Amphenol
MILITARY HIGH SPEED

FIELD-PROVEN COTS, MOTS AND CUSTOM MILITARY POWER SOLUTIONS

M8263 SERIES

DC/DC POWER SUPPLY

PRODUCT HIGHLIGHTS

- MINIATURE, HIGH DENSITY DESIGN
- LOW RIPPLE
- DUAL OUTPUT (UP TO 150W)
- DC/DC POWER SUPPLY

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M8263 SERIES DC/DC CONVERTER

Applications

Military (Airborne, ground-fix, shipboard), Ruggedized, Telecom, Industrial

Special Features

- Miniature size
- High efficiency
- Wide input range
- Input / Output isolation
- I2C temperature reading
- External On/Off Inhibit
- Fixed switching frequency (250 kHz)
- External synchronization capability
- EMI/RFI filters included
- Reverse Polarity Protection
- Indefinite short circuit protection with auto-recovery
- Over-voltage shutdown with auto-recovery
- Over temperature shutdown with auto-recovery

Electrical Specifications

DC Input:
DC Input range: 18 to 48 V_{DC}, per MIL-STD-704F.
No damage for:
MIL-STD-1275A (100V for 50mSec)
MIL-STD-704A (80V for 0.1 Sec)

DC Output:
Output #1 range – 3.3V to 12V
Output #1 current – max 10A
Output #2 range - 1.2V to 5.5V
Output #2 current – max 10A
Total Output power – 150W

***Isolation*:**
200V between Input and Output
200V between Input and Case
100V between Output and Case

Line/Load regulation:
Less than 2% (no load to full load, –55°C to +85°C).

Efficiency:
84% - Typical (full load, room temperature)

EMI/RFI:
Design to meet or exceed**
MIL-STD-461F CE102, CS114, CS115, CS116, RS101, RS103

Ripple and Noise:
Less than 50mVp-p, typical (max. 1%) @ Input Voltage of 18V-36V without external capacitance. When connected to system capacitance ripple drops significantly.

Load Transient Overshoot and undershoot
Output resistance at load change of 50%-100% is 30-120mOhm (depending on output voltage). Output back to steady stated within 300-500µSec

Turn on Transient
Voltage overshoot during power on is less than 3% nominal voltage.

Protections *

Input
- **Inrush Current Limiter** – peak value of 5 x Iin for less than 50µSec.
- **Under voltage protection** – unit protects itself (no damage) below 16.5Vdc.

Output
- **Passive transorb on outputs** – 20% above nominal voltage and or active protection
- **Current limiting** – Continuous protection (10-30% above maximum current) for unlimited time (Hiccup).

General
- **Over temperature protection:** Shutdown at internal temperature of +95°C (±5°C) Automatic recovery at baseplate temperature lower than +85°C (±5°C)

* Thresholds and protections can be modified / removed – please consult factory.
**Compliance achieved with 5µH LISN, shielded harness and static resistive load.

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Environmental

Design to Meet MIL-STD-810F

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

Humidity:
Method 507.4 - Up to 95%.

Altitude:
Method 500.4, Procedure I & II, 40,000 ft. and 70,000 ft. Operational

Vibration and Shock:
Shock - Saw-tooth, 20g peak, 11mS.
Vibration - Figure 514.5C-17. General minimum integrity exposure. (1 hour per axis.)

Salt Fog:
Method 509-4

Reliability
150,000 hours, calculated per MIL-STD-217F at +85°C baseplate, Ground fixed.

Environmental Stress Screening (ESS)

Including random vibration and thermal cycles is also available. **Please consult factory for details.**

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Pin Assignment

Pin Number	Function
Output 1	12V
Output 1 RTN	12V RTN
Output 2	5.5V
Output 2 RTN	5.5V RTN
SYNC	External clock
SDA	Temperature DATA
SCL	Temperature CLOCK

Pin Number	Function
INHIBIT	Normally Open
Vin	Power Vin
Vin RTN	Power RTN

* All output parallel pins should be connected together for best performance.

Functions and Signals

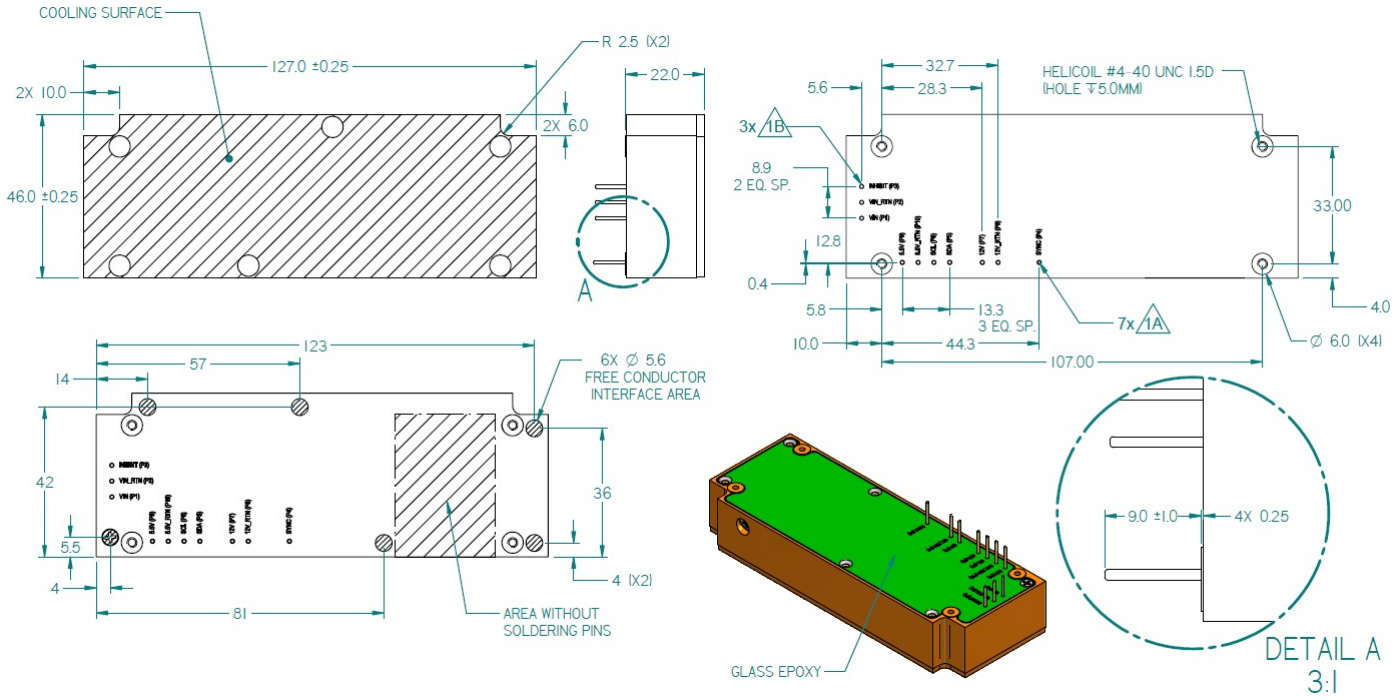
INHIBIT signal
The INHIBIT signal is used to turn the power supply ON and OFF.
TTL “1” or OPEN – will turn on the power supply. (For normal operation leave the signal not connected.) TTL “0” – will turn off the power supply.
Referrer to Input RTN

SYNC IN signal
The SYNC IN signal is used to allow the power supply frequency to sync with the system frequency. The system frequency should be 250 kHz ± 10 kHz.
When not connected the power supply will work at 250 kHz
Referrer to 12V RTN

SDA -I2C DATA LINE, Referrer to 12V RTN

SCL -I2C CLK LINE, Referrer to 12V RTN

Outline Drawing



Heat Dissipation

Heat Dissipation Area
5550 mm²

Notes

1. Dimensions are in inches [mm]
2. Tolerance is:
   .XX ±0.01 IN
   .XXX ±0.005 IN
3. Weight: Approx. 254 g (8.96 oz)

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

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