250W, Encapsulated DC/DC Converter for Heavy Duty Applications
PDC 250 Series

- Rugged, field-proven design
- Complete encapsulation
- Conduction cooling
- Very wide temperature range
- Full electronic protection
- Wide input ranges

This fully encapsulated, industrial quality DC/DC converter uses field-proven technology to generate up to 250W output power. It has an excellent track record in numerous heavy-duty applications. The unit is entirely potted with a thermally conductive MIL-grade silicon rubber compound to increase resistance to shock, vibration and humidity. Cooling is via base plate by conduction. The unit is designed for continuous operation at 70°C with installation on an appropriate size heatsinking surface. It has full electronic protection. Low component count, large design headroom, and the use of components with established reliability result in high MTBF. The unit is manufactured at our plant under strict quality control. Versions that comply with EN 50155 railway specifications are available.

SPECIFICATIONS

Input Voltage
24Vdc (21V – 30V)
48Vdc (42 – 60V)
125Vdc (95 - 140V)
Consult factory for other voltages and ranges, including for railway

Input Protection
Inrush current limiting
Varistor
Internal safety fuse
Lower voltage than the specified minimum input will not damage the unit

Isolation
According to input/output voltage, but minimum of:
1000VDC input to chassis
1500VDC input to output
500VDC output to chassis

Standards
Designed to meet EN60950 and related standards.

EMI
EN 55022 Class A as a minimum

Switching Frequency
55kHz +/- 3kHz

Output Voltages
12Vdc/20A, 24Vdc/10A,
36Vdc/17A or 48Vdc/5A,
72Vdc/3.3A
Consult factory for other voltages

Line/Load Regulation
$^{+}$/-1% combined from zero load to full load, including separation diode

Dynamic Response
Max 5% voltage deviation for 10% to 50% load step, with better than 1msec recovery time

Output Ripple / Noise
Better than 1% of output voltage peak to peak or 0.2% Vrms (20MHz BW)

Output Overload Protection
Rectangular current limiting with short-circuit protection (no hiccup)
Thermal shutdown in case of insufficient cooling (self resetting)

Output Overvoltage Protection
Second regulator loop, completely stable and independent of main regulator loop

Efficiency
Min. 80% at full load

Operating Temperature Range
-40 to 70°C cold plate temperature for full specification

Temperature Drift
0.03% per °C over operating temperature range

Cooling
Conduction via base plate

Environmental Protection
Fully encapsulated and potted enclosure

Shock/Vibration
IEC 61373 Cat 1 A&B

Humidity
5 - 95% non-condensing

MTBF
150,000 hours @ 45°C
Demonstrated MTBF is significantly higher

Indicators
None

Control Input
None

Alarm Output
None

Dimensions
P59: 108 x 70 x 191 mm
(4.25” x 2.75” x 7.5”) including terminal block and flanges

Weight
2 kg (4.5 lbs.)

Connections
9-pole barrier-type terminal block, 3/8” spacing

RoHS Compliance
According to requirements

Warranty
Two years subject to application within good engineering practice

Enhancements to these general specifications can be accommodated upon request. Specifications are subject to change.

Designer and manufacturer of quality converters, inverters, UPS systems, complete rack mount systems and DC-input fluorescent lamp inverters since 1982. Custom or standard. Absopulse is a BABT-approved Facility

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