

## **M6242 SERIES**

*DC/DC POWER SUPPLY*



### **PRODUCT HIGHLIGHTS**

- **MINIATURE**
- **HIGH DENSITY**
- **400 Hz SINGLE-PHASE OUTPUT**
- **DC/AC INVERTER**
- **UP TO 100 VA**

## M6242 SERIES DC/AC INVERTER

### Applications

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

### Special Features

- Miniature size
- High efficiency
- Wide input range
- Input / Output isolation
- Output Good (BIT) Signal
- EMI filters included
- Non-latching protections:
  - Overload/Short-Circuit
  - Over-voltage
  - Over temperature

### Electrical Specifications

#### DC Input

Voltage range: 18 to 36 V<sub>DC</sub>

#### AC Output

Voltage range: 26 to 115V<sub>rms</sub>

Current range: 0 to 2.3 A

Power range: 0 to 100 VA

#### Isolation

Input to Output: 500 V<sub>DC</sub>

Input to Case: 100 V<sub>DC</sub>

Output to Case: 500 V<sub>DC</sub>

#### Output Voltage Regulation

Better than ±3% (no load to full load, -55 °C to +90 °C, and over input voltage range).

#### Efficiency

60-75% typical from 40% load

#### EMC

Designed to meet\* MIL-STD-461F  
CE102, CS101, CS114, CS115,  
CS116, RE102, RS103

#### Output Waveform

Sinusoidal, with up to 3% THD when driving resistive, capacitate or inductive load

\* EMC Compliance achieved with 5μH LISN, shielded harness and static resistive load.

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### Protections \*

#### Input

- Over-Voltage Lock-Out

#### Output

- **Over-Voltage Protection**  
Electronic shutdown with automatic recovery and a passive transorb on output.
- **Current limiting**  
Continuous protection for unlimited time with Automatic recovery.

#### General

- **Over Temperature protection:**  
Shutdown in case baseplate temperature rises above  $+95\text{ °C} \pm 5\text{ °C}$ .  
Automatic recovery upon cool-down to below  $+90\text{ °C} \pm 5\text{ °C}$ .

### Environmental Conditions \*\*

Designed to meet MIL-STD-810F

#### Temperature

Operating:  $-55\text{ °C}$  to  $+85\text{ °C}$   
(measured at base plate)

Storage:  $-55\text{ °C}$  to  $+125\text{ °C}$

#### Altitude

Method 500.4  
Procedures I & II  
0 to 70000 ft. AMSL

#### Salt Fog

Method 509.4

#### Humidity

Method 507.4  
Up to 95%.

#### Vibration

Method 514.5  
Category 24  
General minimum integrity exposure  
IAW Figure 514.5C-17,  
1 hour per axis.

#### Shock

Method 516.5  
Procedure I  
Saw-tooth, 20g peak, 11 ms

### Reliability

150000 hours, calculated per MIL-HDBK-217F Notice 2 at  $+85\text{ °C}$  baseplate, Ground fixed.

### 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.

\*\* All environmental requirements can be tailored per customer needs – please consult factory.

## Pin Assignment

**Connector type:** MS3102E14S-6P-626-9 or eq.

**Mates with:** MS3106T-14S-6S-626-9 or eq.

| Pin # | Function          | P |
|-------|-------------------|---|
| A     | VIN               | + |
| B     | VIN RTN           | - |
| C     | OUT (PHASE)       | ~ |
| D     | OUT RTN (NEUTRAL) | 0 |
| E     | BIT               | + |
| F     | INHIBIT           | + |

## Functions and Signals

### **INHIBIT**

The **INHIBIT** signal is used to turn the power supply ON and OFF.

- Leaving it open will turn the power supply ON.
- Shorting it to **IN RTN** will turn the power supply OFF.

This signal is referenced to **VIN RTN**.

### **BIT**

The **BIT** signal is used to indicate if the output voltage is within range.

TTL "1" means the output is within the required tolerances.

TTL "0" means the output is not within the required tolerances.

This signal is referenced to **BIT RTN**.



**Standard Configurations**

| Part number | Input                    | Output              |           |         |
|-------------|--------------------------|---------------------|-----------|---------|
|             | Voltage Input range      | Voltage             | Frequency | Current |
| M6242-100   | 18 to 36 V <sub>DC</sub> | 115 V <sub>AC</sub> | 400Hz     | 1 A     |
| M4252-800   | 18 to 36 V <sub>DC</sub> | 115 V <sub>AC</sub> | 400Hz     | 1 A     |

**Special Features**

- **M6242-800:** this variant is REACH Compliant
- **M6242-800:** The aluminum parts comprising this variant are chromate conversion coated per MIL-DTL-5541F, Type II CLASS 1A or eq.

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