

M7228 SERIES

THE MOST COMPLETE
MINIATURE, HIGH DENSITY,
SINGLE OUTPUT,
DC/DC CONVERTERS
(UP TO 150W)



APPLICATIONS

Military, Ruggedized, Telecom, Industrial

SPECIAL FEATURES

- Miniature size
- High efficiency
- Wide input range
- Input / Output isolation
- Remote sense
- Parallel connection of modules
- Redundancy connection
- Fixed switching frequency (250 KHz)
- External synchronization capability
- TTL logic enable
- EMI/RFI filters included
- Output voltage adjustment with external resistor
- 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 48 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: $75 \div 85\%$

EMI/RFI:

Meets or exceeds MIL-STD-461D

CE101, CE102, CS101, CS114, CS115,

CS116, RE101, RE102, RS101, RS103

Isolation:

500V between Input and Output

500V 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 (HickUp):

Continuous protection for unlimited time

Over voltage protection:

Electronic shutdown with automatic recovery and
a passive transistor on output.

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:

500V between Output and Input

100V between Output and Case

SELECTION GUIDE

Model	Input	Output	Minimum Load	Maximum Load	Regulation	Ripple (20 MHz BW)
M7228-2	18 to 48 VDC	3.3 VDC	0 A	40 A	± 1%	50 mVp-p
M7228-4	13.5 to 22 VDC	3.45 VDC	0 A	18.5 A	± 1%	50 mVp-p
M7228-5	18 to 48 VDC	5.1 VDC	0 A	30 A	± 1%	50 mVp-p
M7228-7	18 to 48 VDC	6 VDC	0 A	20 A	± 1%	50 mVp-p
M7228-8	22 to 48 VDC	5 VDC	0 A	20 A	± 1%	50 mVp-p

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

PIN ASSIGNMENT

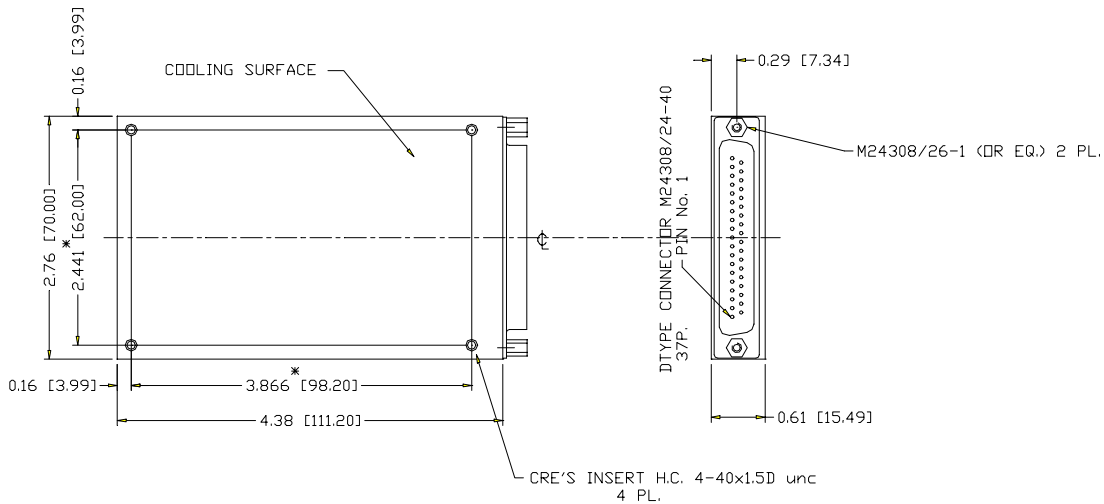
PIN No.	PIN Function
1	- PAR
2	- SIGNAL OUT
3	- SENSE
4	- OUT
5	- OUT
6	- OUT
7	- OUT
8	- OUT
9	+ OUT
10	+ OUT

PIN No.	PIN Function
11	+ OUT
12	+ OUT
13	+ OUT
14	SYN IN
15	SYN OUT
16	- SIGNAL IN
17	+ VIN
18	- VIN
19	- VIN
20	V/CAL OUT

PIN No.	PIN Function
21	PAR IN
22	- OUT
23	- OUT
24	- OUT
25	- OUT
26	- OUT
27	+ OUT
28	+ OUT
29	+ OUT
30	+ OUT

PIN No.	PIN Function
31	+ OUT
32	N.C.
33	+ SENSE
34	INHIBIT
35	+ VIN
36	+ VIN
37	- VIN

OUTLINE DRAWING



Notes

1. Dimensions are in Inches [mm]
2. Tolerance is:
.XX ± 0.02 IN
.XXX ± 0.01 IN
3. Weight: 9.2 Oz (265 gr)

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

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