

# UM3000 SERIES

Green Product  
**RoHS**

## 9-20Watt DC-DC Converter

- ◆ Synchronous Rectifier Topology
- ◆ Surface Mount Technology
- ◆ Remote On/Off Control
- ◆ Efficiency to 88%
- ◆ Standard 2"×1" Package and Pinout
- ◆ Over Temperature Protection
- ◆ RoHS Compliant



## SPECIFICATIONS

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

### INPUT SPECIFICATIONS

|                                       |            |
|---------------------------------------|------------|
| Input Voltage Range, 12V Nominal..... | 9-18VDC    |
| 24V Nominal .....                     | 18-36VDC   |
| 48V Nominal.....                      | 36-75VDC   |
| Input Undervoltage Shutdown, 12V..... | 8VDC typ.  |
| 24V.....                              | 16VDC typ. |
| 48V.....                              | 33VDC typ. |
| Input Filter .....                    | Pi Network |

### OUTPUT SPECIFICATIONS

|                                                      |                       |
|------------------------------------------------------|-----------------------|
| Voltage Accuracy .....                               | ±1% max.              |
| External Trim Adj. Range .....                       | ±10%                  |
| Line Regulation <sup>1</sup> .....                   | ±0.5% max.            |
| Load Regulation <sup>2</sup> , Single 1.5-2.5V ..... | ±0.5% typ. ±1% max.   |
| 3.3V-15V .....                                       | ±0.5% max.            |
| Dual .....                                           | ±0.5% typ. ±2.0% max. |
| Ripple and Noise, 20MHz-BW <sup>3</sup> .....        | ≤25 mV RMS max.       |
|                                                      | 100 mV P-P max.       |
| Temperature Coefficient .....                        | ±0.02%/°C max.        |
| Overvoltage Protection Trip Point                    |                       |
| 1.5V .....                                           | 2.0V typ.             |
| 2.5V .....                                           | 3.3V typ.             |
| 3.3V .....                                           | 4.3V typ.             |
| 5V .....                                             | 6.8V typ.             |
| 12V .....                                            | 15V typ.              |
| 15V .....                                            | 18V typ.              |
| Short Circuit Protection .....                       | Continuous            |
| Over Temperature Shutdown Point <sup>4</sup> .....   | 120°C typ.            |
| Minimum Load <sup>5</sup> .....                      | 10% Full Load         |

### GENERAL SPECIFICATIONS

|                                           |          |
|-------------------------------------------|----------|
| Isolation Voltage (Input to Output) ..... | 1500VDC  |
| Isolation Resistance .....                | 100 Mohm |



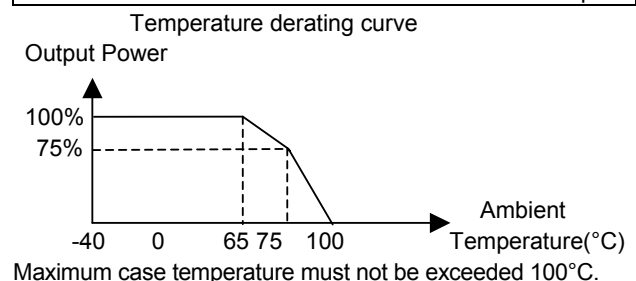
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|                                                                       |                                                 |
|-----------------------------------------------------------------------|-------------------------------------------------|
| Switching Frequency .....                                             | 400 KHz typ.                                    |
| Transient Response<br>(100% to 50% full load at ±1% error band) ..... | ≤500us                                          |
| Case Material .....                                                   | Black Coated Copper With<br>Non-conductive Base |
| Operating Temperature Range,<br>Ambient, 20W, None Derating .....     | -40°C to +65°C                                  |
| Cooling .....                                                         | Free Air Convection                             |
| Storage Temperature .....                                             | -40°C to +105°C                                 |

### NOTES:

1. Measure from high line to low line.
2. Measure Single: from full load to 1/4 load, Dual: load balanced from full load to 1/4 load.
3. Measure with 1 uF ceramic cap. connected to the output pins.
4. Non-latching shutdown protection.
5. This converter require a minimum 10% loading on the output to maintain specified regulation operation under minimum load conditions will not damage these devices. However they may not meet all listed specification.
6. Standard product is active high, active low remote On/Off option is available, to order suffix a "N" to the model number e.g.: UM3021N.

| REMOTE ON/OFF CONTROL     |                            |
|---------------------------|----------------------------|
| Logic Compatibility ..... | CMOS or Open Collector TTL |
| Converter ON .....        | >+2.5Vdc or open circuit   |
| Converter OFF .....       | <+0.8Vdc or jump to pin2   |
| Control common .....      | pin2                       |



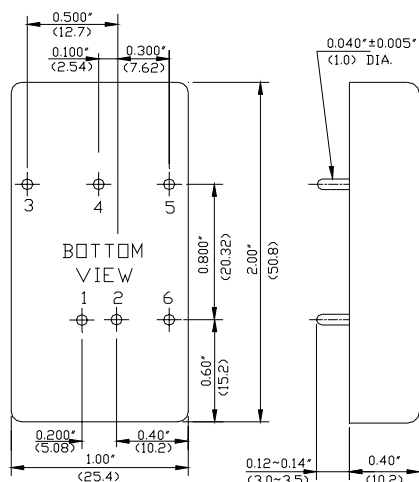
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| MODEL NUMBER | INPUT RANGE          | OUTPUT VOLTAGE | OUTPUT CURRENT | INPUT CURRENT |           | % EFF | Maximum Capacitive Load(uF) | CASE |
|--------------|----------------------|----------------|----------------|---------------|-----------|-------|-----------------------------|------|
|              |                      |                |                | NO LOAD       | FULL LOAD |       |                             |      |
| UM3001       | 9-18VDC<br>(12VDC)   | 5 VDC          | 4000 mA        | 120 mA        | 1916 mA   | 87    | 6800                        | B    |
| UM3002       |                      | 3.3 VDC        | 4250 mA        |               | 1359 mA   | 86    | 6800                        |      |
| UM3003       |                      | 2.5 VDC        | 6000 mA        |               | 1470 mA   | 85    | 6800                        |      |
| UM3004       |                      | 12 VDC         | 1670 mA        |               | 1942 mA   | 86    | 1000                        |      |
| UM3005       |                      | 15 VDC         | 1340 mA        |               | 1947mA    | 86    | 1000                        |      |
| UM3006       |                      | ±5VDC          | ±2000 mA       |               | 1916 mA   | 87    | 1000                        |      |
| UM3007       |                      | ±12VDC         | ±835 mA        |               | 1898 mA   | 88    | 330                         |      |
| UM3008       |                      | ±15VDC         | ±670 mA        |               | 1903 mA   | 88    | 330                         |      |
| UM3009       |                      | 1.5VDC         | 6000 mA        |               | 926 mA    | 81    | 6800                        |      |
| UM3011       | 18-36 VDC<br>(24VDC) | 5 VDC          | 4000 mA        | 80 mA         | 947 mA    | 88    | 6800                        | B    |
| UM3012       |                      | 3.3 VDC        | 4250 mA        |               | 672 mA    | 87    | 6800                        |      |
| UM3013       |                      | 2.5 VDC        | 6000 mA        |               | 727 mA    | 86    | 6800                        |      |
| UM3014       |                      | 12 VDC         | 1670 mA        |               | 960 mA    | 87    | 1000                        |      |
| UM3015       |                      | 15 VDC         | 1340 mA        |               | 963 mA    | 87    | 1000                        |      |
| UM3016       |                      | ±5VDC          | ±2000 mA       |               | 947 mA    | 88    | 1000                        |      |
| UM3017       |                      | ±12VDC         | ±835 mA        |               | 938 mA    | 89    | 330                         |      |
| UM3018       |                      | ±15VDC         | ±670 mA        |               | 941 mA    | 89    | 330                         |      |
| UM3019       |                      | 1.5VDC         | 6000 mA        |               | 457 mA    | 82    | 6800                        |      |
| UM3021       | 36-75 VDC<br>(48VDC) | 5 VDC          | 4000 mA        | 40 mA         | 474 mA    | 88    | 6800                        | B    |
| UM3022       |                      | 3.3 VDC        | 4250 mA        |               | 336 mA    | 87    | 6800                        |      |
| UM3023       |                      | 2.5 VDC        | 6000 mA        |               | 363 mA    | 86    | 6800                        |      |
| UM3024       |                      | 12 VDC         | 1670 mA        |               | 480 mA    | 87    | 1000                        |      |
| UM3025       |                      | 15 VDC         | 1340 mA        |               | 481 mA    | 87    | 1000                        |      |
| UM3026       |                      | ±5VDC          | ±2000 mA       |               | 474 mA    | 88    | 1000                        |      |
| UM3027       |                      | ±12VDC         | ±835 mA        |               | 469 mA    | 89    | 330                         |      |
| UM3028       |                      | ±15VDC         | ±670 mA        |               | 471 mA    | 89    | 330                         |      |
| UM3029       |                      | 1.5VDC         | 6000 mA        |               | 229 mA    | 82    | 6800                        |      |

NOTE:1.Other output voltage can be supported upon request.

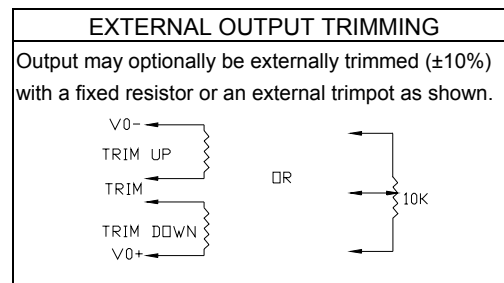
2.Maximum capacitive load across the output ports should not be over indicated values.

## CASE B



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

| PIN CONNECTIONS |                       |         |
|-----------------|-----------------------|---------|
| PIN NUMBER      | PIN FUNCTION          |         |
|                 | Single                | Dual    |
| 1               | +Input                | +Input  |
| 2               | -Input                | -Input  |
| 3               | +Output               | +Output |
| 4               | TRIM                  | COM     |
| 5               | -Output               | -Output |
| 6               | Remote On/Off Control |         |



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