VMY SERIES

3 Watt DC/DC Converter
4:1 Input Range
1500 kVDC Isolation

vitec dc conversion

FEATURES

- 8 Pin SIL Package
- Wide 4:1 Input Range
- 1500 VDC Isolation
- Continuous Short Circuit Protection
- Remote on/off Control
- Cost Effective; RoHS ✓

GENERAL DESCRIPTION

The VMY series is a family of cost effective 3 W single & dual output DC-DC converters with 1.5 kVDC isolation. These converters achieve low cost and miniature SIL size without compromising performance or field reliability.

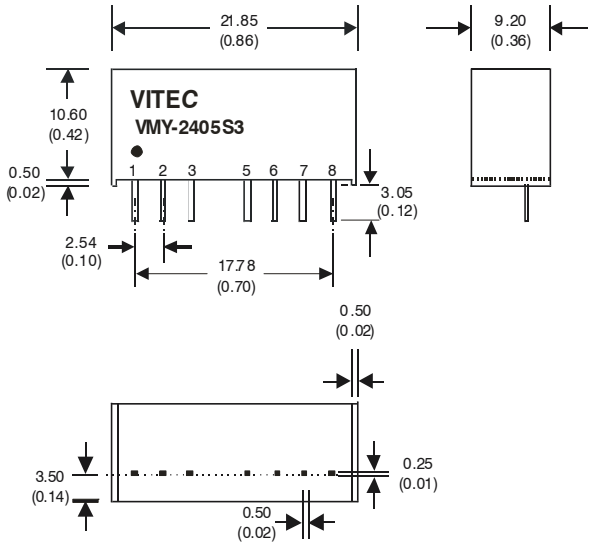
Models operate from an input bus voltage of 12, 24 and 48 VDC offering output voltage levels of 3.3, 5, 12, 15, ±5, ±12, ±15 VDC.

4:1 Input, SIL 8 Package

Model Number	Input Voltage Range [VDC]	Output Voltage [VDC]	Input Current No-Load [mA] 12/24/48	Input Current Full Load [mA] 12/24/48	Full Load Output Current [mA]	max. Capacitor Load [uF]	Efficiency [%] 12/24/48
VMY-xx3R3S3	4.5-18 9-36 18-75	3.3	40/25/15	268/129/66	700	1760	72/75/74
VMY-xx05S3		5	40/25/15	325/159/81	600	1000	77/79/78
VMY-xx12S3		12	40/30/15	309/153/79	250	170	81/82/80
VMY-xx15S3		15	40/30/15	309/153/78	200	110	81/82/81
VMY-xx05D3	4.5-18 9-36 18-75	± 5	40/30/15	325/159/80	± 300	± 470	77/79/79
VMY-xx12D3		± 12	40/35/15	313/159/80	± 125	± 100	80/79/79
VMY-xx15D3		± 15	40/35/15	313/157/80	± 100	± 47	80/80/79

* non standard output voltages on request

xx **input voltage**
12 **(4.5 – 18VDC)**
24 **(9 – 36VDC)**
48 **(18 – 75VDC)**



SIL 8 Package

1.5 kVDC Isolation		
Pin	Single Output	Dual Output
1	-V Input	-V Input
2	+V Input	+V Input
3	Remote On/Off	Remote On/Off
5	N.C.	N.C.
6	+V Output	+V Output
7	-V Output	Common
8	N.C.	-V Output

NC…not connected

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ELECTRICAL SPECIFICATIONS

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

Input Specifications

4:1 Input Voltage Range	see table
Input Filter	Capacitor
Start up Time	30mS, typ.
Input Current	see table
Input Reflected Ripple Currents	20mA pk-pk *

* measured with a simulated source inductance of 12uH

Remote ON/OFF Control

ON open or high impedance
OFF 2-4mA input current (via 1K)
(OFF stand by input current 2.5mA max.)

General Specifications

Efficiency	up to 82%, see table
Switching Frequency	100 kHz, min.
Isolation Voltage	1500 VDC
Isolation Capacitance	200 pF, max.
Isolation Resistance	10^9 Ohms, min.
MTBF (MIL-HDBK-217 F)	>1.7 Mhrs @ 25°C

Physical Characteristics

Dimension SIL8	21.85 x 9.20 x 11.10 mm 0.86 x 0.36 x 0.44 inches
Case Material	Non-conductive blackplastic
Potting Material	Silicon (UL94V-0 rated)
Pin Material	C5191R-H Solder-coated
Weight	4.8g

Output Specifications

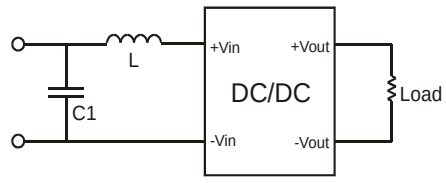
Output Voltage Accuracy	±1%, max.
Ripple and Noise (20 MHz BW)	30 mVp-p, max.
Line Voltage Regulation	±0.2%, max.
Load Voltage Regulation	±1%, max.
Cross Regulation (Dual Output)	±5%, (25% to 100% Loading)
Temperature Coefficient	±0.02%/°C
Short Circuit Protection	Continuous (Automatic Recovery)
Max. Capacitve Load	see table

Environmental Specification (Reference)

Operating Temperature	-40°C to +85°C derating above 71°C
Max. Case Temperature	+100°C
Storage Temperature	-40°C to +125°C
Cooling	Free-air Convection
Humidity	95% relH
Designed to meet IEC60950-1 Safety Standard	
EMI/RFI *	EN55022 Class A
ESD	EN61000-4-2, Perf. Criteria A
RS	EN61000-4-3, Perf. Criteria A
EFT**	EN61000-4-4, Perf. Criteria A
Surge**	EN61000-4-5, Perf. Criteria A
CS	EN61000-4-6, Perf. Criteria A
PFMF	EN61000-4-8, Perf. Criteria A

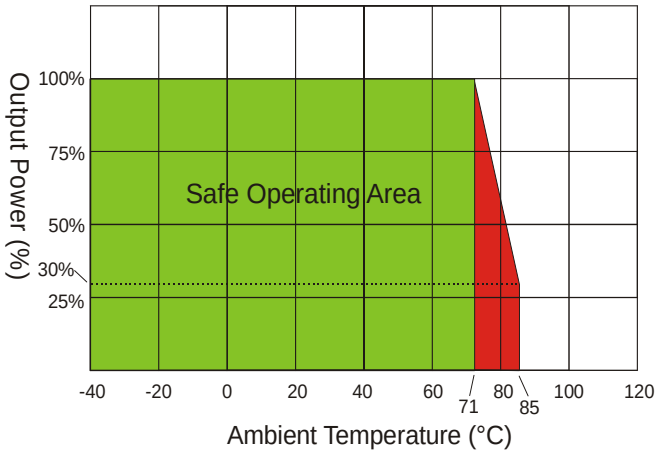
* with external input filter (see below)
** an external filter capacitor is required: Nippon KY series, 220uF/100V

Suggest adding external input filter to meet conducted emissions:



VMY-Series	L	C1
12V Input	2.5uH	1210, 10uF/35V
24V Input	10uH	1210, 2.2uF/100V
48V Input	18uH	1210, 2.2uF/100V

Derating VMY-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

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