

# UM2400 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
- ◆ Conductive EMI Meets CISPR22 Class A
- ◆ RoHS Compliant



### 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 .....	±1% max.
Dual, +Output .....	±1% max.
-Output .....	±3% max.
Triple, 5V .....	±1% max.
12V/15V .....	±5% max.
Voltage Balance, Dual Output at Full Load, .....	±1.0% max.
Transient, Response	
Single, 25% Step Load Change .....	<500 μ sec.
Dual, FL-1/2FL, ± 1% Error Band .....	<500 μ sec.
External Trim Adj. Range .....	±10%
Ripple and Noise, 20MHz BW .....	10mV RMS max. 75mV P-P max.
Temperature Coefficient .....	±0.02%/°C max.
Short Circuit Protection .....	Continuous
Overvoltage Protection, 5V .....	6.8V
12V .....	15V
15V .....	18V
Line Regulation <sup>2</sup> , Single/Dual Output .....	±0.5% max.
Triple Output .....	±1% max.
Load Regulation <sup>3</sup> , Single/Dual Output .....	±1% max.
Triple Output .....	±5% max.

### GENERAL SPECIFICATIONS

Efficiency .....	See Table
Isolation Voltage .....	1500 VDC min.
Isolation Resistance .....	10 <sup>9</sup> ohms min.
Switching Frequency .....	100KHz
Case Grounding .....	Capacity Coupled to Input
Operating Temperature Range	
Ambient, None Derating .....	-25°C to +60°C
Derating .....	0.67W/°C
Cooling .....	Free-Air Convection
Storage Temperature Range .....	-55°C to +105°C
EMI/RFI .....	Six-Sided Continuous Shield
Dimensions .....	2.56*3.0*0.83 inches (65*76.2*21.1mm)
Case Material .....	Black-Coated Copper with Non-Conductive Base
Weight .....	180g

### 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.

REMOTE ON/OFF CONTROL	
Logic Compatibility .....	CMOS or Open Collector TTL
Ec-ON, .....	>+5.5 VDC or Open Circuit
Ec-OFF, .....	<1.8 VDC
Shutdown Idle Current .....	10mA
Control Common .....	Referenced to Input Minus

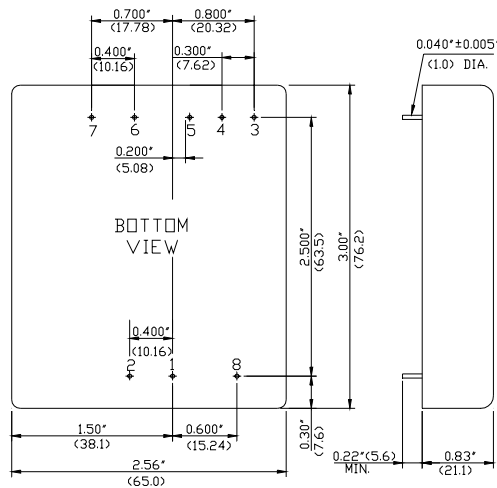


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MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT		% EFF	CASE
				NO LOAD	FULL LOAD		
UM2401	24VDC	5 VDC	5000 mA	25 mA	1360 mA	76	E
UM2402		12 VDC	2500 mA	30 mA	1600 mA	78	
UM2403		15 VDC	2000 mA	30 mA	1580 mA	79	
UM2404		± 12 VDC	± 1250 mA	30 mA	1560 mA	80	
UM2405		± 15 VDC	± 1000 mA	30 mA	1560 mA	80	
UM2406		+5/±12 VDC	3000/±450 mA	50 mA	1400 mA	77	
UM2407		+5/±15 VDC	3000/±350 mA	50 mA	1380 mA	77	
UM2411	48VDC	5 VDC	5000 mA	20 mA	680 mA	77	E
UM2412		12 VDC	2500 mA	20 mA	780 mA	80	
UM2413		15 VDC	2000 mA	20 mA	780 mA	80	
UM2414		± 12 VDC	± 1250 mA	20 mA	760 mA	82	
UM2415		± 15 VDC	± 1000 mA	20 mA	760 mA	82	
UM2416		+5/±12 VDC	3000/±450 mA	40 mA	700 mA	77	
UM2417		+5/±15 VDC	3000/±350 mA	40 mA	680 mA	78	

CASE E



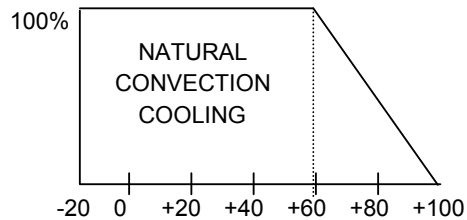
All dimensions in inches (mm).  
Tolerance .xx = ±0.04"  
.xxx = ±0.010"

OUTPUT	VOLATGE	Amperes		
		Min. <sup>2</sup>	Nom.	Max.
1	+5	0.500	3.0	3.5
2&3	+12 or -12	0.100	0.450	0.700
2&3	+12 or -15	0.100	0.350	0.700

NOTES:

- Maximum total power from all outputs is limited to 30 watts but no output should be allowed to exceed its maximum current.
- Minimum current on each output required to maintain specified regulation.
- If remote sensing is 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.

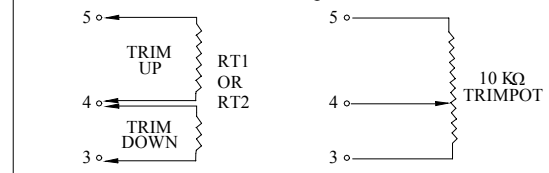
Operating Limit and Output Power Range



Maximum case temperature under any operating condition must not be exceeded 105°C

EXTERNAL OUTPUT TRIMMING

Output may optionally be externally trimmed (±10%) with a fixed resistor or an external trimpot as shown.



Pin Connections

Pin	Single <sup>3</sup>	Dual	Triple
1	+Input	+Input	+Input
2	-Input	-Input	-Input
3	+Sense	+Output	+12V,15V
4	Output Trim	Common	Common
5	-Sense	-Output	-12V,15V
6	+Output	No Pin	+5V
7	-Output	No Pin	+5V Com
8	Remote On/Off Control		



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