A	+15V/0.3A

Model	Output #5	Output #6	Output #7	Output #8	Output #9
M635-1	+18V/0.7A	-18V/0.7A	+30V/1A	+45V/0.6A	-45V/0.6A
M635-2	-12V/1.3A	+15V/0.15A	-15V/0.15A	+5V/1A	N.C.
M635-3	+28V/2.8A	-5V/0.3A	N.C.	N.C.	N.C.

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

PIN ASSIGNMENT

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

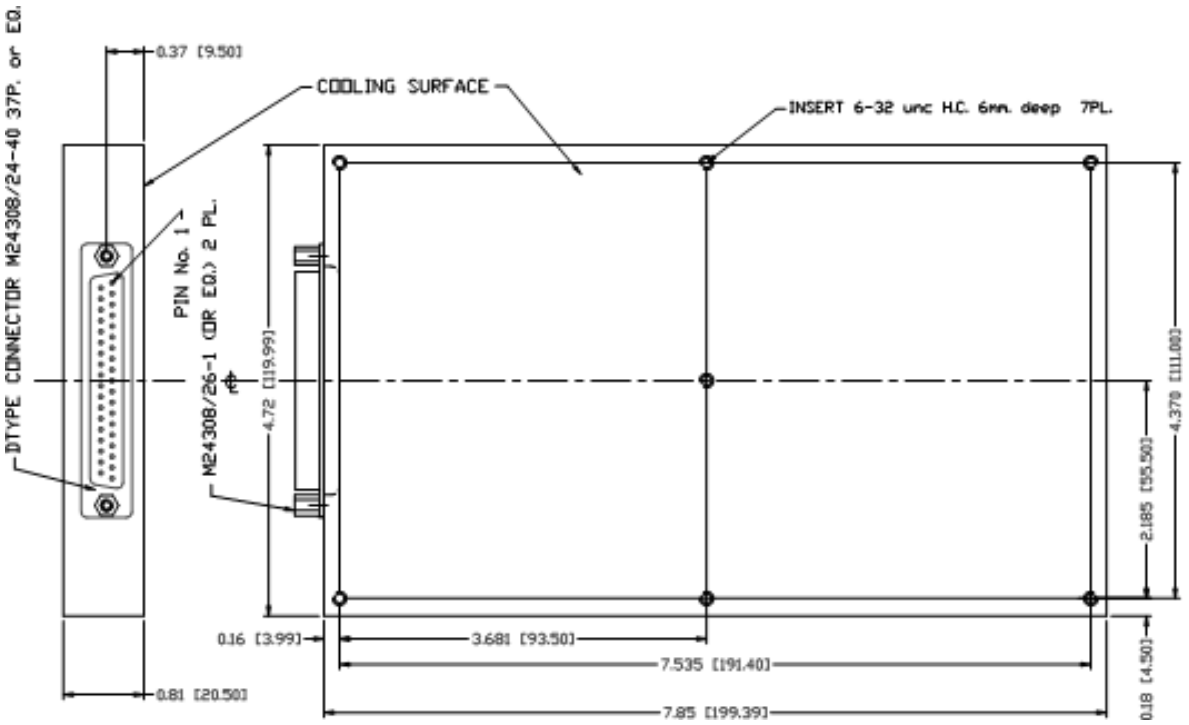
PIN No.	PIN Function
11	+ OUT 6
12	- OUT 5
13	- OUT 8
14	+ OUT 8
15	+ OUT 9
16	+ OUT 2
17	- OUT 2
18	- OUT 1
19	+ OUT 1
20	- VIN

PIN No.	PIN Function
21	- VIN
22	- VIN
23	+ VIN
24	+ VIN
25	+ VIN
26	SIGNAL RTN
27	SYN IN
28	INHIBIT
29	- OUT 7
30	- OUT 6

PIN No.	PIN Function
31	+ OUT 5
32	+ OUT 7
33	- OUT 9
34	OUT1 + SENSE
35	OUT1 - SENSE
36	- OUT 1
37	+ OUT 1

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OUTLINE DRAWING



Notes

1. Dimensions are in Inches [mm]
2. Tolerance is:
   .XX ±0.01 IN
   .XXX ±0.008 IN
3. Weight: 28 oz (795 g

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

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