

### FEATURES

- 12 Pin SIL Package
- ±10% Input Range
- 1000 to 5200 VDC Isolation
- Continuous Short Circuit Protection
- Efficiency up to 69%
- Cost Effective; RoHS ✓

### GENERAL DESCRIPTION

The VMB series is a family of cost effective 2 W single output DC-DC converters with 1 kVdc up to 5.2 kVdc isolation. These converters achieve low cost and miniature SIL 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, 15, 18 or 24 Vdc.

### SIL 12 Package - Standard Types

Type Number	Input Voltage [VDC]	Input Current no load (mA) 5/12/24	Input Current full load (mA) 5/12/24	Output Voltage [VDC]	Output Current [mA]	Cap. Load [uF]
VMB-xx3R3S2	5, 12, 24	70/30/25	515/214/107	3,3	500	330
VMB-xx05S2		70/30/25	606/252/124	5,0	400	330
VMB-xx7R2S2		70/30/25	606/252/124	7.2	278	330
VMB-xx09S2		70/45/25	597/248/122	9,0	222	330
VMB-xx12S2		80/45/25	597/248/122	12,0	167	330
VMB-xx15S2		80/45/25	597/248/122	15,0	133	330
VMB-xx18S2		80/50/25	597/245/120	18,0	111	330
VMB-xx24S2		80/50/25	579/245/120	24,0	83	330

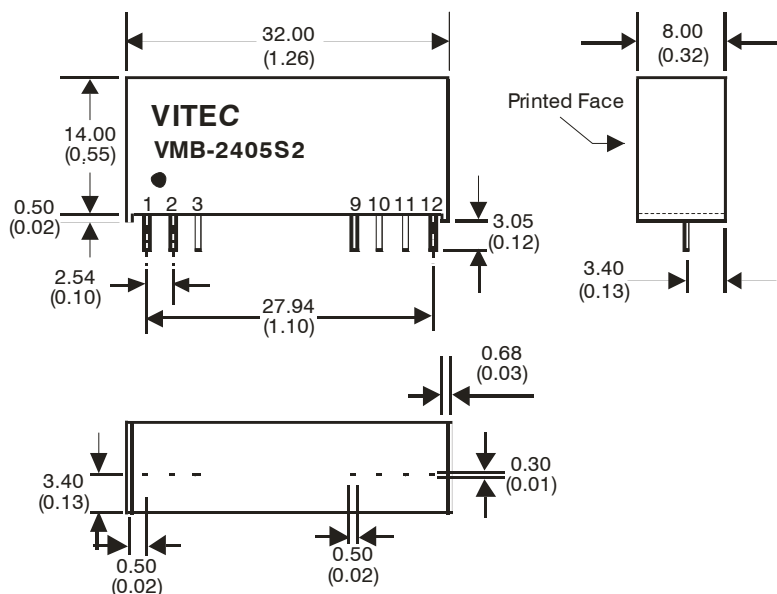
**xx** input voltage  
**05** (5 VDC, ±10%)  
**12** (12 VDC, ±10%)  
**24** (24 VDC, ±10%)

**Suffix H** 3 kVDC isolation  
**Suffix H5** 5.2 kVDC isolation

### SIL 12 Package

1 to 5.2 kVDC Isolation		
Pin	Single Output 1kVDC	Single Output (H and H5)
1	+V Input	+V Input
2	N.C.	- V Input
3	N.C.	N.C.
9	N.C.	N.C.
10	-V Output	-V Output
11	+V Output	+V Output
12	-V Input	N.C.

N.C. ...not connected



### ELECTRICAL SPECIFICATIONS

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

#### Input Specifications

Input Voltage Range	±10%
Filter	Capacitors
Input Reflected Ripple Currents	20mA pk-pk

#### Isolation Specification

I/O Isolation Voltage 1 Minute, Flash Tested for 1 Second	1000 VDC, Standard 3000 VDC, Suffix H 5200 VDC, Suffix H5
Resistance	10 <sup>9</sup> Ω
Capacitance	60 pF, typ.

#### Output Specifications

Voltage Accuracy	±2%, max.
Ripple and Noise (20 MHz BW)	75 mVp-p, max.
Short Circuit Protection	Continuous
Short Circuit Restart	Automatic
Line Voltage Regulation	±0.5%
Load Voltage Regulation	±0.5%, Load=0~100% ±1.5%, 3.3V Models
Temperature Coefficient	±0.02%/°C

#### Environmental Specification

Operating Temperature	-40°C to +71°C (without Derating)
Max. Case Temperature	+100°C
Storage Temperature	-40°C to +125°C
Humidity	max. 95%, non-condensing
Cooling	Free-air convection
MTBF	>1.12 x 10 <sup>6</sup> hrs (MIL-HDBK-217F)

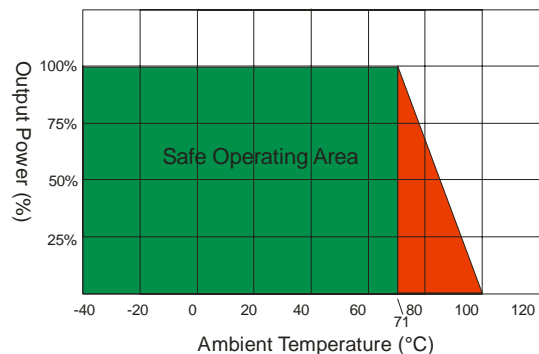
#### Physical Characteristics

Dimension SIP	32.00 x 8.00 x 14.50 mm 1.26 x 0.32 x 0.57 inches
Weight	7.2 g
Case Material	Non-conductive plastic

#### General Specifications

Efficiency	64% to 69%
Switching Frequency	50kHz, typ.
Safety Standard (designed to meet)	IEC 60950-1
Lead Soldering Temperature (1.5mm from case 10sec.)	260°C

#### Derating VMB-Series



#### 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.