

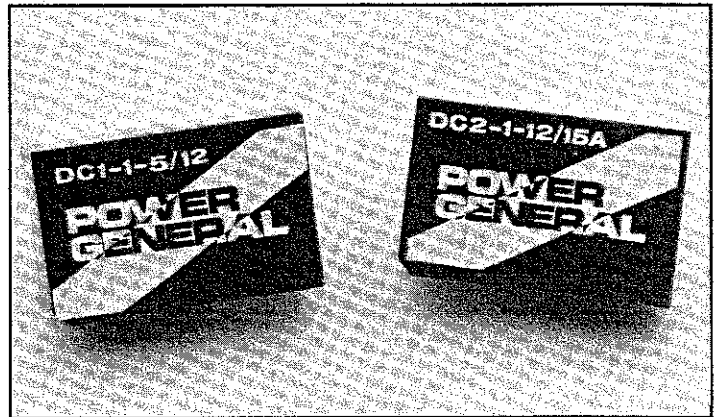
## 1W SINGLE AND DUAL OUTPUT DC-DC CONVERTERS

### 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 .....	1 watt, maximum.
OUTPUT VOLTAGE TOLERANCE .....	±5 percent.
EFFICIENCY .....	50 percent, minimum.
CURRENT LIMIT .....	Output thermal limited.
NOISE & RIPPLE .....	35 mV <sub>pp</sub> , 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 <sub>OUT</sub> 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 <sub>A</sub> =+25°C.)
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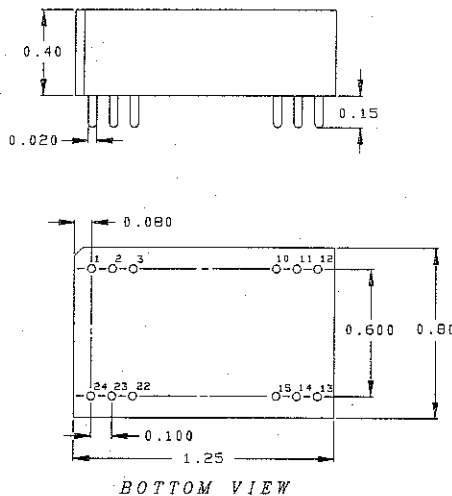
# DC1-1 AND DC2-1 SERIES

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