

DC1-1 AND DC2-1 SERIES

NIDEC CORP/ PWR GENL DIV 48E D ■ 6610921 0000940 9 ■

B-15-11

1W SINGLE AND DUAL OUTPUT DC-DC CONVERTERS

FEATURES

- Indefinite Short-Circuit Protection
- 500 VDC Input/Output Isolation
- Pi Input Filter
- Tight Line/Load Regulation
- Low-Noise Operation
- 24-Pin DIP Compatible
- 5-Year Warranty
- **737,000 Hours Minimum MTBF**



APPLICATIONS

- A/D and D/A Converters
- Operational Amplifiers
- RS232 Loop Drivers
- Bias Power for RAMs, ROMs, PROMs

All DC1-1 and DC2-1 models have a phenolic, UL94V-rated case and are encapsulated with a flame-retardant potting material.

GENERAL SPECIFICATIONS

DC INPUT VOLTAGE	See voltage/current rating chart.
INPUT CURRENT	See voltage/current rating chart.
EMI FILTER	Pi input filter, standard.
DC OUTPUT	See voltage/current rating chart.
CONTINUOUS OUTPUT POWER	1watt, maximum.
OUTPUT VOLTAGE TOLERANCE	±5 percent.
EFFICIENCY	50 percent, minimum.
CURRENT LIMIT	Output thermal limited.
NOISE & RIPPLE	35 mV _{pp} , maximum.
LINE REGULATION	See voltage/current rating chart.
LOAD REGULATION	See voltage/current rating chart.
CROSS-REGULATION	±0.1 percent, maximum.
ISOLATION VOLTAGE	500 VDC, input to output.
ISOLATION CAPACITANCE	100 pF, typical.
TRANSIENT RESPONSE	50 μs, maximum, to within 1 percent of V _{OUT} with 25 percent step load change. (See Note 4, voltage/current rating chart.)

ENVIRONMENTAL OPERATING CHARACTERISTICS

TEMPERATURE RANGE	-25°C to +70°C, no derating.
TEMPERATURE COEFFICIENT	±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	-40°C to +100°C.
RELATIVE HUMIDITY	0 to 95 percent, non-condensing.

RELIABILITY

MEAN TIME BETWEEN FAILURES	>1,140,000 hours for single output models, >737,000 hours for dual output models, per MIL-HDBK 217E Parts Stress Method. (Ground benign, T _A =+25°C.)
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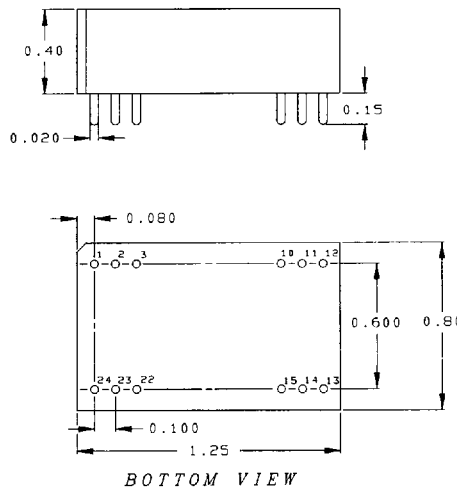
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Model Number	DC Input Voltage			Input Current		Max. Reflected Ripple (mA pp)	DC Output Voltage (V)	Output Current (mA)	Line Reg. (LL-HL)	Load Reg. (NL-FL)
	Min. (V)	Nom. (V)	Max. (V)	No Load (mA)	Full Load (mA)					
DC1-1-5/5	4.5	5.0	5.5	50	200	30	5.0	100	0.2%	0.1%
DC1-1-5/12	4.5	5.0	5.5	70	385	30	12	80	0.8%	0.8%
DC1-1-5/15	4.5	5.0	5.5	50	390	30	15	65	0.8%	0.8%
DC1-1-12/5	4.5	5.0	5.5	15	84	30	5.0	100	0.2%	0.2%
DC1-1-12/12	10.8	12	13.2	25	160	30	12	80	0.8%	0.8%
DC1-1-12/15	10.8	12	13.2	20	160	30	15	65	0.8%	0.8%
DC2-1-5/12	4.5	5.0	5.5	55	425	35	±12	40	0.2%	0.2%
DC2-1-5/12A	4.5	5.0	5.5	35	370	35	±12	40	0.2%	0.2%
DC2-1-5/15	4.5	5.0	5.5	50	385	35	±15	33	0.2%	0.2%
DC2-1-5/15A	4.5	5.0	5.5	55	370	35	±15	33	0.2%	0.2%
DC2-1-12/12	10.8	12	13.2	30	150	35	±12	40	0.2%	0.2%
DC2-1-12/12A	10.8	12	13.2	20	130	35	±12	40	0.2%	0.2%
DC2-1-12/15	10.8	12	13.2	30	155	35	±15	33	0.2%	0.2%
DC2-1-12/15A	10.8	12	13.2	25	130	35	±15	33	0.2%	0.2%

Notes:

1. Converters with ±12V or ±15V output can be used as 24V or 30V supplies.
2. Total output power must not exceed 1 watt.
3. All measurements are at nominal input and full load, unless otherwise specified.
4. Maximum transient response deviation is 10 mV for 5.0V output and 150 mV for 12V and 15V output.

MECHANICAL OUTLINE AND PIN CONFIGURATION



Notes:

1. Dimensions shown are in inches.
2. Tolerance = 0.00 ±0.01.
0.000 ±0.005.
3. Module weight = 0.5 oz (0.014 kg).

PIN-OUT

Single Output Models		Dual Output Models With Suffix 'A'		Dual Output Models Without Suffix 'A'	
Pin	Designation	Pin	Designation	Pin	Designation
1, 24	+ V IN	1, 2, 3	+ V IN	1, 24	+ V IN
12, 13	- V IN	22, 23, 24	- V IN	12, 13	- V IN
11, 14	+ V OUT	15	+ V OUT	11, 14	+ V1 OUT
10, 15	- V OUT	13	- V OUT	10, 15	- V1 OUT
2, 3,	NO	10, 11	COMMON	3, 22	+ V2 OUT
22, 23	CONNECTION	12, 14	N/C	2, 23	- V2 OUT