

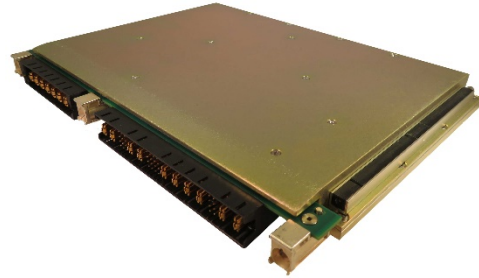


4069 SERIES

6U VITA 62 COMPLIANT

HIGH DENSITY, FIVE OUTPUTS, SINGLE-PHASE AC / DC CONVERTERS

Up to 700 W



Applications

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

Special Features

- VITA 62 / 6U
- High efficiency
- Wide input range
- Input / Output isolation
- Power Factor Correction
- Remote sense
- Fixed switching frequency
- EMI filters included
- I²C communication
- External On/Off Inhibit
- External On/Off enable
- Indefinite short circuit protection with auto-recovery
- Over-voltage shutdown with auto-recovery
- Over temperature shutdown with auto-recovery

Electrical Specifications

AC Input:

85 to 265 V_{AC}
50/60/400/360-800 Hz
Single-Phase

DC Outputs: (standard version)

P01/PO2 12 V_{DC} / 50 A Sense
P03 5 V_{DC} / 25 A Sense
3.3V_Aux 3.3 V_{DC} / 25 A Sense
+12V_Aux +12 V_{DC} / 1 A
-12V_Aux -12 V_{DC} / 1 A
Total power output: 700 W

Isolation:

Input to Output: 500 V_{DC}
Input to Case: 500 V_{DC}
Output to Case: 100 V_{DC}

Line/Load regulation:

±1% or better
(no load to full load, low line to high line, -55 °C to +70 °C).

Power Factor

≥ 97% (115 V_{AC}, 60 Hz, Full load)

EMC:

Designed to meet MIL-STD-461F
(with 5 μH LISNs)

Ripple and Noise:

Less than 50 mV_{p-p}, typical (max. 1%) without external capacitance. When connected to system capacitance ripple drops significantly.

Transient Over-and-under-shoot

Output resistance at load change of 50%-100% is 30-120 mΩ (depending on output voltage). Output back to steady stated within 300 to 500 μs

Efficiency

Typical 85% (Nominal line, nominal load, room temperature)

Protections (Thresholds and protections can be modified / removed – please consult factory).



| <u>Input</u> | <u>Output</u> | <u>General</u> |
|--|--|---|
| <ul style="list-style-type: none"> • Inrush Current Limiter: peak value of $5 \times I_{IN}$ for less than 1 ms. • Under Voltage Lock-Out Unit protects itself (no damage) below $75 V_{AC} \pm 5 V_{AC}$. • Catastrophic Failure Protection Fuses are available to protect from catastrophic failure. The fuses are rated not to engage due to any normal type operation. | <ul style="list-style-type: none"> • Power Good Signaling Set to engage at about 80% of nominal voltage. • Active Over Voltage Protection Set to engage at $110\% \pm 5\%$ of nominal voltage. • Passive Over Voltage Protection Set to engage at $120\% \pm 10\%$ of nominal voltage. • Overload / Short Circuit Protection Continuous protection (10-30% above maximum current) for unlimited time (Hiccup). | <ul style="list-style-type: none"> • Over temperature protection: Shutdown at temperature of $+110\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$. Automatic recovery when temperature drops below $+90\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$. |

Environmental Conditions

Designed to meet MIL-STD-810F

Temperature:

Operating: $-55\text{ }^{\circ}\text{C}$ to $+70\text{ }^{\circ}\text{C}$ (at plug-in card edge, IAW VITA 62)
Storage: $-55\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$

Humidity:

Method 507.4
Up to 95%.

Altitude:

Method 500.4
Procedures I & II, 40,000 ft. and 70,000 ft. Operational

Vibration and Shock:

Shock: 20 g, 11 ms terminal peak saw-tooth.
Vibration: General minimum integrity exposure IAW figure 514.5C-17, 1 hour per axis.

Salt Fog:

Method 509-4

Reliability

100'000 hours, calculated per MIL-STD-217F at $+40\text{ }^{\circ}\text{C}$ at wedge lock edge, Ground Fixed

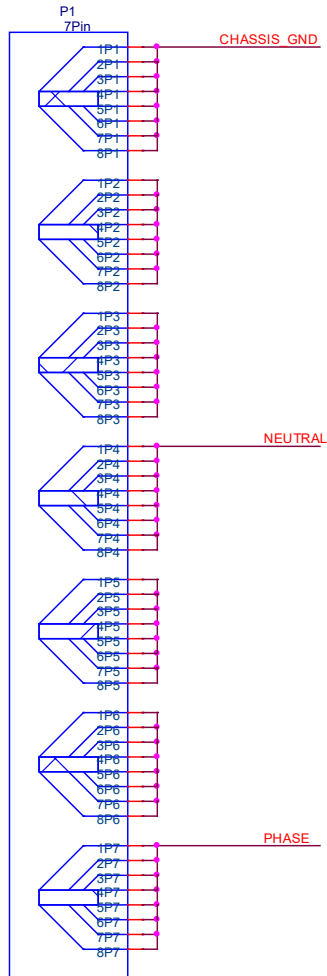
Environmental Stress Screening (ESS)

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



Pin Assignment

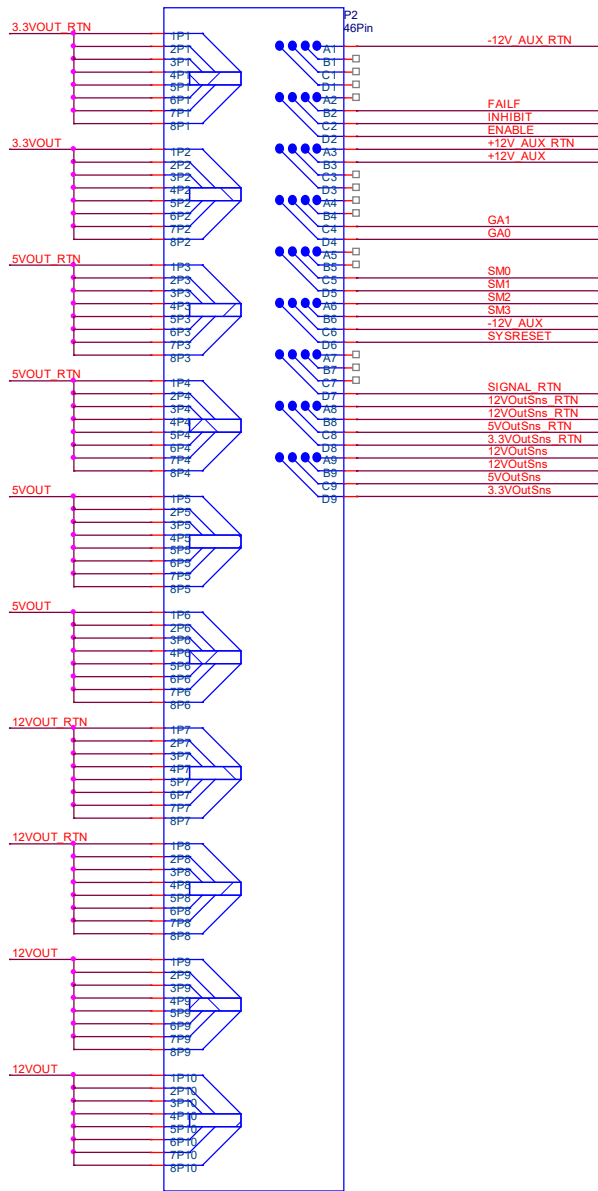
Connector P0:



| Pin Number | Signal Name |
|------------|-------------|
| P7 | PHASE |
| P6 | N/C |
| P5 | N/C |
| P4 | NEUTRAL |
| P3 | N/C |
| P2 | N/C |
| P1 | CHASSIS_GND |



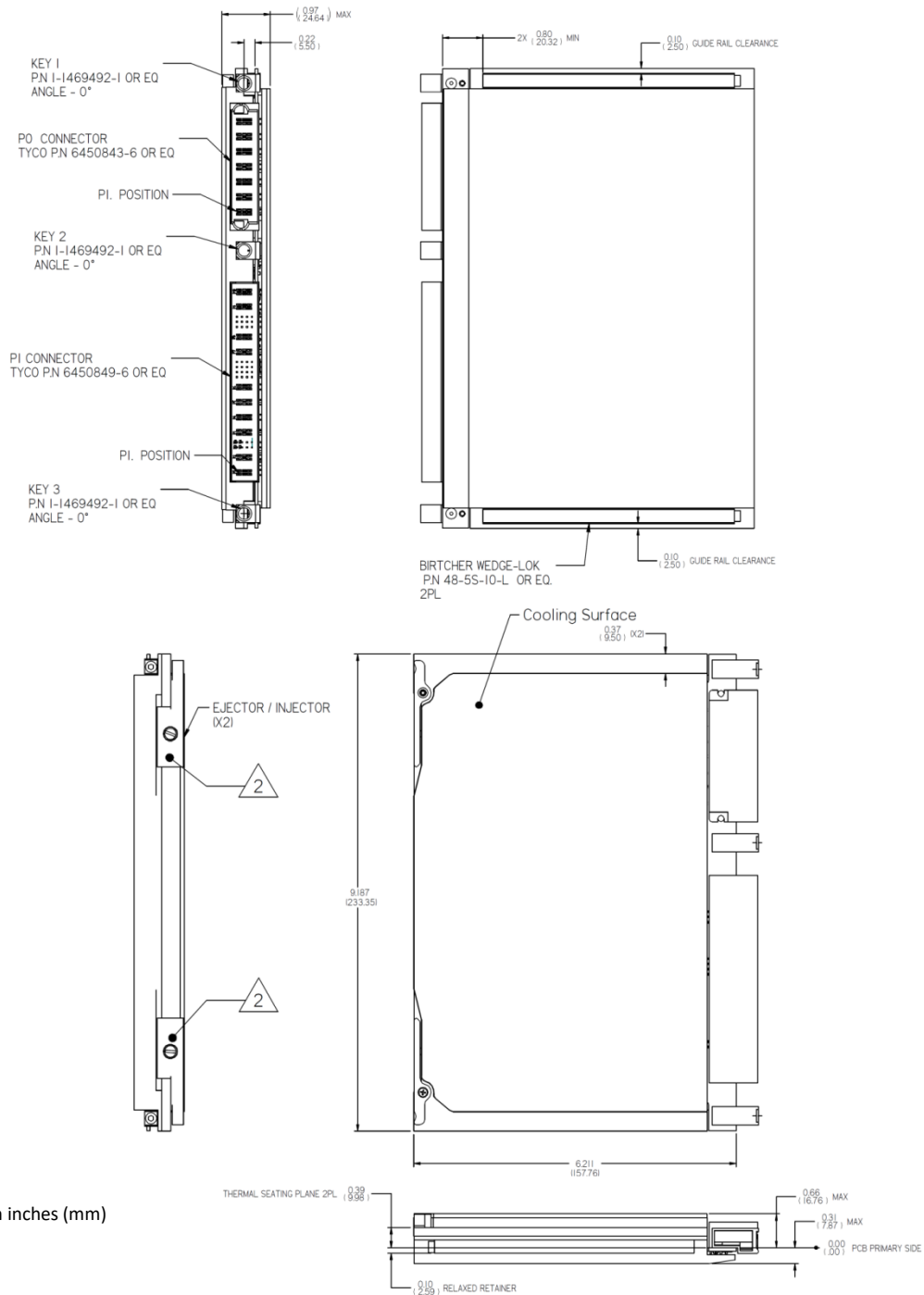
Connector P1:



| Pin Number | Signal Name |
|------------|----------------|
| P10 | 12V |
| P9 | 12V |
| A9 | 12V_SENSE |
| B9 | 12V_SENSE |
| C9 | 5V_SENSE |
| D9 | 3.3V_SENSE |
| A8 | 12V_SENSE_RTN |
| B8 | 12V_SENSE_RTN |
| C8 | 5V_SENSE_RTN |
| D8 | 3.3V_SENSE_RTN |
| A7 | NC |
| B7 | NC |
| C7 | NC |
| D7 | SIGNAL_RTN |
| P8 | 12V_RTN |
| P7 | 12V_RTN |
| A6 | SM2 |
| B6 | SM3 |
| C6 | -12V_AUX |
| D6 | SYSRESET |
| A5 | NC |
| B5 | NC |
| C5 | SM0 |
| D5 | SM1 |
| A4 | NC |
| B4 | NC |
| C4 | GA1 |
| D4 | GA0 |
| A3 | +12V_AUX_RTN |
| B3 | +12V_AUX |
| C3 | NC |
| D3 | NC |
| P6 | 5V |
| P5 | 5V |
| P4 | 5V_RTN |
| P3 | 5V_RTN |
| A2 | NC4 |
| B2 | FAIL |
| C2 | INHIBIT |
| D2 | ENABLE |
| A1 | -12V_AUX_RTN |
| B1 | NC |
| C1 | NC |
| D1 | NC |
| P2 | 3.3V |
| P1 | 3.3V_RTN |



Outline Drawing



Notes

1. Dimensions are in inches (mm)
2. Tolerance is:
 .XX ± 0.01 in
 .XXX ± 0.005 in

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