

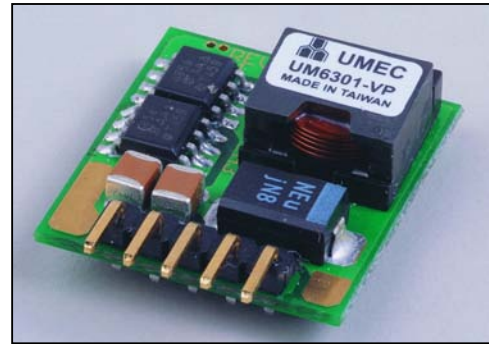
# UMEC International Corporation

## UM6300 SERIES



### 30 Watt DC-DC Converters

- ◆ Input Voltage Range: 3.0V-5.5V/9.6V-14.4V
- ◆ Output Voltage Adjustable with the Trim Function
- ◆ Non-Isolated POL Converter
- ◆ Ultra High Efficiency, Up to 94% Full Load, 95% Half
- ◆ Open-Frame
- ◆ Output Overcurrent Protection with Auto-restart
- ◆ Remote on/off Control
- ◆ RoHS Compliant



### SPECIFICATIONS

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

#### INPUT SPECIFICATIONS

Input Voltage Range<sup>1</sup>, 5V ..... 3-5.5V  
 12V ..... 9.6-14.4V  
 Input External Bypass Capacitance<sup>2</sup> ..... 100uF

#### OUTPUT SPECIFICATIONS

Voltage Accuracy<sup>3</sup> ..... ±2%max.  
 Transient Response<sup>4</sup>, Single, 25% step Load Change,  
 ±1% Error Band, 5V ..... <50u sec.  
 12V ..... <100u sec.  
 Ultra Wide Trim Adj. Range<sup>11</sup>, 5V ..... 0.8 – 3.63V  
 12V ..... 0.8 – 5.0V  
 Line Regulation<sup>5</sup> ..... ±0.5% max.  
 Load Regulation<sup>6</sup> ..... ±1.5% max.  
 Ripple and Noise, 20MHz BW<sup>7</sup>, 5V ..... 50mV p-p max.  
 12V ..... 60mV p-p max.  
 25mVrms max.

#### GENERAL SPECIFICATIONS

Efficiency ..... See Table  
 Switch Frequency, 5V, 12V ..... 300KHz typ.  
 Operation Temperature<sup>8</sup> ..... -40°C to +100°C  
 Storage Temperature Range ..... -40°C to +125°C  
 Dimensions ..... 0.8\*0.85\*0.31 inches  
 (20.2\*21.5\*7.8 mm)  
 Weight ..... 4.5g

#### APPLICATIONS

Distributed Power Architecture (DPA)  
 Intermediate Bus Architecture (IBA)  
 Telecommunication Equipment  
 Datacommunication Equipment  
 Servers and Workstations  
 Latest Generation IC's (DSP, ASIC, FPGA) and  
 Microprocessor Powered Applications  
 LANs/WANs Applications



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### NOTE

1. When Vo= 3.3V, then Vin range from 4.5V to 5.5V.  
 When Vo≤ 2.5V, then Vin range from 3V to 5.5V.
2. Recommended customer added capacitance.
3. Defined at the static output regulation at 25°C, including initial setting accuracy, Line voltage within stated limits and load current within stated limits.
4. di/dt= 0.1A/1uS, Tc= 25°C; load change= 0.5 Io max. to 0.75 Io max. and 0.75 Io max. to 0.5 Io max.
5. Measured from high line to low line.
6. Measured from full load to 1/10 load.
7. Measured with 100uF low ESR tantalum capacitor and 1uF ceramic capacitor across output.
8. Full operating temperature range is -40°C to 100°C ambient temperature with appropriate power derating.
9. Standard product is active high, active low remote ON/OFF option is available, to order suffix a "N" to the model number e.g. UM6301-VN.
10. The nominal output voltage of UM6301 and UM6311 is 3.3V and 5.0V respectively.
11. The TRIM input permits the user to adjust the output voltage according to the trim range specification by using an external resistor R<sub>trim</sub> connecting to the ground. By using a 1% tolerance trim resistor, set point tolerance of 2% is achieved as specified in the datasheet.

EXTERNAL OUTPUT TRIMMING			
UM6301		UM6311	
V <sub>o,des</sub> (V)	R <sub>trim</sub> (KΩ)	V <sub>o,des</sub> (V)	R <sub>trim</sub> (KΩ)
0.8	Open	0.8	Open
1.2	23.93	1.2	58.01
1.5	11.93	1.5	31.01
1.8	7.17	1.8	20.01
2.5	2.63	2.5	9.91
3.3	0.56	3.3	5.11
		5.0	1.00

REMOTE ON/OFF CONTROL	
Logic Compatibility.....	CMOS or Open Collector TTL
Ec-ON .....	> +2.5 VDC or Open Circuit
Ec-OFF .....	< 0.8 VDC
Control Common .....	Referenced to Input Minus

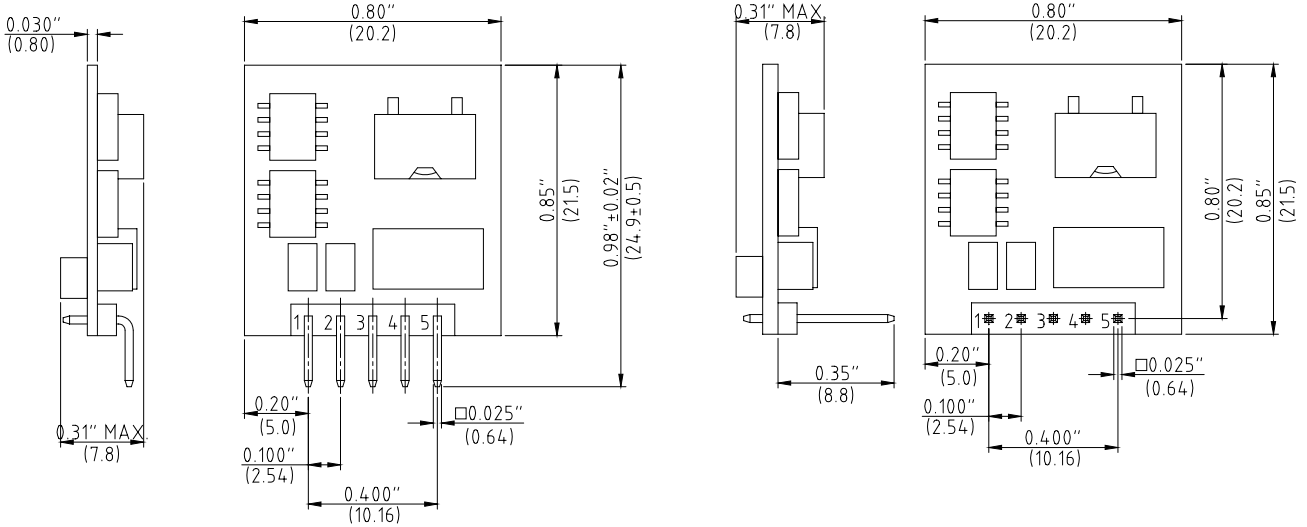
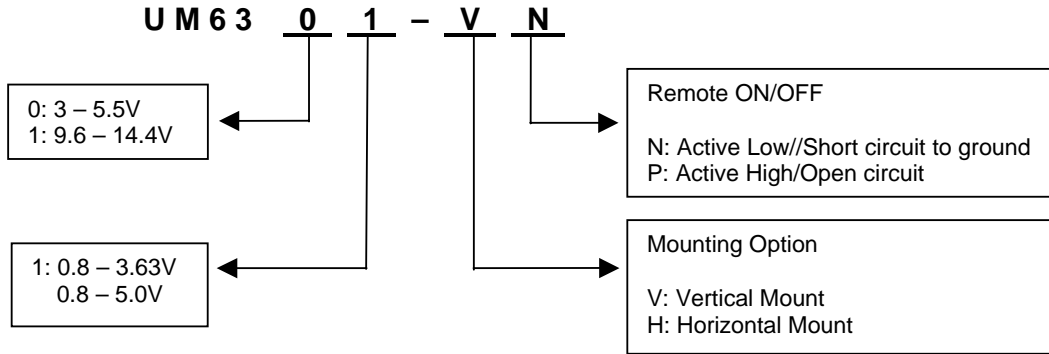
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MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT RATED LOAD (Amps)	INPUT CURRENT FULL LOAD (mA)	TYPICAL EFFICIENCY (%)
UM6301	5	0.8 – 3.63	6	4640	94
UM6311	12	0.8 – 5.0	6	2660	94

NOTE: Without an external resistor between the trim pin and the ground, the output voltage of the module is 0.8 Vdc.

## PART NUMBER STRUCTURE



Vertical Mount-V  
(Standard)

Horizontal Mount-H

Pin Connections	
Pin	Function
1	Remote ON/OFF
2	+Vin
3	Ground / -Vo / -Vin
4	+Vout
5	Trim

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



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