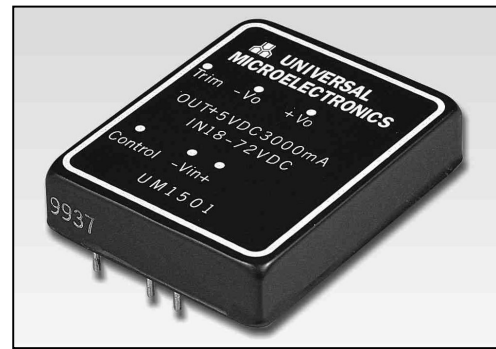


# UM1500 SERIES

## 15 to 20 Watt DC-DC Converters

- ◆ Surface Mount Technology
- ◆ Efficiency 82%
- ◆ Wide Input Range
- ◆ 10.2 Watt/Cubic Inch
- ◆ Remote On/Off Control
- ◆ Low Profile



### SPECIFICATIONS

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

#### INPUT SPECIFICATIONS

Input Voltage Range,	
15W .....	48V Nominal, 18-72 VDC
20W .....	24V Nominal, 18-36 VDC
	48V Nominal, 36-72 VDC
Input Filter .....	Pi Network

#### OUTPUT SPECIFICATIONS

Voltage Accuracy, Single Output .....	±1% max.
Dual,+Output .....	±1% max.
-Output .....	±2% max.
Triple, 5V .....	±1% max.
±12V/15V .....	±3% max.
Voltage Balance, Dual Output at Full Load .....	±2.0% max.
Transient Response,	
Single, Dual , 25% Step Load Change,	
±1% Error Band .....	<500u sec.
External Trim Adj. Range .....	+10%
Ripple and Noise , 20MHz BW <sup>1</sup> .....	15mV RMS max.
	75mV P-P max.
Temperature Coefficient .....	±0.02%/°C max.
Short Circuit Protection .....	Continuous
Overshoot Protection Trip Point ( Zener Clamp Type )	
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 Output .....	±0.5% max.
Dual Output .....	±1% max.
Triple Output +5V .....	±1% max.
Auxiliaries .....	±5% max.

### GENERAL SPECIFICATIONS

Remote On/Off Control .....	See Below
Efficiency .....	See Table
Isolation Voltage .....	500 VDC min.
Isolation Resistance .....	10 <sup>8</sup> ohms min.
Switching Frequency	
Single/Dual .....	330KHz typ.
Triple .....	200KHz typ.
Operating Temperature Range,	
Ambient, 15W, None Derating .....	-40°C to +71°C
20W, None Derating .....	-40°C to +60°C
Cooling .....	Free Air Convection
Storage Temperature Range .....	-55°C to +105°C
Dimensions Case J .....	2.0x1.6x0.46 Inches
	(50.8x40.6x11.7 mm)
Case Material .....	Black Coated Copper With
	Non-Conductive Base
Weight .....	50g

### NOTES:

1. Measured with 3.3uF/25V tantalum capacitor across each output for triple output models, 0.1uF ceramic capacitor across each output for single and dual output models.
2. Measured from high line to low line.
3. Measured from full load to specified load with all other outputs at rated load: single: full load to 1/4 load; dual outputs loaded balanced from full load to 1/2 load, triple: full load to 1/10 load.

REMOTE ON/OFF CONTROL	
Control Input .....	Pin 1
Control Common .....	Pin 3
Logic Compatibility .....	
	CMOS or Open Collector TTL
Control Voltage .....	
On .....	>+2.5 VDC or Open Circuit
Off .....	< +0.8 VDC or Jumper to Pin 3
Converter Shutdown Idle Current .....	10 mA



**UNIVERSAL  
MICROELECTRONICS**

MODEL NUMBER	INPUT RANGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT		% EFF	REGULATION		CASE
				NO LOAD	FULL LOAD		LINE	LOAD	
UM1501	18-72 VDC	5 VDC	3000 mA	30 mA	400 mA	78	0.5%	0.5%	J
UM1502		12 VDC	1250 mA	30 mA	385 mA	82	0.5%	0.5%	
UM1503		15 VDC	1000 mA	30 mA	395 mA	80	0.5%	0.5%	
UM1504		±12 VDC	±650 mA	35 mA	415 mA	78	±0.5%	±1.0%	
UM1505		±15 VDC	±500 mA	35 mA	395 mA	80	±0.5%	±1.0%	
UM1506		+5/±12 VDC	1500/±310 mA	35 mA	395 mA	80	0.5/±2.0%	0.5/±5.0%	
UM1507		+5/±15 VDC	1500/±200 mA	35 mA	395 mA	80	0.5/±2.0%	0.5/±5.0%	
UM1511	18-36 VDC	5 VDC	4000 mA	60 mA	1055 mA	79	0.5%	0.5%	J
UM1512		12 VDC	1670 mA	60 mA	995 mA	84	0.5%	0.5%	
UM1513		15 VDC	1330 mA	60 mA	995 mA	84	0.5%	0.5%	
UM1514		±12 VDC	±833 mA	60 mA	995 mA	84	±0.5%	±1.0%	
UM1515		±15 VDC	±666 mA	60 mA	995 mA	84	±0.5%	±1.0%	
UM1521	36-72 VDC	5 VDC	4000 mA	30 mA	530 mA	79	0.5%	0.5%	J
UM1522		12 VDC	1670 mA	30 mA	500 mA	84	0.5%	0.5%	
UM1523		15 VDC	1330 mA	30 mA	500 mA	84	0.5%	0.5%	
UM1524		±12 VDC	±833 mA	30 mA	500 mA	84	±0.5%	±1.0%	
UM1525		±15 VDC	±666 mA	20 mA	525 mA	80	±0.5%	±1.0%	

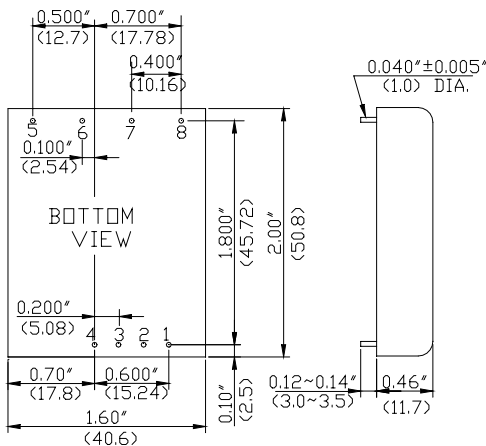
NOTES:

1. Minimum current of 10% full load required on main output and auxiliaries for triple output models.
2. Maximum capacitive load across the output ports should not be over following indicated values.

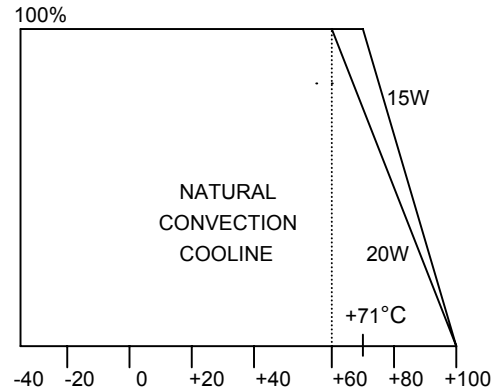
MODEL NUMBER	UM1501	UM1502	UM1503	UM1504	UM1505	UM1506	UM1507	UM1511 UM1521	UM1512 UM1522	UM1513 UM1523	UM1514 UM1524	UM1515 UM1525
MAXIMUM <sup>2</sup> CAPACITIVE LOAD (uF)	+2200	+680	+330	+330 -330	+270 -270	+680 ±100	+680 ± 68	+2200	+680	+330	+330 -330	+270 -270

CASE J

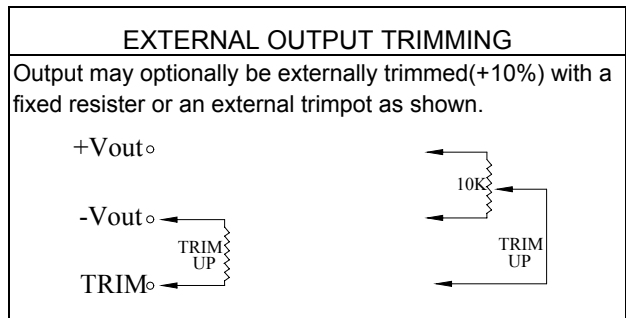
Operating Limits and Output Power Range.



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



PIN CONNECTIONS			
Pin	Single	Dual	Triple
1	Control	Control	Control
2	No Pin	No Pin	No Pin
3	-Input	-Input	-Input
4	+Input	+Input	+Input
5	No Pin	+Output	+12V, 15V
6	+Output	Common	+5V
7	-Output	-Output	Common
8	Trim	Trim	-12V, 15V



**UNIVERSAL  
MICROELECTRONICS**

3,27TH RD., TAICHUNG INDUSTRIAL PARK,  
TAICHUNG, TAIWAN, R.O.C.  
TEL: 886-4-23590096 FAX: 886-4-23590129