



3 Watt, 4:1 Wide Input DC/DC Converter SMD Series DVS3M-14ST-4



Features

- Isolated Single Output, Regulated
- 4:1 Wide Input Range
- No-Load Power Consumption $\leq 0,10W$
- Isolation I/O 1500VDC
- SMD Package 19,20 x 18,10 (mm)
- Operating Ambient Temperature Range $-40^{\circ}C$ to $+85^{\circ}C$
- Efficiency up to 84%
- Over-Current Protection
- Short Circuit Protection
- Input Under-Voltage Protection
- Meets EN62368

MODEL NUMBER	INPUT VOLTAGE [VDC] (Note 1)	OUTPUT VOLTAGE [VDC]	OUTPUT CURRENT MAX. [mA]	OUTPUT CURRENT MIN. [mA]	EFF. TYP. [%] (Note 2)	CAP. LOAD MAX. [μF]	CASE SMD
DVS3M-14ST-4-24S3,3	9 – 36	3,3	728	0	75	2200	14ST
DVS3M-14ST-4-24S05		5	600	0	80	2200	
DVS3M-14ST-4-24S12		12	250	0	82	680	
DVS3M-14ST-4-24S15		15	200	0	83	470	
DVS3M-14ST-4-24S24		24	125	0	82	100	
DVS3M-14ST-4-48S3,3	18 – 75	3,3	728	0	75	2200	14ST
DVS3M-14ST-4-48S05		5	600	0	79	2200	
DVS3M-14ST-4-48S12		12	250	0	82	680	
DVS3M-14ST-4-48S15		15	200	0	84	470	
DVS3M-14ST-4-48S24		24	125	0	82	100	

Note:

1. Nominal Input Voltage 24 or 48 VDC.
2. Efficiency is measured at nominal input voltage and rated output load.

INPUT SPECIFICATIONS:

Input Voltage Range.....	Nominal Vin 24V	9 – 36VDC
	Nominal Vin 48V	18 – 75VDC
Input Current (Full Load / No-Load).....	Nominal Vin 24V	134 - 154mA typ. / 4mA typ.
	Nominal Vin 48V	67 - 77mA typ. / 4mA typ.
Input Surge Voltage (1sec. max.)	Vin 24V	50VDC max.
	Vin 48V	100VDC max.
Start-up Voltage.....	Vin 24V	9V max.
	Vin 48V	18V max.
Input Undervoltage Protection	Vin 24V	6,5VDC typ.
	Vin 48V	15,5VDC typ.
Start-up Time	Nominal input voltage & constant resistance load	10ms typ.
Input Filter		Capacitive

OUTPUT SPECIFICATIONS:

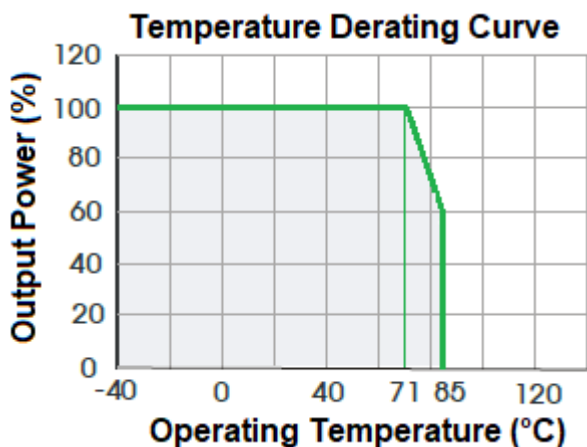
Voltage Accuracy.....		±3,0% max.
Line Regulation.....	Input from low to high at Full Load	±0,5% max.
Load Regulation	0%-100% Load	±1,0% max.
Transient Recovery time	25% Step Load Change, Nominal Vin	300 µs typ.
Transient Response Deviation.....	25% Step Load Change, Nominal Vin	±3% typ.
Temperature Coefficient.....	Full Load	±0,03%/°C max.
Ripple and Noise, (Note 1).....	20 MHz BW, 5%-100% Load	120mV p-p max.
Over Current Protection		150%Io typ.
Short Circuit Protection		Continuous

GENERAL SPECIFICATIONS:

Efficiency		See Table
Isolation Voltage I/O.....	Test 1 minute with leakage current 1mA max.	1500VDC min.
Isolation Resistance	Input-Output Resistance at 500VDC	1000 Mohm min.
Isolation Capacitance	Input-Output Capacitance at 100KHz/0.1V	1000pF typ.
Switching Frequency		350KHz, typ.
Operating Temperature.....		-40°C to +85°C
Derating	above 71°C, see Derating Curve	
Cooling.....		Natural Convection
Storage Temperature Range		-55°C to +125°C
Humidity	Non condensing	95% RH max.
Reflow Soldering Temperature	Peak temperature ≤245°C, duration ≤60s max. over 217°C. see also IPC/JEDEC J-STD-020D.1.	
MTBF	MIL-STD-217F, GB 25°C, Full Load	1000khrs min.
Dimensions		19,20 x 18,10 x 10,16 mm
Case Material		Black Plastic
Weight.....		3,5g typ.

Note:

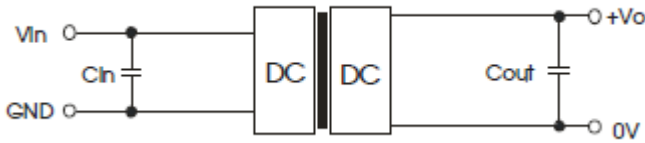
1. The "parallel cable" method is used for Ripple and Noise test. 0%-5% load ripple&noise is no more than 5%Vo.
2. Recommend to use module with more than 5% load, if not, the ripple of the product may exceeds the specification, but does not affect the reliability of the product;
3. The maximum capacitive load offered were tested at input voltage range and full load;
4. Specifications measured under the conditions of Ta=25°C, humidity<75%RH with nominal input voltage and rated output load;



TYPICAL APPLICATION

Series DVS3M-14ST-4

All the DC/DC converters of this series are tested before delivery using the recommended circuit shown following circuit. Input and/or output ripple can be further reduced by appropriately increasing the input & output capacitor values C_{in} and C_{out} and/or by selecting capacitors with a low ESR (equivalent series resistance). Also make sure that the capacitance is not exceeding the specified max. capacitive load value of the product.



Vin VDC	Cin	Vout	Cout
24VDC	100 μ F/50V	3,3/5	10 μ F/16V
		12/15	10 μ F/25V
		24	10 μ F/50V
48VDC	10 μ F/100V - 47 μ F/100V	3,3/5	10 μ F/16V
		12/15	10 μ F/25V
		24	10 μ F/50V

CASE SMD

Series DVS3M-14ST-4

Note:

All Dimensions in mm (Inches),
Pin diameter tolerances ± 0.10 mm (± 0.004 Inches)
General Tolerances: Millimeters: ± 0.50
Inches: ± 0.020



Technische Änderungen vorbehalten / Technical change reserved without notice