

# UMEC

## SMPS SPECIFICATION

PRELIMINARY

OFFICIAL

UMEC P/N:

UM6400 SERIES

DATE: 06-15-'04

REV. NO.: E

APPROVAL	CHECK BY	DESIGN BY



**UNIVERSAL  
MICROELECTRONICS**

2539 W. 237TH STREET, STE: A  
TORRANCE, CA 90505 USA  
TEL: 310-326-7072 FAX: 310-326-7058

# UM6400 SERIES

## 9-15Watt DC-DC Converter

- ◆ Synchronous Rectifier Topology
- ◆ Surface Mount Technology
- ◆ Remote On/Off Control
- ◆ Safety Approvals Pending (EN60950, UL/cUL, TUV and CE)

### SPECIFICATIONS

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

### INPUT SPECIFICATIONS

Input Voltage Range	24V Nominal, 18-36 VDC 48V Nominal, 36-75 VDC
Input Filter	Pi Network
Turn on Voltage Threshold, I/P: 24V	17V typ.
I/P: 48V	35V typ.
Input under Voltage Shutdown, I/P: 24V	16V max.
I/P: 48V	34V max.
Input Transient withstand (Transient Duration: 100ms)	
I/P: 24V	50V
I/P: 48V	100V

### OUTPUT SPECIFICATIONS

Voltage Accuracy	±2% max.
External Trim Adj. Range	±10%
Line Regulation <sup>1</sup> , Single	±0.3% max.
Dual	±2% max.
Load Regulation <sup>2</sup> , Single	±0.5% max.
Dual	±2% max.
Ripple and Noise, 20MHz-BW <sup>4</sup> , Single	100 mVp-p max.
Dual	120 mVp-p max.
Temperature Coefficient	±0.04%/°C max.
Short Circuit Protection	Continuous
Rise Time <sup>5</sup> , Single	3 ms typ. 8 ms max.
Dual	10 ms typ. 20 ms max.

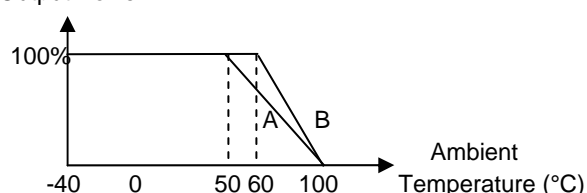
### GENERAL SPECIFICATIONS

Isolation Voltage(Input to Output)	1500VDC
(Input to case)	1000VDC
(output to case)	1000VDC
Isolation Resistance(500VDC, Input to Output)	
	10 Mohm min.
Switching Frequency	400 KHz typ.
Transient Response	
(100% to 75% full load at ±2% error band)	≤800us
Humidity	95% R.H. max.
Isolation Capacitance (Input to Output)	1000 pF
Case Material	Black Coated Copper With Non-conductive Base

Dimensions	1*1.6*0.45 inches (25.4*40.6*11.40 mm)
Pin size	0.2*Φ0.04 inches (5.08*Φ1.0 mm)
Pin material	brass/Tin plated
Operating Temperature Range <sup>6</sup>	-40°C to +100°C
Ambient, None Derating, UM641X	-40°C to +50°C
UM642X	-40°C to +60°C
Derating, UM641X	-2.0% Output Power/°C
Derating, UM642X	-2.5% Output Power/°C
Storage Temperature	-55°C to +125°C
MTBF <sup>7</sup> (50°C)	1100K Hrs min.

### NOTES:

1. Measure from high line to low line.
2. Measure from full load to 1/10 load. Dual: loaded balanced from full load to 1/10 load.
3. Measured from high line to low line, full load to 1/10 load.
4. Measure with 1 uF ceramic cap. & 10uF tantalum connected to the output pins.
5. The time of output voltage rise up between 5% to 95% of output voltage.
6. Temperature derating curve



A: UM641X B: UM642X

- Maximum case temperature must not be exceeded 100°C.
7. Accordance with bellcore TR-NWT-000332.
  8. Standard product is active high, active low remote On/Off option is available, to order suffix a "N" to the model number e.g.: UM6421N.
  9. 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.

### REMOTE ON/OFF CONTROL

Logic Compatibility	CMOS or Open Collector TTL
Converter ON	>+2.5Vdc or Open Circuit
Converter OFF	<+1.2Vdc or Jump to Pin2
Control Common	Pin2



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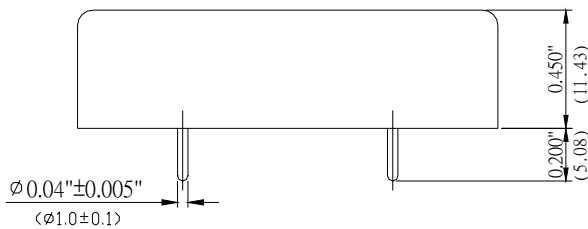
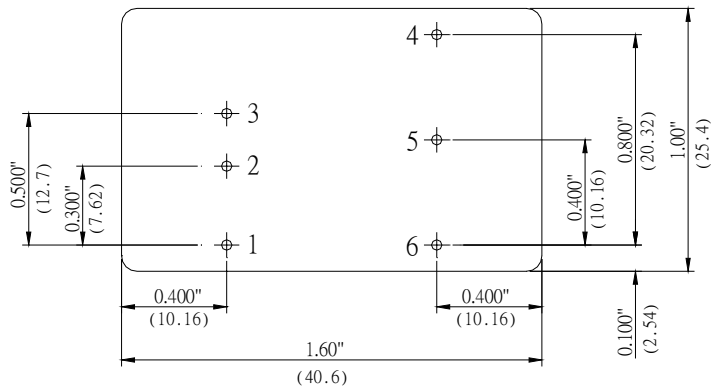
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MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT		TYPICAL EFFICIENCY	MAXIMUM <sup>2</sup> CAPACITIVE LOAD(μF)
				NO LOAD	FULL LOAD		
UM6413	24 VDC	3.3 VDC	4500 mA	80 mA	728 mA	85%	100000
UM6421	48 VDC	1.8 VDC	6000 mA	40 mA	268 mA	84%	100000
UM6423		3.3 VDC	4500 mA	40 mA	356 mA	87%	100000
UM6424		5.0 VDC	3000 mA	40 mA	355 mA	88%	100000
UM6425		6.0 VDC	2500 mA	40 mA	355 mA	88%	100000
UM6426		12 VDC	1250 mA	40 mA	351 mA	89%	10000
UM6427		15 VDC	1000 mA	40 mA	351 mA	89%	3300
UM6428		±12 VDC	±625 mA	40 mA	351 mA	89%	1500
UM6429		±15 VDC	±500 mA	40 mA	351 mA	89%	1500

**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**



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

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

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



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