

### FEATURES AND APPLICATIONS

- Wide 2:1 Input range
- 24 Pin DIL Package
- Regulated Output Voltage
- Full SMD Technology
- 1500/3500 VDC Isolation
- RoHS ✓
- Mobile/Battery Driven Applications
- Distributed Power Networks
- Data Communications Equipments
- Telecommunication Instruments
- Process/Machine Control Equipments

### GENERAL DESCRIPTION

The VMU series is a family of 6W single & dual output DC-DC converters with 1.5kVDC or 3.5kVDC isolation. These converters achieve miniature package in a 24-pin DIL compatible case with high performance features and a short circuit protection with automatic restart and tight line/load regulation. Wide range devices operate over 2:1 Input voltage range providing stable output voltage.

Models operate from an input bus voltage of 12, 24 and 48VDC offering output voltage levels of 3.3, 5, 9, 12, 15, 24,  $\pm 3.3$ ,  $\pm 5$ ,  $\pm 9$ ,  $\pm 12$ ,  $\pm 15$  or  $\pm 24$ VDC.

2:1 Input single and dual Output							
Model Number	Input Voltage Range [VDC]	Output Voltage [VDC]	Input Current		Full Load Output Current [mA]	max. Capacitor Load [ $\mu$ F]	Efficiency [%] 12/24/48
			No-Load [mA] 12/24/48	Full Load [mA] 12/24/48			
VMU-xx3R3S6	9-18 18-36 36-72	3.3	30/20/12	527/256/128	1400	3300	73/75/75
VMU-xx05S6		5.0	30/20/12	649/313/156	1200	1000	77/80/80
VMU-xx09S6		9.0	30/20/12	641/304/152	666	470	78/82/82
VMU-xx12S6		12.0	30/20/12	617/313/156	500	220	81/80/80
VMU-xx15S6		15.0	30/20/12	625/304/151	400	100	80/82/83
VMU-xx24S6		24.0	30/20/12	625/305/151	250	47	80/82/83
VMU-xx3R3D6	9-18 18-36 36-72	$\pm 3.3$	30/20/12	527/333/171	$\pm 909$	$\pm 680$	73/75/73
VMU-xx05D6		$\pm 5.0$	30/20/12	649/321/158	$\pm 600$	$\pm 470$	77/78/79
VMU-xx09D6		$\pm 9.0$	30/20/12	625/301/158	$\pm 333$	$\pm 220$	80/83/79
VMU-xx12D6		$\pm 12.0$	30/20/12	625/312/156	$\pm 250$	$\pm 100$	80/80/80
VMU-xx15D6		$\pm 15.0$	30/20/12	632/312/156	$\pm 200$	$\pm 47$	79/80/80
VMU-xx24D6		$\pm 24.0$	30/20/12	625/312/156	$\pm 125$	$\pm 22$	80/80/80

\* non standard output voltages on request

xx                    nominal input voltage:  
                           12        (9 – 18VDC)  
                           24        (18 – 36VDC)  
                           48        (36 – 72VDC)  
 Suffix H            3.5kVDC isolation

### ELECTRICAL SPECIFICATIONS

Specifications typical at +25°C, nominal Input voltage, rated output current unless otherwise specified.

#### Input Specifications

Voltage Range	12Vdc, 9-18Vdc 24Vdc, 18-36Vdc 48Vdc, 36-72Vdc
Filter	Pi-Network
Input Reflected Ripple Current	35mA pk-pk

#### Output Specifications

Voltage Accuracy	±1%, max.
Ripple and Noise (20 MHz BW)	60 mVp-p, max.
Short Circuit Protection	Continuous
Short Circuit Restart	Automatic
Line Voltage Regulation	±0.5%, max.
Load Voltage Regulation	±0.5%, max. ±1.5%, max. for 3.3 Models
Temperature Coefficient	±0.02%/°C
Max Capacitive Load	see table

#### Isolation Specification

Rated Voltage	1500 VDC, Standard 3500 VDC, Suffix H
Resistance	10 <sup>9</sup> Ω
Capacitance	470 pF, typ.

#### General Specifications

Efficiency	see table
Switching Frequency	266 KHz, typ.
MTBF (MIL-HDBK-217 F)	> 1.121 Mhrs
Safety Standard	IEC 60950 (designed to meet)

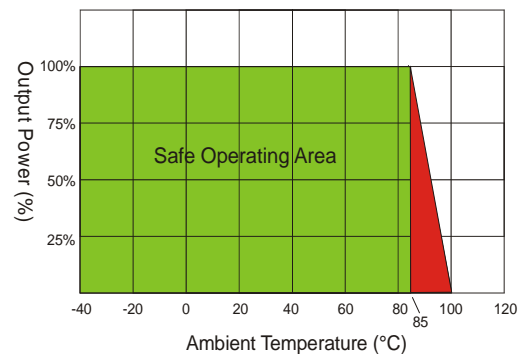
#### Environmental Specification

Operating Temperature	-40°C to +85°C
Max. Case Temperature	+100°C
Storage Temperature	-40°C to +125°C
Cooling	Free-air convection

#### Physical Characteristics

Dimension DIP	31.75 x 20.32 x 10.16 mm 1.25 x 0.80 x 0.40 inches
Weight	17.0 g
Case Material:	Nickel-Coated Copper Metal

Derating VMU-6W:



#### DIL 24 Package (for alternative Pinning see VMS series)

Standard and 3.5kVDC Isolation		
Pin	Single Output	Dual Output
2	-V Input	-V Input
3	-V Input	-V Input
9	N.P.	Common
11	N.C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input

N.C. ...not connected  
 N.P. ...no Pin

Notes:  
 All dimensions in millimeters (inches).  
 Tolerance ±0.25mm (0.01).  
 Specifications can be changed without prior notice.

Products are not intended for and must not be used in life support systems, human implantation, nuclear facilities or systems or any other application where product failure or malfunction of the component could lead to loss of life or catastrophic property damage

