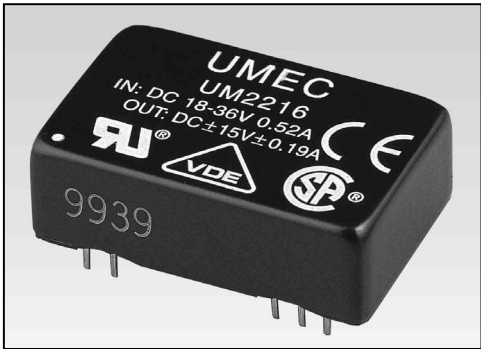


# UM2200 SERIES

## 5 Watt DC-DC Converters

- ◆ Utilizes Surface Mount Technology
- ◆ 2:1 Input Range
- ◆ 12.5 Watts/Cubic Inch
- ◆ Efficiency to 82%
- ◆ 300 KHz Switching Frequency
- ◆ Conductive EMI Meet CISPR22 Class A



### SPECIFICATIONS

All specifications are typical at nominal line, full load and 25°C unless otherwise noted.

### GENERAL SPECIFICATIONS

- |                                   |  |
|-----------------------------------|--|
| Efficiency .....                  | See Table                                    |
| Isolation Voltage .....           | 1500 VDC min.                                |
| Isolation Resistance .....        | 10 <sup>8</sup> ohms min.                    |
| Switching Frequency .....         | 300KHz                                       |
| Operating Temperature Range ..... | -25°C to +71°C                               |
| Ambient, None Derating .....      | See NOTE 1                                   |
| Cooling .....                     | Free-Air Convection                          |
| Storage Temperature Range .....   | -55°C to +105°C                              |
| Case Material <sup>2</sup> .....  | Black-Coated Copper with Non-Conductive Base |
| Dimensions Case A .....           | 1.25*0.80*0.40 inches (31.75*20.32*10.16mm)  |
| Weight .....                      | 18g  |

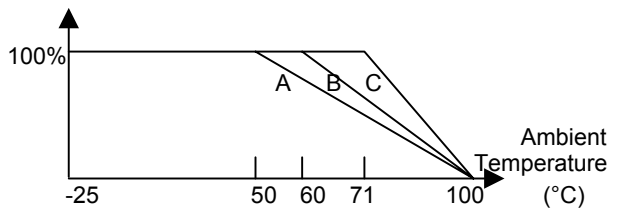
### INPUT SPECIFICATIONS

- |                                |            |
|--------------------------------|------------|
| Input Voltage Range, 12V ..... | 9-18V      |
| 24V .....                      | 18-36V     |
| 48V .....                      | 36-75V     |
| Input Filter .....             | Pi Network |

### OUTPUT SPECIFICATIONS

- |  |                |
|--|----------------|
| Voltage Accuracy, Single Output .....          | ±1% max.       |
| Dual +Output .....                             | ±1% max.       |
| -Output .....                                  | ±1% max.       |
| Voltage Balance Dual Output at Full Load ..... | ±1% max.       |
| Transient response                             |                |
| Single, 25% Step Load Change .....             | <200 u sec.    |
| Dual, FL-1/2FL, ±1% Error Band .....           | <200 u sec.    |
| Ripple and Noise, 20MHz BW .....               | 10mV RMS max.  |
|  | 75mV P-P max.  |
| Temperature Coefficient .....                  | ±0.02%/°C max. |
| Short Circuit Protection .....                 | Continuous     |

- NOTES:  
 1. Output power



- A: For UM2201  
 B: For UM2202, 2203, 2205, 2206, 2209  
 C: For the other models  
 Maximum case temperature under any operating condition must not be exceeded 105°C  
 2. Metal case only.



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MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT		% EFF	REGULATION <sup>1</sup>		CASE
				NO LOAD	FULL LOAD		LINE <sup>2</sup>	LOAD <sup>3</sup>	
UM2201	12 VDC	5 VDC	1000 mA	45 mA	595 mA	70	±0.2%	±0.5%	A
UM2202		12 VDC	470 mA	35 mA	625 mA	75	±0.2%	±0.5%	
UM2203		15 VDC	400 mA	35 mA	665 mA	75	±0.2%	±0.5%	
UM2205		±12 VDC	±230 mA	35 mA	615 mA	75	±0.2%	±1.0%	
UM2206		±15 VDC	±190 mA	35 mA	635 mA	75	±0.2%	±1.0%	
UM2209		3.3 VDC	1000 mA	45 mA	425 mA	69	±0.2%	±0.5%	
UM2211	24 VDC	5 VDC	1000 mA	25 mA	280 mA	74	±0.2%	±0.5%	A
UM2212		12 VDC	470 mA	25 mA	295 mA	80	±0.2%	±0.5%	
UM2213		15 VDC	400 mA	25 mA	315 mA	80	±0.2%	±0.5%	
UM2215		±12 VDC	±230 mA	25 mA	290 mA	80	±0.2%	±1.0%	
UM2216		±15 VDC	±190 mA	25 mA	295 mA	80	±0.2%	±1.0%	
UM2219		3.3 VDC	1000 mA	25 mA	200 mA	71	±0.2%	±0.5%	
UM2221	48 VDC	5 VDC	1000 mA	15 mA	135 mA	78	±0.2%	±0.5%	A
UM2222		12 VDC	470 mA	15 mA	146 mA	80	±0.2%	±0.5%	
UM2223		15 VDC	400 mA	15 mA	152 mA	82	±0.2%	±0.5%	
UM2225		±12 VDC	±230 mA	15 mA	143 mA	80	±0.2%	±1.0%	
UM2226		±15 VDC	±190 mA	15 mA	148 mA	80	±0.2%	±1.0%	
UM2229		3.3 VDC	1000 mA	15 mA	95 mA	73	±0.2%	±0.5%	

NOTES:1. Maximum.

2. Measured from low line to high line.

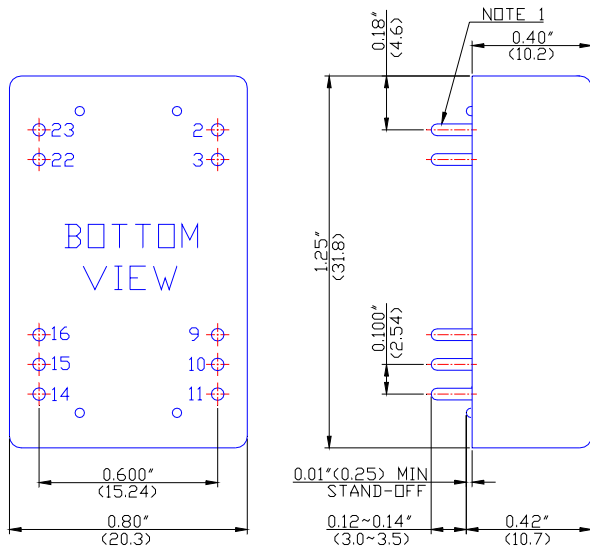
3. Measured from full load to 1/4 full load (single).

4. Measured from full load to 1/2 full load (dual).

5. Maximum capacitive load across the each output ports should not be over following indicated values.

MODEL NUMBER	UM 2201 2209	UM 2202	UM 2203	UM 2205	UM 2206	UM 2211 2219	UM 2212	UM 2213	UM 2215	UM 2216	UM 2221 2229	UM 2222	UM 2223	UM 2225	UM 2226
MAXIMUM <sup>4</sup> CAPACITIVE LOAD (uF)	+1000	+220	+150	+47 -47	+47 -47	+1000	+220	+150	+47 -47	+47 -47	+1000	+220	+150	+47 -47	+47 -47

CASE A



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: Pin size is 0.020±0.005 inches (0.5mm) dia.

or 0.020\*0.012 inches

Note 2: Tolerance .xx =±0.04" .xxx =±0.010"



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