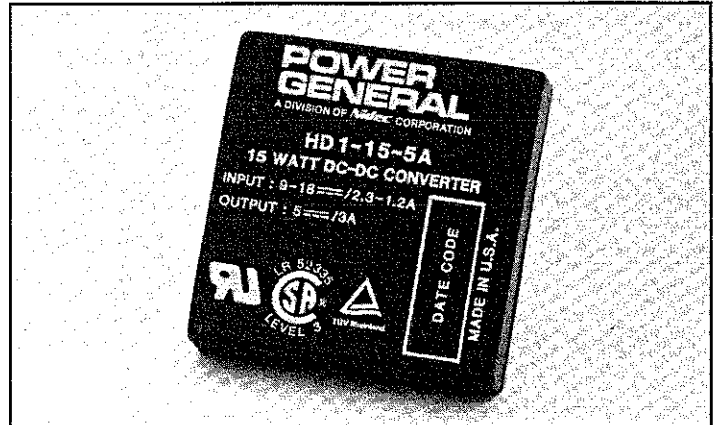


# HD1-15 SERIES

## 15W SINGLE OUTPUT DC-DC CONVERTERS —WIDE INPUT RANGE, ULTRA-HIGH RELIABILITY—

### FEATURES

- Wide Input Voltage Range
- Meets UL1950
- Meets CSA22.2-234/950
- Meets VDE0805/EN60950/IEC950
- Pi Input Filter
- Over-Voltage/Short-Circuit Protection
- Tight Line/Load Regulation
- 2-Year Warranty
- **Minimum 300,000 Hours MTBF**



### APPLICATIONS

- Telecommunications Equipment
- Portable/Battery-Operated Equipment

*All HD1-15 models are packaged in a compact 2.0 x 2.0 x 0.4-inch copper case with six-sided shielding and are encapsulated with a flame-retardant material.*

### GENERAL SPECIFICATIONS

DC INPUT VOLTAGE .....	See voltage/current rating chart.
INRUSH CURRENT .....	15A, peak, 25 $\mu$ s.
EMI SUPPRESSION .....	Pi input filter .
REVERSE VOLTAGE PROTECTION .....	Internal shunt diode.
DC OUTPUT .....	See voltage/current rating chart.
CONTINUOUS OUTPUT POWER .....	15 watts, maximum.
SHORT-CIRCUIT PROTECTION .....	Indefinite.
EFFICIENCY .....	75 percent, minimum.
LINE/LOAD REGULATION .....	See voltage/current rating chart.
ISOLATION VOLTAGE .....	1500 VDC, input to output, for one minute.
TRANSIENT RESPONSE .....	500 $\mu$ s recovery from half-load to full load step change to within 1 percent of regulation band with 5 percent maximum deviation.
NOISE AND RIPPLE .....	5.0V output, 50 mV <sub>pp</sub> , maximum; 12V and 15V outputs, 75 mV <sub>pp</sub> , maximum.
OPERATING FREQUENCY .....	150 kHz.

### ENVIRONMENTAL OPERATING CHARACTERISTICS

TEMPERATURE RANGE .....	-25°C to +85°C; derate 3 percent/°C from +70°C to +85°C.
TEMPERATURE COEFFICIENT .....	$\pm$ 0.02 percent/°C.
COOLING .....	Free-air convection.
RELATIVE HUMIDITY .....	0 to 95 percent, non-condensing.
ALTITUDE .....	0 to 10,000 feet.

### STORAGE CHARACTERISTICS

TEMPERATURE RANGE .....	-55°C to +100°C.
RELATIVE HUMIDITY .....	0 to 95 percent, non-condensing.

### RELIABILITY

MEAN TIME BETWEEN FAILURES .....	>300,000 hours, per "Parts Stress" method in MIL-HDBK 217E (ground benign, 25°C).
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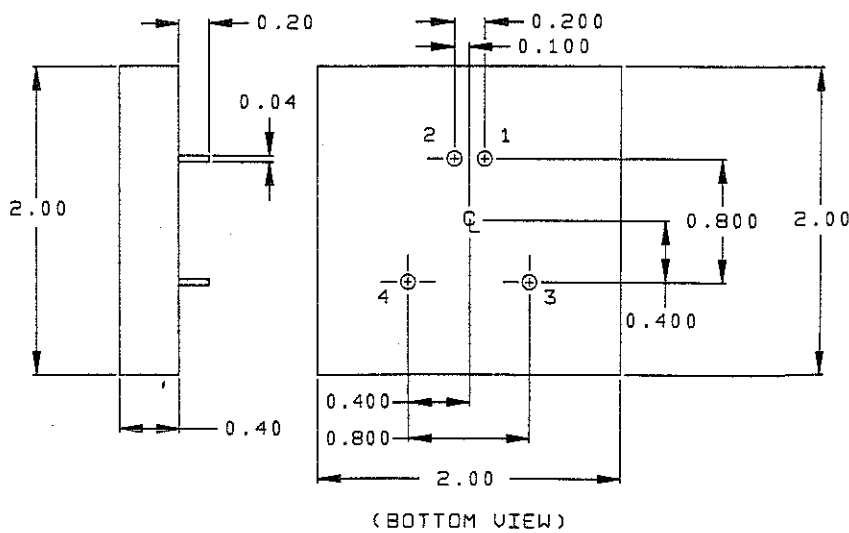
# HD1-15 SERIES

Model Number	DC Input Voltage			Nom. Input Current (A)	Output Voltage (V)	Output Current			Output Voltage Tolerance	Line Reg. (LL-HL)	Load Reg. (NL-FL)
	Min. (V)	Nom. (V)	Max. (V)			Min. (A)	Nom. (A)	Max. (A)			
HD1-15-5A	9.0	12	18	1.7	5.0	0.00	2.50	3.00	±1.0%	±0.3%	±0.5%
HD1-15-5B	18	24	36	0.8	5.0	0.00	2.50	3.00	±1.0%	±0.3%	±0.5%
HD1-15-5C	36	48	72	0.4	5.0	0.00	2.50	3.00	±1.0%	±0.3%	±0.5%
HD1-15-12A	9.0	12	18	1.7	12	0.00	1.00	1.25	±1.0%	±0.3%	±0.5%
HD1-15-12B	18	24	36	0.8	12	0.00	1.00	1.25	±1.0%	±0.3%	±0.5%
HD1-15-12C	36	48	72	0.4	12	0.00	1.00	1.25	±1.0%	±0.3%	±0.5%
HD1-15-15A	9.0	12	18	1.7	15	0.00	0.75	1.00	±1.0%	±0.3%	±0.5%
HD1-15-15B	18	24	36	0.8	15	0.00	0.75	1.00	±1.0%	±0.3%	±0.5%
HD1-15-15C	36	48	72	0.4	15	0.00	0.75	1.00	±1.0%	±0.3%	±0.5%

**Notes:**

1. All measurements are at nominal input and nominal load and +25°C, unless otherwise specified.
2. Input current is measured at nominal input voltage, full load and +25°C.
3. External line fuse is recommended: For models with 12V input, use 4.0A/125V fuse. For models with 24V input, use 2.0A/125V fuse. For models with 48V input, use 1.0A/125V fuse.
4. Peak-to-peak and RMS metering equipment shall have a 20 MHz response with probes and cables maintaining a frequency response of 20 Hz to 20 MHz. Output ripple and spikes are measured directly at the output terminals of the power supply across a 0.1 μF ceramic capacitor without use of the probe ground.

## MECHANICAL OUTLINE AND PIN CONFIGURATION



### PIN-OUT

Pin	Designation
1	+V IN
2	-V IN
3	+V OUT
4	-V OUT

**Notes:**

1. Dimensions shown are in inches.
2. Tolerance = 0.00 ±0.01, 0.000 ±0.005.