

## 5 WATT DC/DC CONVERTERS CEM2200 SERIES

- Utilizes Surface Mount Technology
- 2:1 Input Range
- 10 Watts/Cubic Inch
- Efficiency to 82%
- 300 kHz Switching Frequency
- Conductive EMI Meets VDE0871 A

### SPECIFICATIONS

All Specifications Typical at Nominal Line, Full Load and 25°C Unless Otherwise Noted.

### INPUT SPECIFICATIONS

Input Voltage Range 12V .....	9-18V
24V .....	18-36V
48V .....	36-72V
Input Filter .....	Pi Type

### OUTPUT SPECIFICATIONS

Voltage Accuracy, Single Output .....	± 1.0% max.
Dual Output, + OUTPUT .....	± 1.0% max.
- OUTPUT .....	± 1.0% max.
Voltage Balance, Balanced Load	
Dual Output .....	± 1.0% max.

### TRANSIENT RESPONSE

Single, 25% step load change .....	< 200u sec.
Dual, FL-½FL ± 1% Error Band .....	< 200u sec.
Ripple and Noise, 20 MHz BW	
Single .....	75 mV P-P max.
Dual .....	75 mV P-P max.
Temperature Coefficient .....	± 0.2%/°C max.
Short Circuit Protection .....	Continuous.

### GENERAL SPECIFICATIONS

Efficiency .....	See Table
Isolation Voltage .....	1500 VDC min.
Isolation Resistance .....	10 <sup>9</sup> ohms min.
Switching Frequency .....	300 KHz

### ENVIRONMENTAL SPECIFICATIONS

Operating Temperature Range .....	- 25°C to + 71°C
Derating .....	None
Storage Temperature Range .....	- 55°C to + 105°C
Cooling .....	Free Air Convection

### PHYSICAL SPECIFICATIONS

Case Material <sup>1</sup> .....	Black coated copper with Non-Conductive Base
Dimensions .....	1.25 x 0.8 x 0.4 inches (31.8 x 20.3 x 10.2mm)

### NOTE

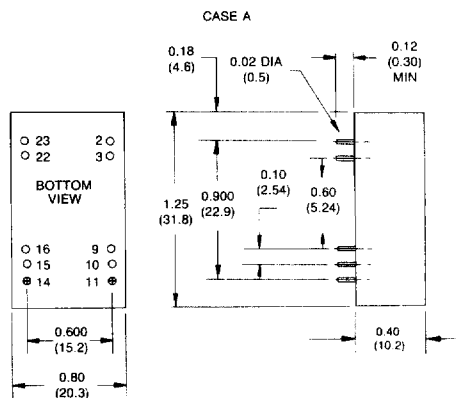
1. Metal Case Only

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT <sup>1</sup>		% EFF	REGULATION <sup>2</sup>		CASE
				NO LOAD	FULL LOAD		LINE <sup>3</sup>	LOAD <sup>4</sup>	
CEM2201	9-18 VDC	5 VDC	1000 mA	30 mA	570 mA	73	± 0.2%	± 0.2%	A
CEM2202	9-18 VDC	12 VDC	470 mA	20 mA	585 mA	80	± 0.2%	± 0.2%	A
CEM2203	9-18 VDC	15 VDC	400 mA	20 mA	625 mA	80	± 0.2%	± 0.2%	A
CEM2205	9-18 VDC	± 12 VDC	± 230 mA	20 mA	575 mA	80	± 0.2%	± 1%	A
CEM2206	9-18 VDC	± 15 VDC	± 190 mA	20 mA	590 mA	80	± 0.2%	± 1%	A
CEM2211	18-36 VDC	5 VDC	1000 mA	25 mA	280 mA	74	± 0.2%	± 0.2%	A
CEM2212	18-36 VDC	12 VDC	470 mA	25 mA	285 mA	82	± 0.2%	± 0.2%	A
CEM2213	18-36 VDC	15 VDC	400 mA	25 mA	305 mA	82	± 0.2%	± 0.2%	A
CEM2215	18-36 VDC	± 12 VDC	± 230 mA	25 mA	280 mA	82	± 0.2%	± 1%	A
CEM2216	18-36 VDC	± 15 VDC	± 190 mA	25 mA	290 mA	82	± 0.2%	± 1%	A
CEM2221	36-72 VDC	5 VDC	1000 mA	15 mA	135 mA	78	± 0.2%	± 0.2%	A
CEM2222	36-72 VDC	12 VDC	470 mA	15 mA	146 mA	80	± 0.2%	± 0.2%	A
CEM2223	36-72 VDC	15 VDC	400 mA	15 mA	155 mA	80	± 0.2%	± 0.2%	A
CEM2225	36-72 VDC	± 12 VDC	± 230 mA	15 mA	143 mA	80	± 0.2%	± 1%	A
CEM2226	36-72 VDC	± 15 VDC	± 190 mA	15 mA	148 mA	80	± 0.2%	± 1%	A

NOTES: 1. Nominal input Voltage 12, 24 or 48 VDC  
2. Maximum  
3. Low Line to High Line  
4. Measured from Full Load ¼ Load (Single) Measured from Full Load to ½ Load (Dual)

Pin Connections		
Pin	Single Output	Dual Output
2	- V Input	- V Input
3	- V Input	- V Input
9	NC*	Common
10	NC*	NC*
11	NC*	- V Output
14	+ V Output	+ V Output
15	NC*	NC*
16	- V Output	Common
22	+ V Input	+ V Input
23	+ V Input	+ V Input

\* NC: NO CONNECTION



ALL DIMENSIONS IN INCHES (mm)  
Note 1: Cut-corner marking Pin No. 1  
Note 2: Pin Size is 0.02 inch (0.5mm)  
Dia or 0.020" 0.014 inch  
Note 3: Tolerance . x x = ± 0.02  
. x x = ± (0.010)