VMG SERIES

1 Watt DC/DC Converter
Single/Dual Output
1000/3000 kVDC Isolation

vitec dc conversion

FEATURES

- 8 Pin SIL or 16 Pin DIL Package
- Wide 2:1 Input Range
- 1000 and 3000 VDC Isolation
- Continuous Short Circuit Protection
- Remote on/off Control Optional
- Cost Effective; RoHS ✓

GENERAL DESCRIPTION

The VMG series is a family of cost effective 1 W single & dual output DC-DC converters with 1kVDC and 3kVDC 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 5, 12, 24 and 48 VDC offering output voltage levels of 3.3, 5, 9, 12, 15, 24, ±3.3, ±5, ±9, ±12, ±15 or ±24 VDC.

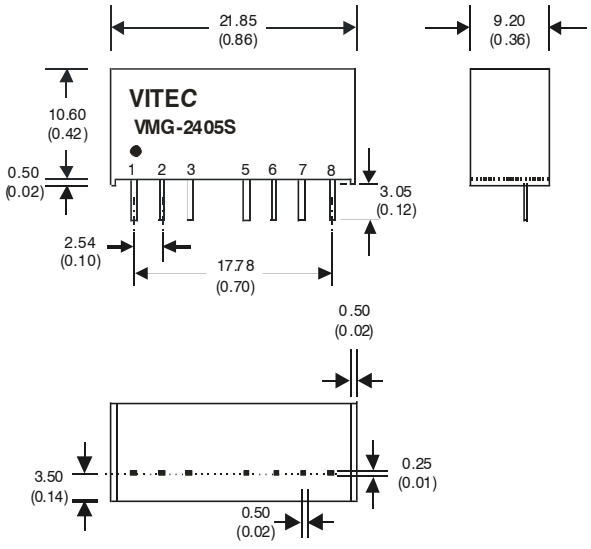
SIL 8 Package - Standard Types

Type Number	Input Voltage [VDC]	Output Voltage [VDC]	Output Current [mA]	Cap. Load [uF]
VMG-xx3R3SS	5, 12, 24, 48	3,3	303	3300
VMG-xx05SS		5,0	200	3300
VMG-xx09SS		9,0	111	470
VMG-xx12SS		12,0	83	470
VMG-xx15SS		15,0	67	470
VMG-xx24SS		24,0	42	220
VMG-xx3R3S	5, 12, 24, 48	± 3,3	± 152	± 1000
VMG-xx05S		± 5,0	± 100	± 1000
VMG-xx09S		± 9,0	± 56	± 220
VMG-xx12S		± 12,0	± 42	± 220
VMG-xx15S		± 15,0	± 33	± 220
VMG-xx24S		± 24,0	± 21	± 100

DIL 16 Package - Standard Types

Type Number	Input Voltage [VDC]	Output Voltage [VDC]	Output Current [mA]	Cap. Load [uF]
VMG-xx3R3DS	5, 12, 24, 48	3,3	303	3300
VMG-xx05DS		5,0	200	3300
VMG-xx09DS		9,0	111	470
VMG-xx12DS		12,0	83	470
VMG-xx15DS		15,0	67	470
VMG-xx24DS		24,0	42	220
VMG-xx3R3D	5, 12, 24, 48	± 3,3	± 152	± 1000
VMG-xx05D		± 5,0	± 100	± 1000
VMG-xx09D		± 9,0	± 56	± 220
VMG-xx12D		± 12,0	± 42	± 220
VMG-xx15D		± 15,0	± 33	± 220
VMG-xx24D		± 24,0	± 21	± 100

xx **input voltage**
05 **(4.5 – 9VDC)**
12 **(9 – 18VDC)**
24 **(18 – 36VDC)**
48 **(36 – 72VDC)**
Suffix H **3kVDC isolation**
Suffix C **remote on/off**
(only for SIL8 Package)



SIL 8 Package

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

NC…not connected
* Add Suffix "-T" for alternative Pinning, where the function of Pin 7 and Pin 8 are replaced

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1000/3000 kVDC Isolation

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ELECTRICAL SPECIFICATIONS

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

Input Specifications

2:1 Input Voltage Range	5Vdc nominal	4.5-9Vdc
	12Vdc nominal	9-18Vdc
	24Vdc nominal	18-36Vdc
	48Vdc nominal	36-72Vdc
Filter	Capacitors	

Isolation Specification

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

Output Specifications

Voltage Accuracy	±2%, max.
Voltage Balance (Dual Outp.)	±1%
Ripple and Noise (20 MHz BW)	35mVp-p, max.
Short Circuit Protection	Continuous
Short Circuit Restart	Automatic
Line Voltage Regulation	±0,5%
Load Voltage Regulation	±1%, Load=25~100%
Temperature Coefficient	±0.02%/°C
Minimum Load	25%

General Specifications

Efficiency	66% to 77%
Switching Frequency	100-650kHz, var.

Remote ON/OFF Control (only SIL8 Package)

Control voltage referenced to negative (-) input

ON	0-0.8Vdc (Short circuit Pin1 and Pin3) or open circuit
OFF	5Vdc (OFF idle current 5mA typ.)

Environmental Specification

Operating Temperature	-40°C to +85°C
Max. Case Temperature	+100°C
Storage Temperature	-40°C to +125°C
Humidity	max. 95%, non-condensing
Cooling	Free-air convection
MTBF	2.732 x 10^6 hrs (MIL-HDBK-217F)

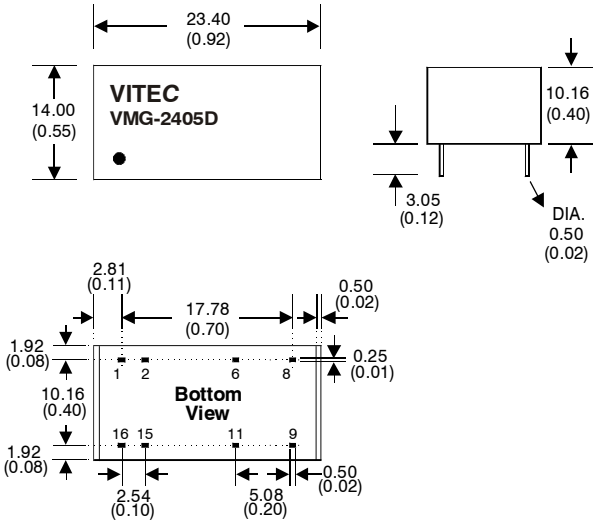
Physical Characteristics

Dimension SIP	21.85 x 9.20 x 10.60 mm 0.86 x 0.44 x 0.42 inches
Dimension DIP	23.40 x 14.00 x 10.16 mm 0.92 x 0.55 x 0.40 inches
Weight	SIL8 4.5 g DIL16 6 g
Case Material	Non-conductive plastic

DIL 16 Package

1 and 3kVdc Isolation		
Pin	Single Output	Dual Output
1	- V Input	- V Input
2	- V Input	- V Input
6	NC	Common
8	NC	- V Output
9	+V Output	+V Output
11	- V Output	Common
15	+V Input	+V Input
16	+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

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