

## 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 2 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-xx3R3SS2	5, 12, 24, 48	3,3	500	3300
VMG-xx05SS2		5,0	400	3300
VMG-xx09SS2		9,0	222	470
VMG-xx12SS2		12,0	167	470
VMG-xx15SS2		15,0	133	470
VMG-xx24SS2		24,0	83	220
VMG-xx3R3S2		5, 12, 24, 48	± 3,3	± 250
VMG-xx05S2	± 5,0		± 200	± 1000
VMG-xx09S2	± 9,0		± 111	± 220
VMG-xx12S2	± 12,0		± 83	± 220
VMG-xx15S2	± 15,0		± 67	± 220
VMG-xx24S2	± 24,0		± 42	± 100

DIL 16 Package - Standard Types				
Type Number	Input Voltage [VDC]	Output Voltage [VDC]	Output Current [mA]	Cap. Load [uF]
VMG-xx3R3DS2	5, 12, 24, 48	3,3	500	3300
VMG-xx05DS2		5,0	400	3300
VMG-xx09DS2		9,0	22	470
VMG-xx12DS2		12,0	167	470
VMG-xx15DS2		15,0	133	470
VMG-xx24DS2		24,0	83	220
VMG-xx3R3D2		5, 12, 24, 48	± 3,3	± 250
VMG-xx05D2	± 5,0		± 200	± 1000
VMG-xx09D2	± 9,0		± 111	± 220
VMG-xx12D2	± 12,0		± 83	± 220
VMG-xx15D2	± 15,0		± 67	± 220
VMG-xx24D2	± 24,0		± 42	± 100

xx input voltage  
 05 (4.5 – 9VDC)  
 12 (9 – 18VDC)  
 24 (18 – 36VDC)  
 48 (36 – 72VDC)

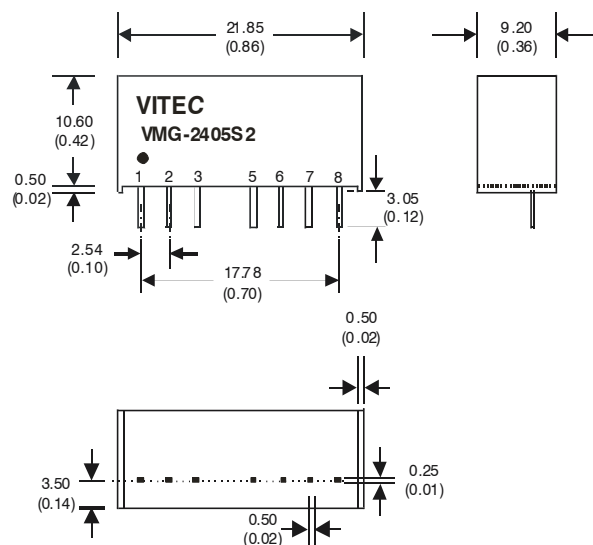
Suffix H 3kVDC isolation  
 Suffix C remote on/off  
 (only for SIL8 Package)

## 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



### 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, Flash Tested for 1 Second	1000 VDC, Standard
Resistance	3000 VDC, Suffix H
Capacitance	10 <sup>9</sup> Ω
	60 pF, typ.

#### Output Specifications

Voltage Accuracy	±2%, max.
Ripple and Noise (20 MHz BW)	80mVp-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	67% to 80%
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 <sup>6</sup> 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

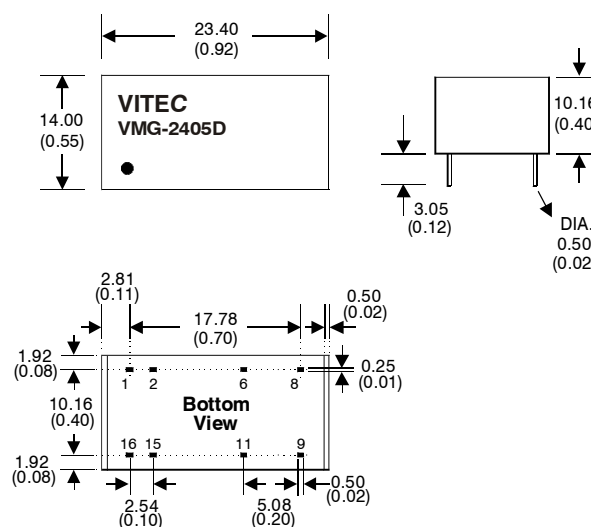
#### Notes:

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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