

FEATURES AND APPLICATIONS

- 4 Pin SIL or 8 Pin DIL Package
- Low Ripple and Noise
- 1000 and 3000 VDC Isolation
- Cost Effective; RoHS ✓
- Mobile Applications
- Portable Equipments
- Telecommunication Instruments
- Mixed Analog / Digital Subsystems



GENERAL DESCRIPTION

The VME series is a family of cost effective 1 W single & dual output DC-DC converters with 1 kVdc or 3 kVdc isolation. These converters achieve low cost and miniature SIL or DIL size without compromising performance or field reliability.

Models operate from an input bus voltage of 3.3, 5, 12 and 24 Vdc offering output voltage levels of 3.3, 5, 7.2, 9, 12, 15, 18, 24, ± 3.3 , ± 5 , ± 7.2 , ± 9 , ± 12 , ± 15 , ± 18 or ± 24 Vdc.

SIL 4 Package - Standard Types

Type Number	Input Voltage [VDC]	Output Voltage [VDC]	Output Current [mA]
VME-xx3R3S	3.3 5 12 24	3.3	300
VME-xx05S		5.0	200
VME-xx7R2S		7.2	139
VME-xx09S		9.0	111
VME-xx12S		12.0	100
VME-xx15S		15.0	67
VME-xx18S		18.0	56
VME-xx24S		24.0	50

xx = input voltage (33, 05, 12, 24)

33	3.3 Vdc $\pm 10\%$
05	5.0 Vdc $\pm 10\%$
12	12 Vdc $\pm 10\%$
24	24 Vdc $\pm 10\%$

Options :

Suffix P	continuous short circuit protection
Suffix H	3kVDC isolation

* 3.3V input : DIL8 package or H-option on request

** Non-standard output voltages on request

DIL 8 Package - Standard Types

Type Number	Input Voltage [VDC]	Output Voltage [VDC]	Output Current [mA]
VME-xx3R3D	5 12 24	3.3	300
VME-xx05D		5.0	200
VME-xx7R2D		7.2	139
VME-xx09D		9.0	111
VME-xx12D		12.0	100
VME-xx15D		15.0	67
VME-xx18D		18.0	56
VME-xx24D		24.0	50
VME-xx3R3DD		5 12 24	± 3.3
VME-xx05DD	± 5.0		± 100
VME-xx7R2DD	± 7.2		± 69
VME-xx09DD	± 9.0		± 56
VME-xx12DD	± 12.0		± 50
VME-xx15DD	± 15.0		± 33
VME-xx18DD	± 18.0		± 28
VME-xx24DD	± 24.0		± 25

ELECTRICAL SPECIFICATIONS

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

Input Specifications

Voltage Range	±10%
Filter	Capacitors

Isolation Specification

Rated Voltage	1000 VDC, Standard 3000 VDC, H-Option
Leakage Current	1 x 10 ⁻⁶ A
Resistance	10 ⁹ Ω
Capacitance	60 pF, typ.

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	95% rel. H
Cooling	Free-air convection

General Specifications

Efficiency	72% to 80%
Switching Frequency	var. 80 kHz
Reliability Calculated MTBF	>1.121 Mhrs (MIL-HDBK-217 F)
Safety Standard	IEC 60950-1 (designed to meet)

Output Specifications

Voltage Accuracy	±3%, max.
Voltage Balance (Dual Outp.)	±1%
Ripple and Noise (20 MHz BW)	100 mVp-p, max.
Short Circuit Protection	1 sec ltd max
Option P:	continuous (on request)
Line Voltage Regulation	±1.2% / 1.0% of Vin
Load Voltage Regulation	±10%, load=20~100%
	±20% (3.3V output)
Temperature Coefficient	±0.02%/°C
Max. Capacitor Load	Single Output: 220 μF Dual Output: ±100 μF

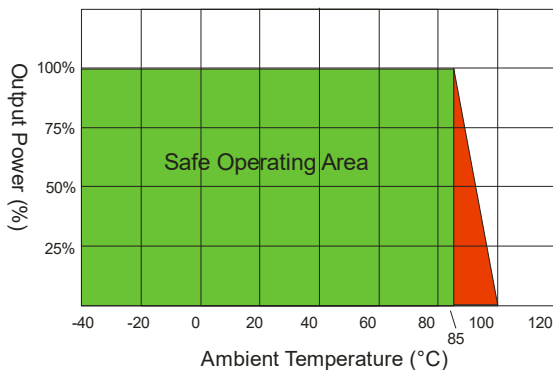
EMC Characteristics

Radiated Emissions	EN55022 Class B FCC 47 CFP Part 15 Subpart B Class B
EN61000-4-2 (ESD)	Perf. Criteria B
EN61000-4-3 (RS)	Perf. Criteria A

Physical Characteristics

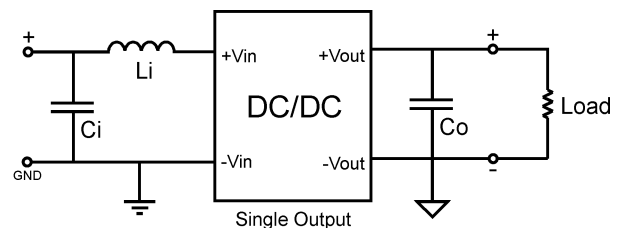
Dimension SIP	11.68 x 6.00 x 10.16 mm 0.24 x 0.46 x 0.38 inches
Dimension DIP	12.70 x 10.16 x 6.85 mm 0.50 x 0.40 x 0.27 inches
Weight	1.5 - 2 g
Case Material	Non-conductive plastic

Derating Curve



Additional Ripple & Noise Filter

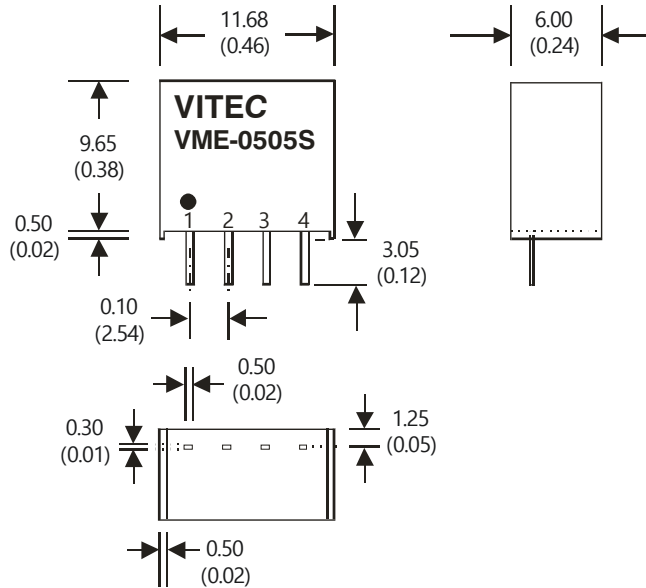
Single Output: To reduce converter's ripple & noise, it is recommended to add a 4.7 μF ~ 100 μF (±4.7 μF ~ ±68 μF for dual output) capacitor in output end. For EMI performance improvement, it is recommended to add a 12 μH inductor and a 10 μF ~ 220 μF capacitor at input side.



PACKAGE AND PINNING

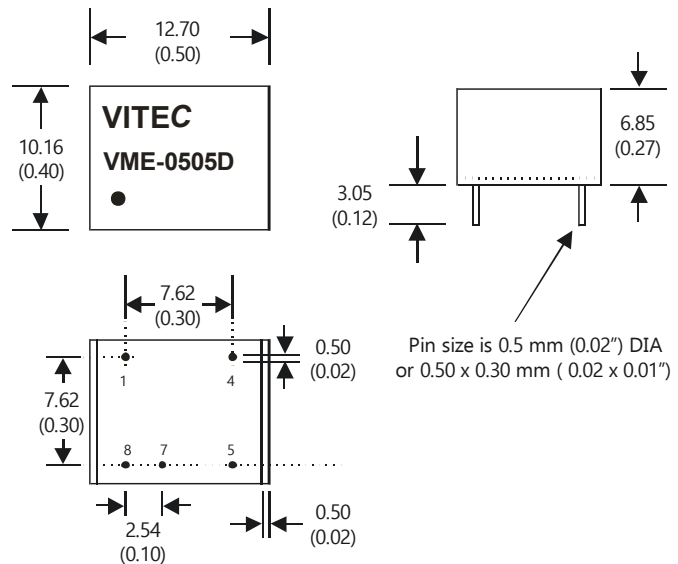
SIL 4 Package

1 & 3kVdc Isolation	
Pin	Single Output
1	- V Input
2	+ V Input
3	- V Output
4	+ V Output



DIL 8 Package

1 & 3kVdc Isolation		
Pin	Single Output	Dual Output
1	- V Input	- V Input
4	+ V Input	+ V Input
5	+V Output	+V Output
7	- V Output	Common
8	Omitted	- V Output



Notes:

All dimensions in millimeters (inches).

Tolerance $\pm 0.25\text{mm}$ (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