

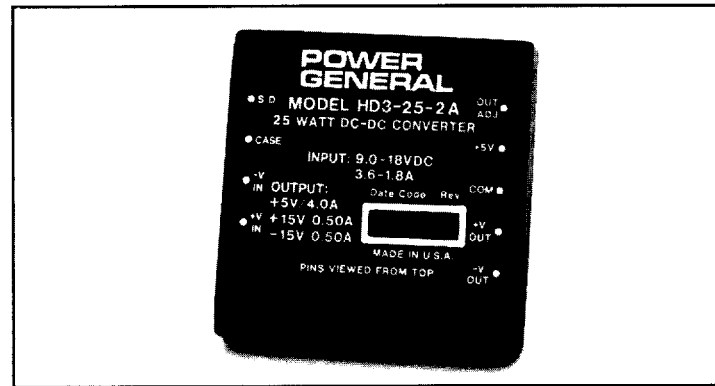
# HD3-25 SERIES

NIDEC CORP/ PWR GENL DIV 48E D ■ 6610921 0000965 3 ■ B-15-11

## 25W TRIPLE OUTPUT DC-DC CONVERTERS —WIDE INPUT RANGES, ULTRA-HIGH RELIABILITY—

### FEATURES

- Meets UL1950
- Meets CSA22.2-234/950
- Meets VDE0805/EN60950/IEC950
- Pi Input Filter
- Over-Voltage/Short-Circuit Protection
- Remote Shutdown
- Remote Output Voltage Adjust
- 2-Year Warranty
- **Minimum 400,000 Hours MTBF**



### APPLICATIONS

- Telecommunications Equipment
- Portable/Battery-Operated Equipment

*All HD3-25 models are packaged in a compact 3.0 x 3.0 x 0.5-inch copper case with six-sided shielding and are encapsulated with a flame-retardant material.*

### GENERAL SPECIFICATIONS

DC INPUT VOLTAGE (NOMINAL) .....	12V, 24V or 48V.
INRUSH CURRENT.....	25A, peak, 25 $\mu$ s.
EMI SUPPRESSION.....	Pi input filter.
REVERSE VOLTAGE PROTECTION .....	Internal shunt diode.
REFLECTED RIPPLE CURRENT .....	50 mA <sub>pp</sub> , maximum.
DC OUTPUT.....	See voltage/current rating chart.
CONTINUOUS OUTPUT POWER.....	25 watts, maximum.
OVER-VOLTAGE PROTECTION.....	Primary output only, ~6.8V.
SHORT-CIRCUIT PROTECTION.....	Indefinite.
EFFICIENCY.....	See voltage/current rating chart.
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.....	Primary output, 50 mV <sub>pp</sub> ; auxiliary outputs, 75 mV <sub>pp</sub> .
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 .....	>400,000 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 Current			Output Voltage Tolerance	Line Reg. (LL-HL)	Load Reg. (NL-FL)	Error Band	Efficiency		
	Min. (V)	Nom. (V)	Max. (V)		Output Voltage (V)	Min. (A)	Nom. (A)						Max. (A)	
	Output													
HD3-25-1A	9.0	12	18	2.8	V1	5.0	0.50	3.00	5.00	±1.0%	±0.3%	±0.5%	75%	
					V2	+12	0.05	0.40	0.50	±3.0%	±0.5%	±3.0%		±5.0%
					V3	-12	0.05	0.40	0.50	±3.0%	±0.5%	±3.0%		±5.0%
HD3-25-1B	18	24	36	1.4	V1	5.0	0.50	3.00	5.00	±1.0%	±0.3%	±0.5%	80%	
					V2	+12	0.05	0.40	0.50	±3.0%	±0.5%	±3.0%		±5.0%
					V3	-12	0.05	0.40	0.50	±3.0%	±0.5%	±3.0%		±5.0%
HD3-25-1C	36	48	72	0.7	V1	5.0	0.50	3.00	5.00	±1.0%	±0.3%	±0.5%	82%	
					V2	+12	0.05	0.40	0.50	±3.0%	±0.5%	±3.0%		±5.0%
					V3	-12	0.05	0.40	0.50	±3.0%	±0.5%	±3.0%		±5.0%
HD3-25-2A	9.0	12	18	2.8	V1	5.0	0.50	3.00	5.00	±1.0%	±0.3%	±0.5%	75%	
					V2	+15	0.05	0.33	0.50	±3.0%	±0.5%	±3.0%		±5.0%
					V3	-15	0.05	0.33	0.50	±3.0%	±0.5%	±3.0%		±5.0%
HD3-25-2B	18	24	36	1.4	V1	5.0	0.50	3.00	5.00	±1.0%	±0.3%	±0.5%	80%	
					V2	+15	0.05	0.33	0.50	±3.0%	±0.5%	±3.0%		±5.0%
					V3	-15	0.05	0.33	0.50	±3.0%	±0.5%	±3.0%		±5.0%
HD3-25-2C	36	48	72	0.7	V1	5.0	0.50	3.00	5.00	±1.0%	±0.3%	±0.5%	82%	
					V2	+15	0.05	0.33	0.50	±3.0%	±0.5%	±3.0%		±5.0%
					V3	-15	0.05	0.33	0.50	±3.0%	±0.5%	±3.0%		±5.0%

- Notes:
- External input line fuse is recommended: for 12V input, use 5A /125V fuse; for 24V input, use 2A /125V fuse; for 48V input, use 1A /125V fuse.
  - Sum of primary and auxiliary output must not exceed 25W maximum power output rating of the supply.
  - All measurements are at nominal input voltage, nominal load and +25°C, unless otherwise specified.
  - Line regulation is measured at nominal load over the full input voltage range.
  - Auxiliary output load regulation is measured with the primary output at +5.0V/3.0A as auxiliary output is changed from minimum to nominal value.
  - Error band is defined as static output regulation at +25°C, the sum of initial set point accuracy, line voltage within specified limits, and load currents within specified limits.

**Series HD3-25 dc-dc converters are also available with tightly regulated auxiliary outputs. For information, contact Power General.**

### REMOTE ON/OFF CONTROL

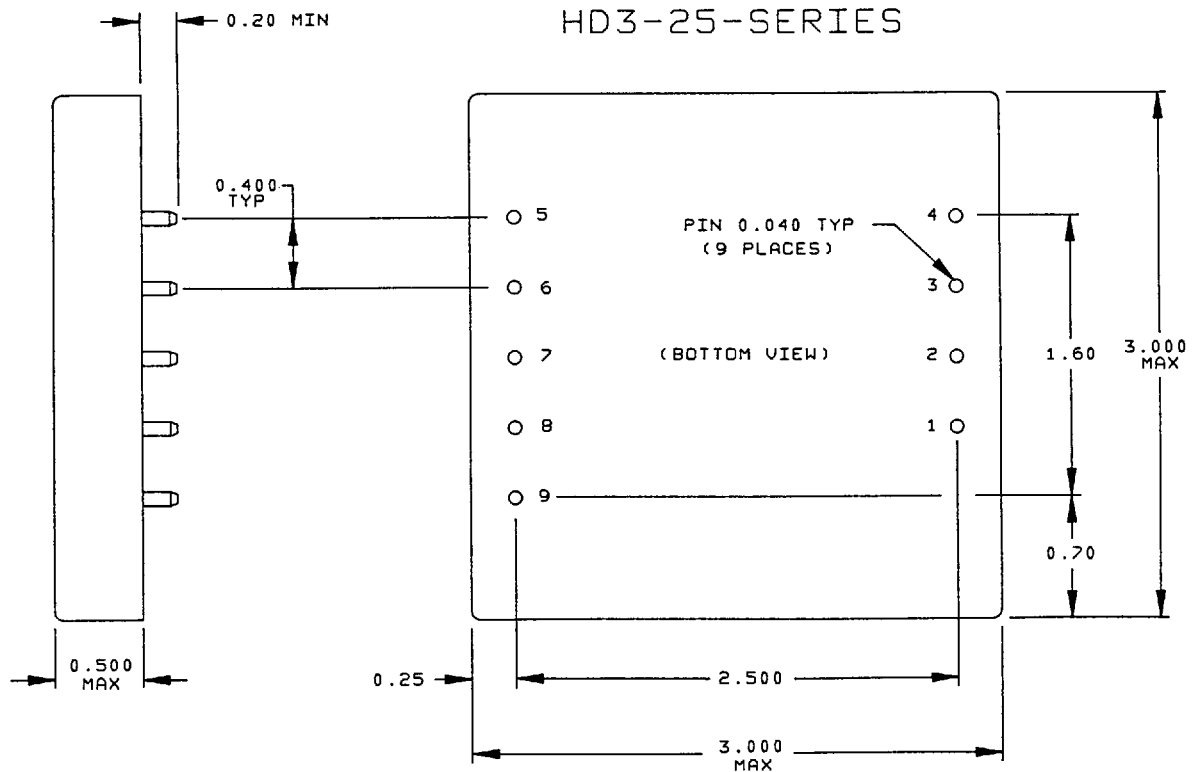
LOGIC COMPATIBILITY .....Open-collector TTL or CMOS.  
 ON CONTROL INPUT VOLTAGE.....Open circuit.  
 OFF CONTROL INPUT VOLTAGE.....<0.8V.  
 CONTROL COMMON.....Reference to MINUS power supply input

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## MECHANICAL OUTLINE AND PIN CONFIGURATION



**Notes:**

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

### PIN-OUT

Pin	12V and 24V Input	48V Input
1	+ V IN	- V IN
2	- V IN	+ V IN
3	CASE	CASE
4	SHUTDOWN	SHUTDOWN
5	OUT ADJUST	OUT ADJUST
6	V1	V1
7	COMMON	COMMON
8	V2	V2
9	V3	V3

### OUTPUT ADJUSTMENT

