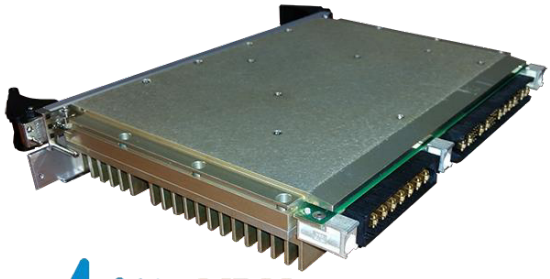
Amphenol
MILITARY HIGH SPEED

M4468 SERIES

DC/DC POWER SUPPLY



MIL VPX

PRODUCT HIGHLIGHTS

- 6U VPX VITA 62 COMPLIANT
- HIGH DENSITY
- SIX OUTPUTS
- HEATSINK INCLUDED
- UP TO 900W

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Applications

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

Special Features

- VITA 62 standard compliant
- High power – **up to 900W cont.**
- High density – up to 18W/in^3
- High efficiency – up to 90%
- Wide input voltage range
- Input / Output isolation
- Remote sense (@ PO# outputs)
- External On/Off Inhibit
- External On/Off Enable
- Fixed switching freq. (250 kHz)
- External sync. capability
- EMI filters included
- I^{2}C communication
- PO# outputs parallelable
- Indefinite short-circuit protection with auto-recovery
- Over-voltage protection
- Over-temperature shutdown with auto-recovery
- Reverse input protection
- Conduction cooled via card edge

Electrical Specifications

DC Input

- Steady-State: 18 to 36 V_{DC}
- Operates through over-voltage transients IAW MIL-STD-704(A-F) and MIL-STD-1275(A-D)
- No damage due to transients IAW MIL-STD-704(A-F) and MIL-STD-1275(A-D)

DC Output*

PO1: 12 V up to 40 A
PO2: 12 V up to 40 A
PO3: 5 V up to 12 A
+12V_Aux: +12 V up to 1 A
–12V_Aux: –12 V up to 1 A
3.3V_Aux: 3.3 V up to 12 A

Isolation

Input to Output: 200 V_{DC}
Input to Case: 200 V_{DC}
Output to Case: 100 V_{DC}

Line/Load regulation

Up to ±1% (Low to high input line voltage, no load to full load, –55 °C to +85 °C).

Efficiency

88% - Typical (Nominal line voltage, full loads, room temperature)

EMC

Designed to meet MIL-STD-461F (/w 5µH LISN): CE101, CE102, CS101

Ripple and Noise

Typically less than 50 mV_{p-p} (max. 100 mV_{p-p}), measured across a 0.1 µF capacitor, with 10 µF capacitor across load.

Load Transient Overshoot and Undershoot

Output dynamic response of less than 5% at load Step of 30%-90%. Output returns to regulation in less than 1 ms

Communication

I^{2}C protocol available for voltages, currents and temperature for all positive voltages (GAx, SCL, SDA)

* All PO# outputs have remote sense lines for voltage drop compensation and current share ability

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Protections *

Input

- **Reverse Polarity Protection**
  Protection for unlimited time, up to -48 V_{DC}.
- **Under-Voltage Lockout**
  Unit shuts down if input voltage drops below 16.5 ± 1 V.
  Automatic restart when input voltage rises above 19 ± 1 V.
  Minimum hysteresis: 2 V.
- **Over-Voltage Lockout**
  Unit shuts down if input voltage rises above 55 ± 2 V.
  Automatic restart when input voltage falls below 38 ± 2 V.
  Lockout is delayed by at least 100ms from the onset of the over-voltage state, to allow operation through normal transients, per MIL-STD-704 and MIL-STD-1275.

Output

- **Over-Voltage Protection**
- **Overload / Short-Circuit Protection**
  Continuous protection (10-30% above maximum current) for unlimited time (Hiccup).
  Automatic recovery when overload/short-circuit removed.

General

- **Over Temperature Protection**
  Automatic shutdown in case internal temperature (communicated via I^2C) rises above 105 ± 5 °C.
  Operation *guaranteed* at card edge temperature up to +85 °C under full load conditions.

Environmental Conditions

Designed to meet MIL-STD-810G

Temperature
Operating: –55 °C to +85 °C at unit edge (consult factory)
Storage: –55 °C to +125 °C

Altitude
Method 500.5, Procedure I & II
Storage/Air Transport: 40 kft
Operation/Air carriage: 70 kft

Salt Fog:
Method 509.5

Fungus
Does not support fungus growth, in accordance with the guidelines of MIL-STD-454, Requirement 4.

Humidity
Method 507.5, Up to 95% RH

Shock Method 516.6
40 g, 11 ms saw-tooth (all directions)

Vibration
Shock: Saw-tooth, 20 g peak, 11 ms.
Vibration: Figure 514.6E-1. General minimum integrity exposure. (1 hour per axis.)

Environmental Stress Screening (ESS)

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

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

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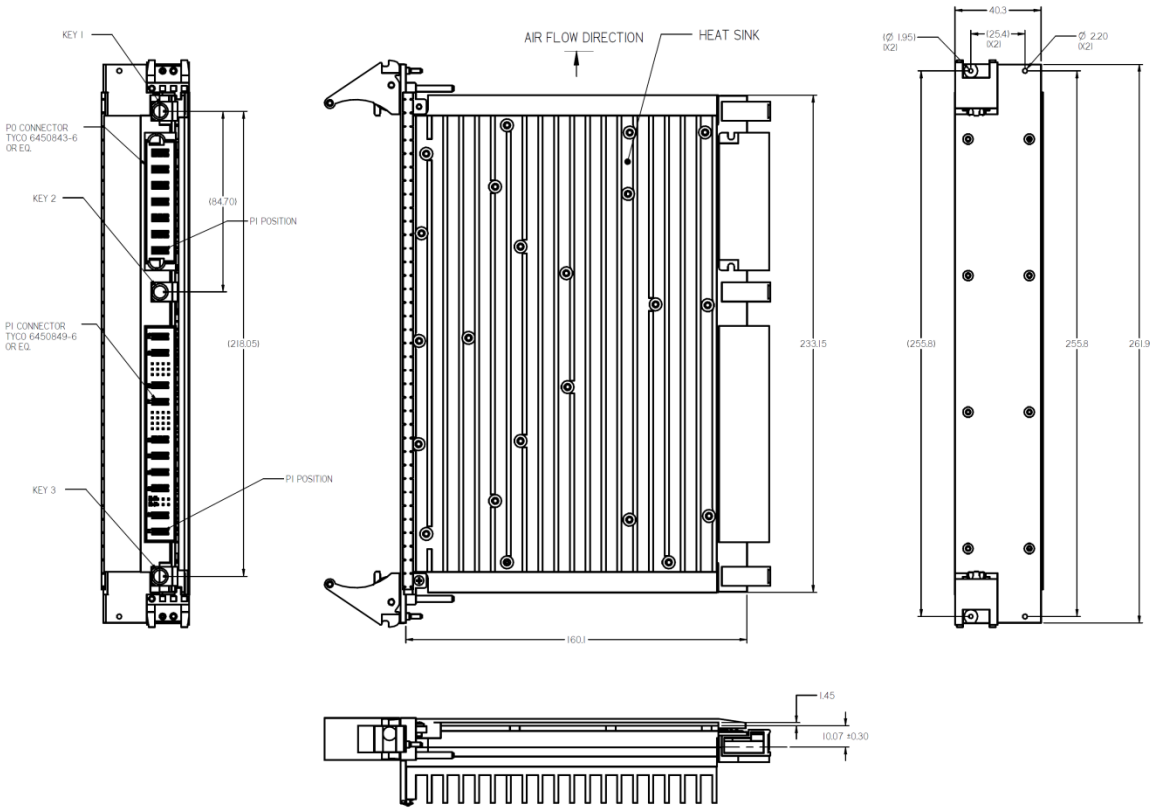
Outline Drawing



Notes

1. Dimensions are in Inches [mm]
2. Tolerance is:
   .XX ± 0.01 IN
   .XXX ± 0.005 IN
3. Weight: Approx. 3 lbs (1.36 kg)

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

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