

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 10W 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 [µF]	Efficiency [%] 12/24/48
			No-Load [mA] 12/24/48	Full Load [mA] 12/24/48			
VMU-xx2R5S10	9-18 18-36 36-72	2.5	10/10/10	791/381/191	3000	2200	81/84/84
VMU-xx3R3S10		3.3	10/10/10	1006/497/249	3000	2200	84/85/85
VMU-xx05S10		5.0	10/10/10	992/479/242	2000	2200	86/89/88
VMU-xx12S10		12.0	10/10/10	980/485/245	883	820	87/88/87
VMU-xx15S10		15.0	10/10/10	958/485/242	667	470	89/88/88
VMU-xx12D10	9-18 18-36	± 12.0	10/10/10	980/485/245	± 416	± 220	87/88/87
VMU-xx15D10	36-72	± 15.0	10/10/10	969/474/245	± 333	± 150	88/90/87

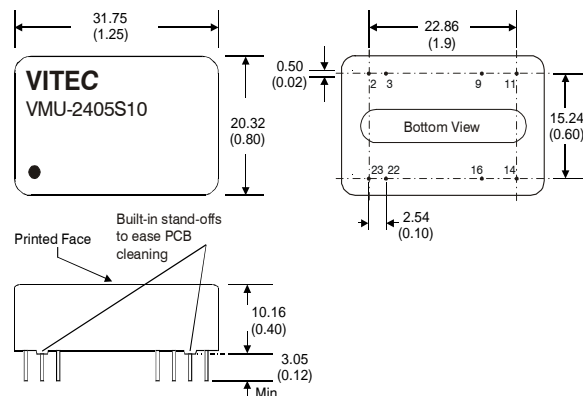
* non standard output voltages on request

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
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



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 (measured with a simulated source inductance of 12uH)	20mA pk-pk

Output Specifications

Voltage Accuracy	±1%, max.
Ripple and Noise (20 MHz BW)	75 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. ±0.7%, max. for 3.3, 2.5V Models
Cross Regulation (Dual Output) <small>(one load is 25% to 100%, the other load is 100% load)</small>	±5.0%, max.

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)
Resistance	10 ⁹ Ω
Safety Standard	IEC 60950 (designed to meet)
MTBF (MIL-HDBK-217 F)	> 1 Mhrs

EMC Characteristics

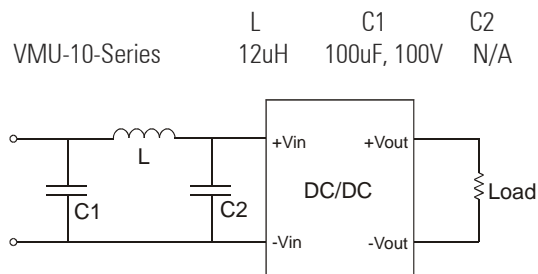
EMI/RFI *	EN55022 Class A with External Input Filter
EN61000-4-2 (ESD)	Perf. Criteria B
EN61000-4-3 (RS)	Perf. Criteria A
EN61000-4-4 (EFT)	Perf. Criteria B
EN61000-4-5 (Surge) **	Perf. Criteria B
EN61000-4-6 (CS)	Perf. Criteria A
EN61000-4-8 (PFMF)	Perf. Criteria A

** External filter capacitor is required:
suggest Nippon – chemi – con KY series, 220uF/100V

Physical Characteristics

Dimension DIP	31.75 x 20.32 x 10.16 mm 1.25 x 0.80 x 0.40 inches
Weight	17.0 g
Case Material:	Nickel-Coated Copper Metal

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



Notes:

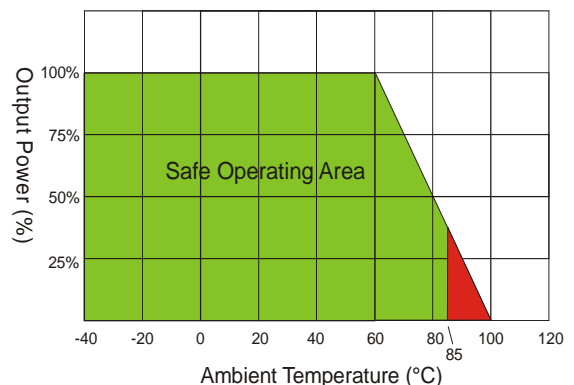
All dimensions in millimeters (inches).

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

Derating VMU-10W:



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