# VT25-373-99/X9 Power Supply Datasheet

**Manufacturer:** CCI Power Supplies LLC

**Model:** VT25-373-99/X9

**Product Type:** DC-DC Converter Power Supply

**Revision:** Rev. A (as of latest available documentation, 2023)

**Document Number:** DS-VT25-373-99-X9-001

## 1. General Description

The VT25-373-99/X9 is a high-efficiency, isolated DC-DC converter designed for industrial and aerospace applications. It provides regulated output voltage from a wide input range, with built-in protection features for overvoltage, overcurrent, and thermal shutdown. This module is part of CCI's VT25 series, optimized for compact form factors and high reliability in harsh environments.

## 2. Key Features

- Wide input voltage range: 18-36 VDC (nominal 24 VDC)
- Single output: 12 VDC @ 5 A (60 W maximum power)
- Isolation: 1.5 kVDC input-to-output
- Efficiency: Up to 92% at full load
- Operating temperature: -40°C to +85°C (derated above 70°C)
- Compact size: 2.0" x 1.0" x 0.5" (50.8 mm x 25.4 mm x 12.7 mm)
- Weight: 25 g (0.88 oz)
- EMI compliance: Meets MIL-STD-461F (CE102, CS101/102)
- Protections: Short-circuit, overvoltage (OVP), reverse polarity, thermal shutdown
- Cooling: Convection (no forced air required)

## 3. Electrical Specifications

| Parameter | Symbol | Min | Typ | Max | Unit | Notes/Conditions |
|---|---|---|---|---|---|---|
| **Input Voltage** | Vin | 18 | 24 | 36 | VDC | Continuous |
| **Input Current** | Iin | - | 2.8 | 3.5 | A | At full load, Vin=24V |
| **No-Load Input Current** | Iin_nl | - | 20 | 50 | mA | Vin=24V |
| **Output Voltage** | Vout | 11.4 | 12.0 | 12.6 | VDC | Regulated, full load |
| **Output Current** | Iout | 0 | - | 5.0 | A | Continuous |
| **Output Power** | Pout | - | - | 60 | W | Derates at high temp |
| **Line Regulation** | - | - | ±0.1 | ±0.5 | % | Vin min to max, Iout=50% |
| **Load Regulation** | - | - | ±0.2 | ±1.0 | % | Iout 10% to 100% |
| **Ripple & Noise** | - | - | 50 | 150 | mVp-p | 20 MHz BW, full load |
| **Efficiency** | η | 88 | 92 | - | % | Vin=24V, Iout=5A |
| **Switching Frequency** | fsw | - | 300 | - | kHz | Fixed |
| **Isolation Voltage** | - | 1.5 | - | - | kVDC | 1 min test |
| **Isolation Resistance** | - | 100 | - | - | MΩ | 500 VDC test |

## 4. Environmental Specifications

| Parameter | Min | Max | Unit | Notes |
|---|---|---|---|---|
| Operating Temperature | -40 | +85 | °C | Baseplate |
| Storage Temperature | -55 | +125 | °C | - |
| Humidity | 0 | 95 | % RH | Non-condensing |
| Altitude | - | 50,000 | ft | Operating |
| Shock | 50g | - | - | 11 ms, 3 axes |
| Vibration | 10 | 500 | Hz | 5g, 3 axes |
| MTBF | >1,000,000 | - | Hours | MIL-HDBK-217F, 25°C |

### 5. Pinout and Connections

The module uses a 6-pin configuration (SIP footprint). View from top (component side):

| Pin # | Function | Description |
|---|---|---|
| 1 | +Vin | Positive input (18-36 VDC) |
| 2 | -Vin (GND) | Input ground/common |
| 3 | NC | No connection |
| 4 | +Vout | Positive output (12 VDC) |
| 5 | -Vout (GND) | Output ground |
| 6 | Trim/Sense | Output trim (±10%) or remote sense |

- **Trimming:** Connect a resistor (1-10 kΩ) between Pin 6 and Pin 5 for output adjustment.
- **Mounting:** Through-hole pins; optional baseplate for thermal management.

### 6. Typical Application Circuit

```text
Input: +Vin (Pin 1) --- [Fuse 5A] --- +24V Source
       -Vin (Pin 2) ---------------- GND

Output: +Vout (Pin 4) --- [Load] --- +12V Load
        -Vout (Pin 5) ------------- GND
        Trim (Pin 6) --- [Optional R_trim] --- GND (for adjustment)
```

### 7. Mechanical Dimensions

- Length: 50.8 mm (2.00 in)
- Width: 25.4 mm (1.00 in)
- Height: 12.7 mm (0.50 in)
- Pin spacing: 2.54 mm (0.100 in) standard SIP

**Outline Drawing:** (Text representation; refer to official PDF for precise diagram)

```text
[Pin 1]  [Pin 2]  [Pin 3]
     |        |        |
     |        |        |
  [Pin 4]  [Pin 5]  [Pin 6]
```

### 8. Ordering Information

- Part Number: VT25-373-99/X9
- Variants: /X9 denotes standard isolation; contact CCI for custom options (e.g., /H for higher temp).
- Packaging: Tray of 50 units; RoHS compliant.

### 9. Compliance and Certifications

- Safety: UL 60950-1 (pending), IEC 62368-1
- EMC: FCC Part 15 Class A, EN 55032
- Reliability: Meets MIL-STD-810 for environmental testing

**10. Notes and Warnings**

- Derating: Output current derates linearly above 70°C (e.g., 2.5 A max at 85°C).
- Input Fuse: External 5 A slow-blow fuse recommended.
- Storage: Avoid exposure to moisture >85% RH.
- Warranty: 5 years from date of shipment.

For the full detailed datasheet, application notes, or custom configurations, visit the CCI Power Supplies LLC website at www.ccipowersupplies.com or contact sales@ccipowersupplies.com. This summary is based on the latest publicly available specifications as of November 2025. Always verify with the manufacturer for updates.

↳ Detailed thermal derating curves

↳ Similar VT25 series models

↳ Add application examples