

### FEATURES AND APPLICATIONS

- Wide 4:1 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

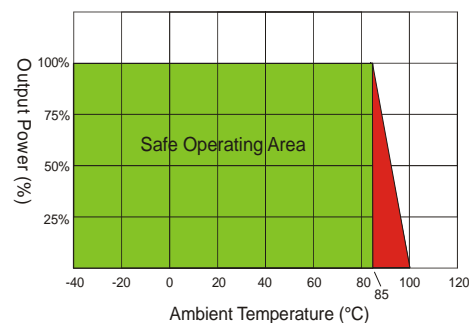
The VMW series is a family of 6W single & dual output DC-DC converters with 1.5kVDC or 3.5kVDC isolation. These converters achieve miniature package in a 24-pin DIL compatible case with high performance features and a short circuit protection with automatic restart and tight line/load regulation. Ultra wide range devices operate over 4:1 Input voltage range providing stable output voltage. Models operate from an input bus voltage of 24 and 48VDC offering output voltage levels of 3.3, 5, 7.2, 9, 12, 15, 24,  $\pm 3.3$ ,  $\pm 5$ ,  $\pm 7.2$ ,  $\pm 9$ ,  $\pm 12$ ,  $\pm 15$  or  $\pm 24$ VDC.

4:1 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] 24/48	Efficiency [%] 24/48
			No-Load [mA] 24/48	Full Load [mA] 24/48			
VMW-xx3R3S6	9-36 18-72	3.3	12/15	253/126	1400	1000/1000	76/76
VMW-xx05S6		5.0	10/8	312/156	1200	1000/1000	80/80
VMW-xx7R2S6		7.2	18/15	312/156	833	470/470	80/80
VMW-xx09S6		9.0	12/10	301/152	666	220/220	83/82
VMW-xx12S6		12.0	15/10	301/151	500	1000/1000	83/83
VMW-xx15S6		15.0	18/10	301/149	400	470/100	83/84
VMW-xx18S6		18.0	15/10	301/151	333	47/10	83/83
VMW-xx24S6		24.0	18/12	305/151	250	47/22	82/83
VMW-xx3R3D6	9-36 18-72	$\pm 3.3$	12/10	338/162	$\pm 909$	$\pm 470/ \pm 330$	74/77
VMW-xx05D6		$\pm 5.0$	10/10	312/158	$\pm 600$	$\pm 680/ \pm 470$	80/79
VMW-xx7R2D6		$\pm 7.2$	18/15	312/156	$\pm 416$	$\pm 220/ \pm 220$	80/80
VMW-xx09D6		$\pm 9.0$	18/15	308/154	$\pm 333$	$\pm 100/ \pm 100$	81/81
VMW-xx12D6		$\pm 12.0$	20/10	301/152	$\pm 250$	$\pm 330/ \pm 100$	83/82
VMW-xx15D6		$\pm 15.0$	22/15	305/149	$\pm 200$	$\pm 100/ \pm 47$	82/84
VMW-xx18D6		$\pm 18.0$	18/15	305/156	$\pm 166$	$\pm 10/ \pm 22$	82/80
VMW-xx24D6		$\pm 24.0$	18/15	312/154	$\pm 125$	$\pm 22/ \pm 22$	80/81

\* non standard output voltages on request

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

Derating VMW-6W series:



### ELECTRICAL SPECIFICATIONS

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

#### Input Specifications

Voltage Range	24Vdc, 9-36Vdc 48Vdc, 18-72Vdc
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	500 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

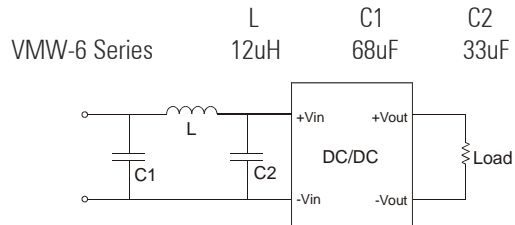
#### Physical Characteristics

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

#### EMC Characteristics

EMI/RFI *	EN55022 Class A with External Input Filter
EN61000-4-2 (ESD)	Perf. Criteria B
EN61000-4-3 (RS)	Perf. Criteria A
EN61000-4-4 (EFT)	Perf. Criteria B
EN61000-4-6 (CS)	Perf. Criteria A
EN61000-4-8 (PFMF)	Perf. Criteria A

\* Suggest adding external input filter to meet conducted emissions (EN55022 Class A)



### DIL 24 Package

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

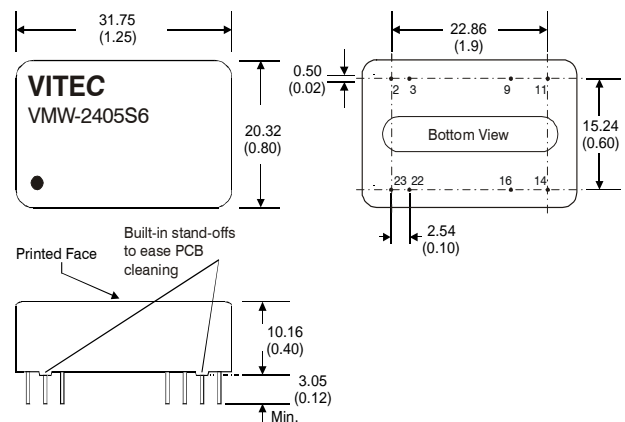
N.C. ...not connected  
N.P. ...no Pin

#### 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



Februar 2009