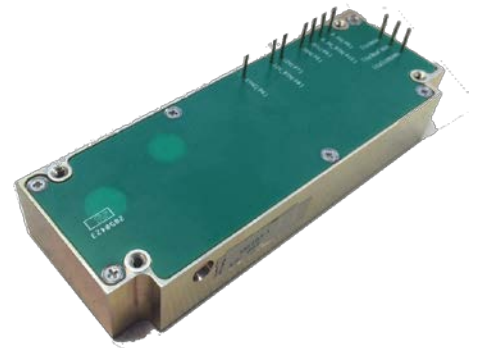


M8263 SERIES

MINIATURE, HIGH DENSITY
LOW RIPPLE, DUAL OUTPUT,
DC/DC CONVERTERS
(UP TO 150W)
Preliminary



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-704A.
No damage for:
MIL-STD-1275A (100V for 50mSec)
MIL-STD-704A (80V for 0.1 Sec)

Line/Load regulation:

Less than 1% (no load to full load, -55°C to +85°C).

Ripple and Noise:

Less than 10mVp-p, typical (max. 1%) without external capacitance. When connected to system capacitance ripple drops significantly.

DC Output:

Output #1 range – 3.3V to 18V
Output #1 current – max 10A
Output #2 range - 1.2V to 5.5V
Output #2 current – max 10A
Total Output power – 150W

Efficiency:

84% - Typical (full load, room temperature)

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

Isolation:

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

EMI/RFI:

Design to meet or exceed MIL-STD-461F CE102, CS114, CS115, CS116, RS101, RS103

Turn on Transient

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

Protections *

Input

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

Output

- **Passive tranzorb 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 base plate temperature of +95°C (±5°C) Automatic recovery at base plate temperature lower than +85°C (±5°C)

* Thresholds and protections can be modified / removed – please consult factory.

Environmental

Design to Meet MIL-STD-810F

Temperature:

Operating: -55°C to +85°C
(base plate)

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 base plate,
Ground fixed.

Environmental Stress Screening (ESS)

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

Pin Assignment - TBD

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 250Khz \pm 10Khz.

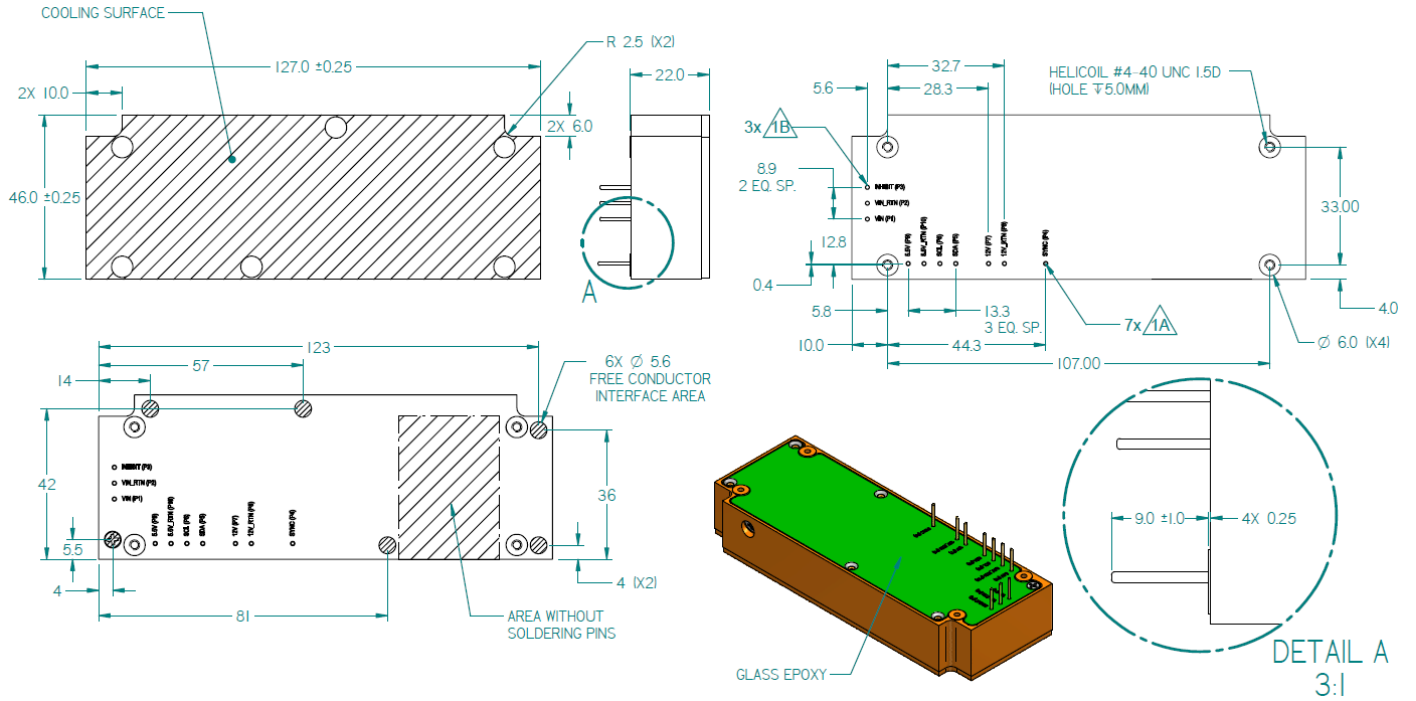
When not connected the power supply will work at 250KHZ

Referrer to 12V RTN

SDA -I2C DATA LINE, Referrer to 12V RTN

SCL -I2C CLK LINE, Referrer to 12V RTN

Outline Drawing - TBD



Heat Dissipation

Heat Dissipation Area
5550mm²

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

Notes

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