

## FEATURES AND APPLICATIONS

- 7 Pin SIL or 14 Pin DIL Package
- Low Ripple and Noise
- 1000/3000 VDC Isolation
- Cost Effective; RoHS ✓
- Single Regulated Output
- Continuous Short Circuit Protection
- Telecommunication Instruments
- Mixed Analog / Digital Subsystems

## GENERAL DESCRIPTION

The VMF series is a family of cost effective 1W single output DC-DC converters with 1kVDC or 3kVDC isolation. These converters achieve miniature SIL or DIL size without compromising performance or field reliability.

Models operate from an input bus voltage of 5, 12 and 24 VDC offering output voltage levels of 3.3, 5, 7.2, 9, 12 and 15 VDC. The Operation is specified over the full operating temperature range of -40°C to +85°C with no derating required. Cooling is by free-air convention.

### SIL 7 Package - Standard Types

Type Number	Input Voltage [VDC]	Output Voltage [VDC]	Output Current [mA]
VMF-xx3R3SP	5 12 24	3.3	333
VMF-xx05SP		5.0	200
VMF-xx7R2SP		7.2	139
VMF-xx09SP		9.0	111
VMF-xx12SP		12.0	84
VMF-xx15SP		15.0	67

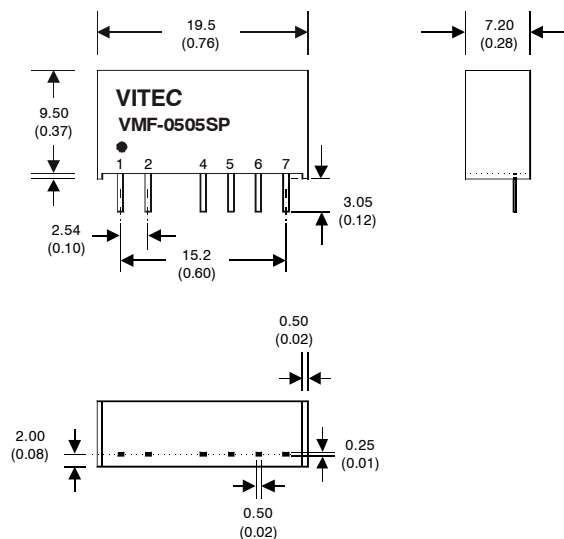
### DIL 14 Package - Standard Types

Type Number	Input Voltage [VDC]	Output Voltage [VDC]	Output Current [mA]
VMF-xx3R3DP	5 12 24	3.3	333
VMF-xx05DP		5.0	200
VMF-xx7R2DP		7.2	139
VMF-xx09DP		9.0	111
VMF-xx12DP		12.0	84
VMF-xx15DP		15.0	67

xx input voltage (05, 12, 24)  
Suffix H 3kVDC isolation

### SIL 7 Package

Pin	Standard Isolation	3kVDC Isolation
	Single Output	Single Output
1	+V Input	+V Input
2	-V Input	-V Input
4	-V Output	Omitted
5	Omitted	-V Output
6	+V Output	Omitted
7	Omitted	+V Output



## ELECTRICAL SPECIFICATIONS

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

### Input Specifications

Voltage Range	±10%
Filter	Capacitors

### Output Specifications

Voltage Accuracy	±2%, max.
Ripple and Noise (20 MHz BW)	50 mVp-p, max.
Short Circuit Protection	Continuous
Line Voltage Regulation	±0.5%, max.
Load Voltage Regulation	±0.5%, max.
	±1%, max. (3.3V models)
Temperature Coefficient	±0.02%/°C
Max. Capacitor Load	220 uF

### Environmental Specification

Operating Temperature	-40°C to +85°C
Max. Case Temperature	+100°C
Storage Temperature	-40°C to +125°C
Derating	None required
Humidity	max. 90%, non-condensing
Cooling	Free-air convection
MTBF	>3.5 Mhrs (MIL HDBK-217F)

### General Specifications

Efficiency	60% to 68%
Switching Frequency	50 KHz, typ.
Safety Standard (designed to meet)	IEC 60950-1

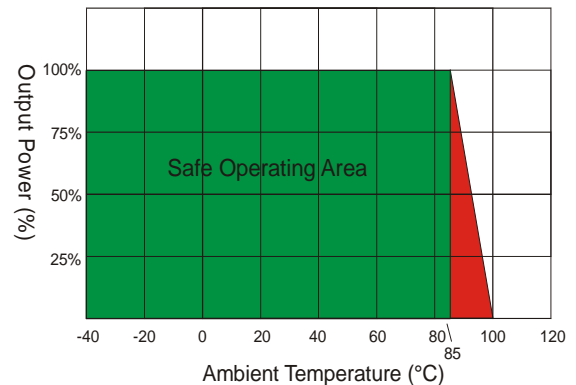
### Isolation Specification

Rated Voltage	1000 VDC, Standard 3000 VDC, Suffix H
Leakage Current	1 mA
Resistance	10 <sup>9</sup> Ω
Capacitance	60 pF, typ.

### Physical Characteristics

Dimension SIP	19.50 x 7.20 x 9.50 mm 0.76 x 0.28 x 0.39 inches
Dimension DIP	20.32 x 10.16 x 6.88 mm 0.80 x 0.40 x 0.27 inches
Weight	SIL: 2.7 g / DIL: 2.9 g
Case Material	Non-conductive black plastic

### Derating VMF-Series



### DIL 14 Package

Pin	Standard Isolation	3kVDC Isolation
	Single Output	Single Output
1	-V Input	-V Input
7	N.C	NC
8	Omitted	+V Output
9	+V Output	Omitted
10	Omitted	-V Output
11	-V Output	Omitted
14	+V Input	+V Input

NC...not connected

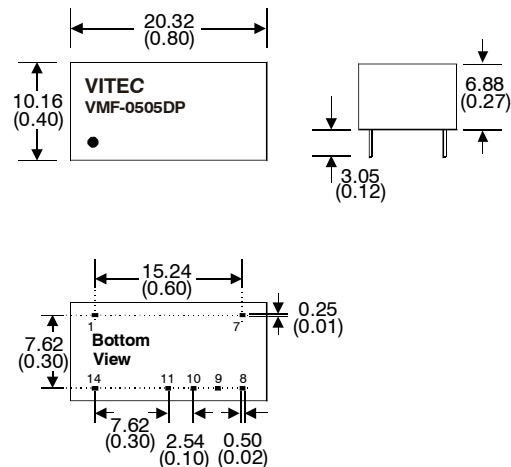
#### Notes:

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



October 2010

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