

VPS-301 3U VPX Power Supplies >

Rugged, reliable and compact, the VPS-301 3U VPX Power Supply from Molex is a conduction-cooled, DC-to-DC power supply designed for defense, aerospace and harsh-environment embedded systems. The power supply delivers up to 1,000W of ultra-clean power with over 95% efficiency, simplifying thermal management in high-power applications. The SOSA-aligned, OpenVPX-compatible and VITA 62-compliant VPS-301 discrete design streamlines system integration and accelerates deployment when compared with lower-output alternatives.

ADVANTAGES AND FEATURES

Delivers high power and efficiency in a small 3U footprint

The discrete power supply delivers up to 1,000W of ultra-clean power at over 95% efficiency, meeting tight space and weight constraints.

Reduces failure rates for mission-critical applications in harsh environments

Designed to withstand shock, vibration, humidity and extreme temperatures, these discrete power supplies enhance reliability for defense, aerospace and rugged embedded systems.

Enhances system availability in mission-critical applications

Support for parallel operation and N+1 redundancy, with customizable and programmable current regulation and protection, helps improve reliability.

Standards Compliance	VITA 62, OpenVPX, SOSA, MIL-STD-1275
Output Power	Up to 1,000W
Input Voltage	20 to 33V DC (MIL-STD-1275 compliant)
Efficiency Rating	Over 95%

Supports sealed and high-reliability systems

The conduction-cooled design and high thermal efficiency enable deployment in systems where traditional airflow cooling is impractical.

Simplifies system design and reduces integration complexity

Native performance meeting MIL-STD-461 EMI requirements, with ripple/noise below 20mV, reduces or eliminates the need for external filter boxes.

Accelerates integration into modern open-system platforms

The interoperable 3U VPX design aligns with SOSA, OpenVPX and VITA 62 requirements, accelerating design work, enhancing scalability and reducing program risks.

Improves system monitoring and operational visibility

Advanced dual-redundant IPMC functionality enables advanced system health monitoring and management capabilities.



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MARKETS AND APPLICATIONS

Aerospace

Commercial aircraft
Helicopters

Defense

Engineering and recovery vehicles
Fighter jets
Light tactical vehicles
Military ground vehicles
Mine-resistant ambush-protected (MRAP) vehicles
Naval ships
Tracked combat vehicles
Unmanned aerial vehicles



Commercial Aircraft



MRAP Vehicles



Tracked Combat Vehicles

SPECIFICATIONS

Reference Information

Controls: IAW VITA 62.0
System Management: Dual-redundant IPMC compatible with VITA 46.11 and CAN bus
VITA and MIL Standards:
Shock—MIL-STD-810G VITA 47.3
Vibration—MIL-STD-810G VITA 47.3
Humidity—MIL-STD-810G VITA 47.3
Cooling—VITA 48.2 conduction cooled
EMI—MIL-STD-461G; CE101, CE102, CS101, CS114, CS115, CS116
Input Voltage: MIL-STD-1275

Mechanical

Form Factor: 3U VPX, conduction cooled (VITA 48.2)
Length: 6.72" (170.69mm)
Width: 3.94" (100.08mm)
Height: 0.97" (24.64mm)
Weight: 1.13 lbs. (513g)
Connector: TE 2313442-1
LED Indicators: Input OK, 12V output OK, 3.3V output OK, over temp

Physical

Operating Temperatures: -40 to +85°C
Storage Temperatures: -55 to +105°C

Electrical

Output Power: Up to 1,000W
Efficiency: Over 95%
Input Voltage: 20 to 33V DC (MIL-STD-1275 cranking and starting supported)
Output Voltage/Current: 12V @ 82.0A max., 3.3V auxiliary @ 8.0A
Ripple: <20mV typical, 50mV max. peak-to-peak
Surge: ±100V DC (MIL-STD-1275)
Spike: ±250V DC (MIL-STD-1275)
Line Regulation (max.): 0.5%
Load Regulation (max.): 2.0% (0 to 100% load)
Isolation: 500V DC (input-to-case and output-to-case)
Overcurrent/Thermal Protection: Programmable current regulator and overcurrent shutdown