

# UM1300 SERIES

## 25 to 30 Watt DC-DC Converters

- 4:1 Input Range
- 30W Isolated Output
- Efficiency to 83%
- Remote On/Off Control
- 100 KHz Switching Frequency
- Six-Sided Shield

### SPECIFICATIONS

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

#### INPUT SPECIFICATIONS

Input Voltage Range, 24V ..... 9-36V  
48V ..... 18-72V  
Input Filter ..... Pi Network  
Reverse Voltage Protection<sup>1</sup> ..... Internal Shunt Diode  
Use External Fuse

#### OUTPUT SPECIFICATIONS

Voltage Accuracy, Single Output .....  $\pm 1\%$  max.  
Dual + Output .....  $\pm 1\%$  max.  
- Output .....  $\pm 3\%$  max.  
Voltage Balance, Dual Output at Full Load  
.....  $\pm 1.0\%$  max.  
Transient Response  
Single, 25% Step Load Change .....  $< 500 \mu$  sec.  
Dual, FL-1/2FL,  $\pm 1\%$  Error Band .....  $< 500 \mu$  sec.  
External Trim Adj. Range .....  $\pm 10\%$   
Ripple and Noise, 20MHz BW ..... 10mV RMS max.  
75mV P-P max.  
Overvoltage Protection, Trip Point (Zener Clamp Type)  
..... See Table  
Short Circuit Protection ..... Continuous  
Temperature Coefficient .....  $\pm 0.02\%/^{\circ}\text{C}$   
Line Regulation<sup>2</sup> .....  $\pm 0.5\%$  max.  
Load Regulation<sup>3</sup> .....  $\pm 1\%$  max.

### GENERAL SPECIFICATIONS

Efficiency ..... See Table  
Isolation Voltage ..... 500 VDC min.  
Isolation Resistance .....  $10^8$  ohms min.  
Switching Frequency ..... 100KHz  
Case Grounding ..... Capacity Coupled to Input  
Operating Temperature Range  
Ambient, None Derating .....  $-25^{\circ}\text{C}$  to  $+71^{\circ}\text{C}$   
Cooling ..... Free Air Convection  
Storage Temperature Range .....  $-55^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$   
EMI/RFI ..... Six-Sided Continuous Shield  
Dimensions ..... 2.56 x 4.56 x 0.83 inches  
(65 x 115.8 x 21.1 mm)  
Case Material ..... Black-Coated Copper With  
Non-Conductive Base  
Weight ..... 260g

#### NOTES:

1. Determine the correct fuse size by calculating the maximum DC current drain at low line input, maximum load and then adding 20% to 25% to get the desired fuse size.
2. Measured from high line to low line.
3. Measured from full load to 1/4 full load.

| O.V.P          |        |
|----------------|--------|
| Output Voltage | O.V.P. |
| 5 VDC          | 6.8V   |
| 6 VDC          | 8.2V   |
| 12 VDC         | 15V    |
| 15 VDC         | 18V    |

| REMOTE ON/OFF CONTROL    |                              |
|--------------------------|------------------------------|
| Logic Compatibility..... | CMOS or Open Collector TTL   |
| Ec-ON, .....             | $> +5.5$ VDC or Open Circuit |
| Ec-OFF, .....            | $< 1.8$ VDC                  |
| Control Common .....     | Referenced to Input Minus    |

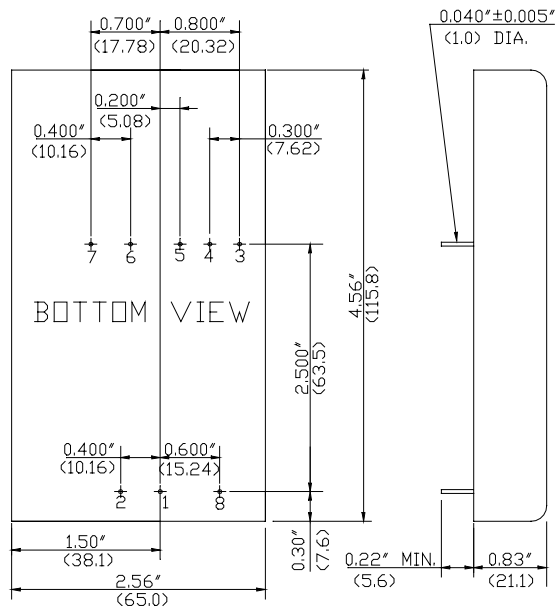


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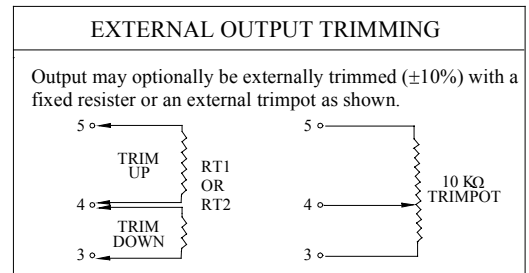
| MODEL NUMBER | INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | INPUT CURRENT |           | % EFF | CASE |
|--------------|---------------|----------------|----------------|---------------|-----------|-------|------|
|              |               |                |                | NO LOAD       | FULL LOAD |       |      |
| UM1301       | 24VDC         | 5 VDC          | 5000 mA        | 25 mA         | 1360 mA   | 76    | F    |
| UM1302       |               | 6 VDC          | 4500 mA        | 30 mA         | 1480 mA   | 77    |      |
| UM1303       |               | 12 VDC         | 2500 mA        | 30 mA         | 1600 mA   | 78    |      |
| UM1304       |               | 15 VDC         | 2000 mA        | 30 mA         | 1580 mA   | 79    |      |
| UM1305       |               | ± 12 VDC       | ± 1250 mA      | 30 mA         | 1560 mA   | 80    |      |
| UM1306       |               | ± 15 VDC       | ± 1000 mA      | 30 mA         | 1560 mA   | 80    |      |
| UM1311       | 48VDC         | 5 VDC          | 5000 mA        | 20 mA         | 680 mA    | 77    | F    |
| UM1312       |               | 6 VDC          | 4500 mA        | 20 mA         | 720 mA    | 78    |      |
| UM1313       |               | 12 VDC         | 2500 mA        | 20 mA         | 780 mA    | 80    |      |
| UM1314       |               | 15 VDC         | 2000 mA        | 25 mA         | 780 mA    | 80    |      |
| UM1315       |               | ± 12 VDC       | ± 1250 mA      | 25 mA         | 760 mA    | 82    |      |
| UM1316       |               | ± 15 VDC       | ± 1000 mA      | 25 mA         | 760 mA    | 82    |      |

#### CASE F



All dimensions in inches(mm).  
Tolerance .xx =±0.04  
.xxx=±0.010

| Pin Connections |                  |               |
|-----------------|------------------|---------------|
| Pin             | Single Output    | Dual Output   |
| 1               | +Input           | +Input        |
| 2               | -Input           | -Input        |
| 3               | +Sense/Trim Down | +Output       |
| 4               | Output Trim      | Common        |
| 5               | -Sense/Trim Up   | -Output       |
| 6               | +Output          | No Pin        |
| 7               | - Output         | No Pin        |
| 8               | Remote On/Off    | Remote On/Off |



#### NOTE:

1. If remote sensing is not utilized, output sense pins must be jumpered to respective output power pins, for normal operation connect Pin NO.3 to Pin NO.6 and Pin NO.5 to Pin NO.7.



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