VMU SERIES

12 Watt DC/DC Converter
Single/Dual Output
1500 Isolation

vitec dc conversion

FEATURES AND APPLICATIONS

- Wide 2:1 Input range
- 24 Pin DIL Package
- Regulated Output Voltage
- Full SMD Technology
- 1500 VDC Isolation, 3500 VDC on request
- RoHS ✓

- Mobile/Battery Driven Applications
- Distributed Power Networks
- Data Communications Equipments
- Telecommunication Instruments
- Process/Machine Control Equipments

GENERAL DESCRIPTION

The VMU series is a family of 12W single & dual output DC-DC converters with 1.5kVDC isolation. These converters achieve miniature package in a 24-pin DIL compatible case with high performance features and a short circuit protection with automatic restart and tight line/load regulation. Wide range devices operate over 2:1 Input voltage range providing stable output voltage.
Models operate from an input bus voltage of 12, 24 and 48VDC offering output voltage levels of 2.5, 3.3, 5, 12, 15 , ±12 or ±15VDC.

2:1 Input single and dual Output							
Model Number	Input Voltage Range [VDC]	Output Voltage [VDC]	Input Current		Full Load Output Current [mA]	max. Capacitor Load [uF]	Efficiency [%] 12/24/48
			No-Load [mA] 12/24/48	Full Load [mA] 12/24/48			
VMU-xx2R5S12	9-18 18-36 36-72	2.5	15/15/15	889/445/225	3500	2000	85/85/84
VMU-xx3R3S12		3.3	15/15/15	1146/573/283	3500	2000	87/87/88
VMU-xx05S12		5.0	15/15/15	1163/581/291	2400	2000	89/89/89
VMU-xx12S12		12.0	15/15/15	1149/575/291	1000	430	90/90/88
VMU-xx15S12		15.0	15/15/15	1149/575/294	800	300	90/90/89
VMU-xx12D12	9-18 18-36 36-72	± 12.0	15/15/15	1149/575/294	± 500	± 200	90/90/88
VMU-xx15D12		± 15.0	15/15/15	1136/562/291	± 400	± 120	91/91/89

* non standard output voltages on request

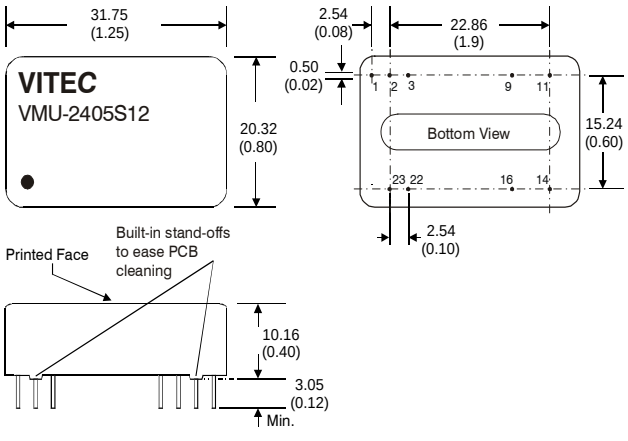
xx **nominal input voltage:**
12 (9 – 18VDC)
24 (18 – 36VDC)
48 (36 – 72VDC)

Suffix H **3.5kVDC isolation, on request**

DIL 24 Package

Standard Isolation		
Pin	Single Output	Dual Output
1	Remote On / Off	Remote On / Off
2	-V Input	-V Input
3	-V Input	-V Input
9	N.P.	Common
11	N.C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input

N.C. …not connected
N.P. …no Pin



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ELECTRICAL SPECIFICATIONS

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

Input Specifications

Voltage Range	12Vdc, 9-18Vdc 24Vdc, 18-36Vdc 48Vdc, 36-72Vdc
Filter	Pi-Network
Start up Time	20mSec, typ.
Input Reflected Ripple Currents	20mA pk-pk

(measured with a simulated source inductance of 12uH)

Output Specifications

Voltage Accuracy	±1.2%, max.
Ripple and Noise (20 MHz BW)	85 mVp-p, max.
Short Circuit Protection	Continuous
Short Circuit Restart	Automatic
Current Limiting	150% of max. Iout, typ.
Line Voltage Regulation	±0.5%, max.
Load Voltage Regulation	±0.5%, max. (Single Models) ±1.0%, max. (Dual Models)
Cross Regulation (Dual Output)	±5.0%, max.

(one load is 25% to 100%, the other load is 100% load)

EMC Characteristics

EMI/RFI *	EN55022 Class A with External Input Filter
EN61000-4-2 (ESD)	Perf. Criteria B
EN61000-4-3 (RS)	Perf. Criteria A
EN61000-4-4 (EFT)	Perf. Criteria B
EN61000-4-5 (Surge) **	Perf. Criteria B
EN61000-4-6 (CS)	Perf. Criteria A
EN61000-4-8 (PFMF)	Perf. Criteria A

** External filter capacitor is required:
suggest Nippon – chemi – con KY series, 330uF/100V

Environmental Specification

Operating Temperature	-40°C to +85°C derating above 60°C
Max. Case Temperature	+100°C
Storage Temperature	-40°C to +125°C
Derating	None required
Cooling	Free-air convection

General Specification

Efficiency	see table
Switching Frequency	330 KHz, typ.
Rated Voltage	1500 VDC (Standard) 3000 VDC (Suffix H)
Isolation Capacitance	1200 pF, max.
Resistance	$10^9\ \Omega$
Safety Standard	IEC 60950 (designed to meet)
MTBF (MIL-HDBK-217 F)	> 1 Mhrs

Remote ON/OFF Control

Control voltage referenced to negative (-) input

ON-Control	3V-12V or open
OFF-Control	0V-1.2V or short Pin 1 and Pin 2/3

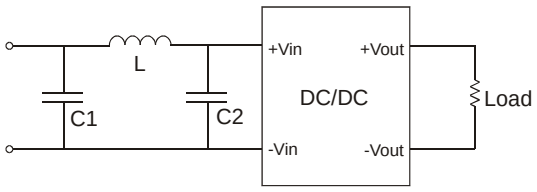
Off Idle Current: 0.5 mA typ.

Physical Characteristics

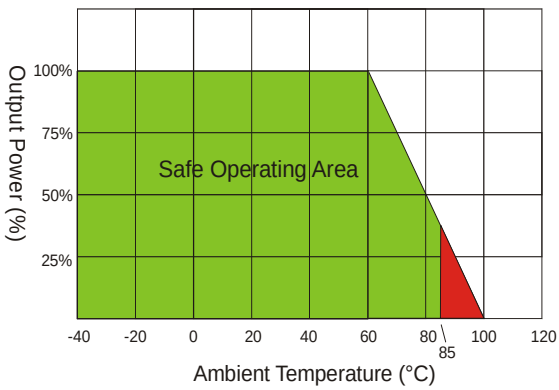
Dimension DIP	31.75 x 20.32 x 10.16 mm 1.25 x 0.80 x 0.40 inches
Weight	18.0 g
Case Material:	Nickel-Coated Copper Metal

* Suggest adding external input filter to meet conducted emissions (EN55022 Class A)

	L	C1	C2
VMU-12-Series	12uH	100uF, 100V	N/A



Derating VMU-12W:



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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