

HD1-40 SERIES

NIDEC CORP/ PWR GENL DIV

48E D

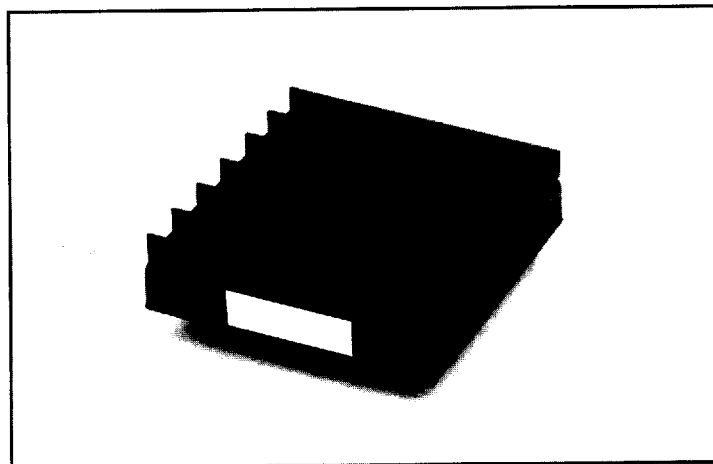
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40W SINGLE OUTPUT DC-DC CONVERTERS —3 TO 1 INPUT RANGE, ULTRA-HIGH RELIABILITY—

FEATURES

- 20V-60V Input Range
- Meets UL1950
- Meets CSA22.2-234/950
- Meets VDE0805/EN60950/IEC950
- Pi Input Filter
- Over-Voltage/Short-Circuit Protection
- Remote Load Sensing
- Remote Shutdown/Output Adjustment
- 2-Year Warranty
- **Minimum 200,000 Hours MTBF**



APPLICATIONS

- Distributed Power Systems
- Telecommunications Equipment
- Portable/Battery-Operated Equipment

All HD1-40 models are supplied in a compact 3.0 x 3.0 x 0.88-inch package with a copper case, six-sided shielding, and a top-mounted heat sink

GENERAL SPECIFICATIONS

DC INPUT VOLTAGE.....	See voltage/current rating chart.
EMI SUPPRESSION.....	Pi input filter.
REVERSE VOLTAGE PROTECTION	Internal shunt diode.
DC OUTPUT.....	See voltage/current rating chart.
CONTINUOUS OUTPUT POWER.....	40 watts maximum with <i>maximum</i> base-plate operating temperature of +85°C.
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 μ 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 _{pp} , maximum; 12V and 15V outputs, 75 mV _{pp} , maximum.
OPERATING FREQUENCY.....	300 kHz.

ENVIRONMENTAL OPERATING CHARACTERISTICS

OPERATING TEMPERATURE RANGE	-25°C to +85°C. See <i>Continuous Output Power</i> , above.
TEMPERATURE COEFFICIENT.....	\pm 0.02 percent/°C.
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

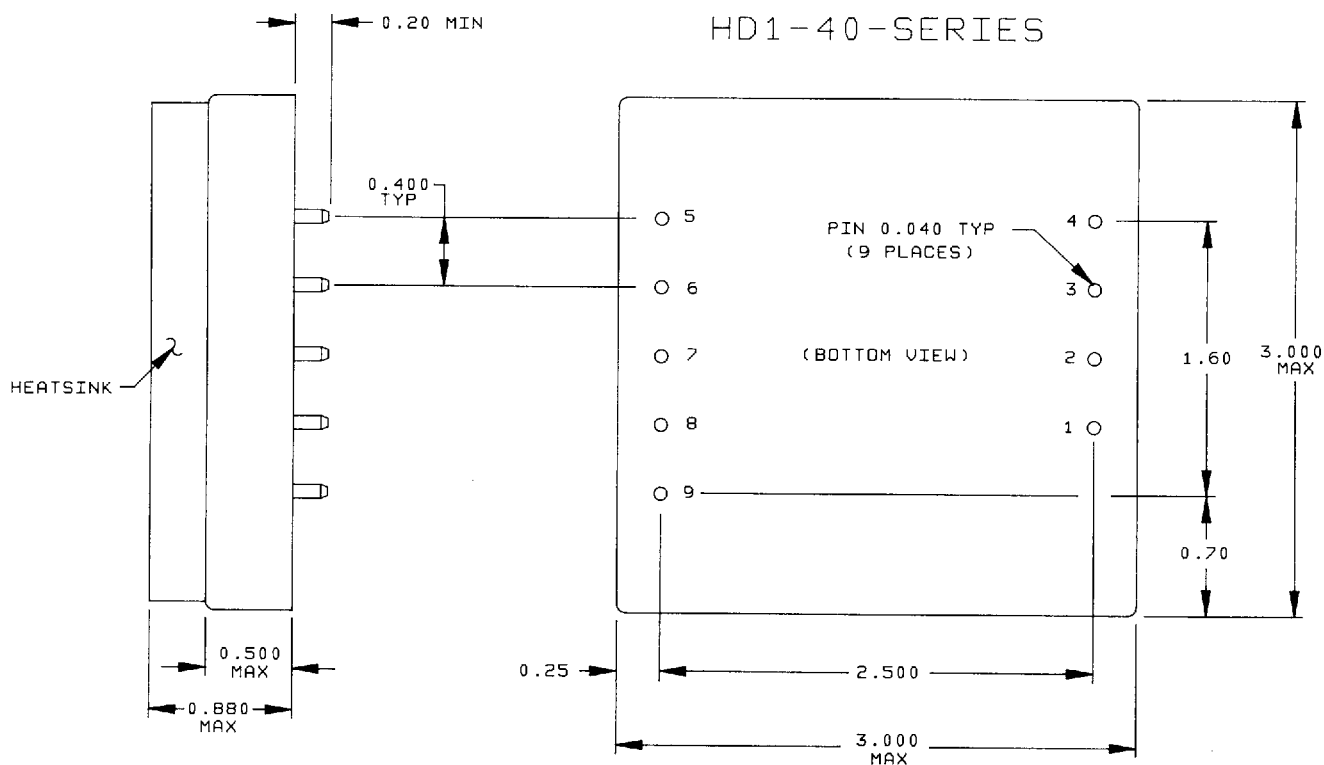
MEAN TIME BETWEEN FAILURES	>200,000 hours, per "Parts Stress" method in MIL-HDBK 217E (ground benign, 25°C).
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Model Number	DC Input Voltage			Nom. Input Current (A)	Output Voltage (V)	Output Current		Output Voltage Tolerance	Line Reg. (LL-HL)	Load Reg. (NL-FL)
	Min. (V)	Nom. (V)	Max. (V)			Min. (A)	Max. (A)			
HD1-40-5C	20	36	60	1.4	5.0	0.0	8.0	±1.0%	0.3%	0.5%
HD1-40-12C	20	36	60	1.4	12	0.0	3.5	±1.0%	0.3%	0.5%
HD1-40-15C	20	36	60	1.4	15	0.0	3.0	±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: Use 3A/125V slow-blow 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.

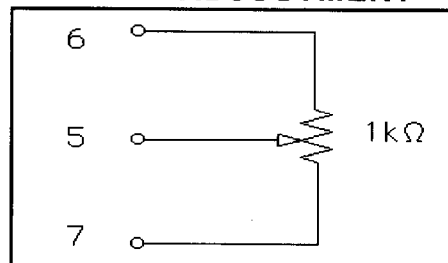
MECHANICAL OUTLINE AND PIN CONFIGURATION



PIN-OUT

Pin	Designation
1	- V IN
2	+ V IN
3	CASE
4	SHUTDOWN
5	OUT ADJUST
6	+ V OUT
7	- V OUT
8	+ SENSE
9	- SENSE

OUTPUT ADJUSTMENT



Notes:

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