



3,5 Watt, Regulated, 4:1 INPUT
DC/DC Converters SMD
Series DVS3-D16-4-5KV



Features

- 3,5 Watt Regulated Outputs
- SMD Package
- Efficiency to 83%
- Operating Temperature -40°C to +90°C
- Low Leakage Current < 2µA
- Fire & Smoke EN45545-2 Compliant
- Fixed Switching Frequency
- Continuous Short Circuit Protection
- OCP/OVP/UVLO Protection
- Positive Remote ON/OFF
- 5000 VAC I/O Isolation rated for 250VAC Working Voltage
- Safety Meets IEC/EN/ES60601-1 for 2xMOPP

MODEL NUMBER	INPUT VOLTAGE [VDC]	OUTPUT VOLTAGE [VDC]	OUTPUT CURRENT [mA]		EFF. @12V [%]	EFF. @24V [%]	CAP. [µF]
			MIN.	MAX.	TYP.	TYP.	MAX. LOAD
DVS3-D16-4-24S05-5KV	9 – 36 (24)	5	0	700	77	79	1470
DVS3-D16-4-24S09-5KV		9	0	389	78	80	680
DVS3-D16-4-24S12-5KV		12	0	292	81	83	470
DVS3-D16-4-24S15-5KV		15	0	234	81	83	330
DVS3-D16-4-24D12-5KV		±12	0	±146	80	82	220
DVS3-D16-4-24D15-5KV		±15	0	±117	80	82	160

Note:

1. Nominal Input Voltage: 24V
2. Measured at Nominal Input Voltage.

INPUT SPECIFICATIONS:

Input Voltage Range.....	24V	9 – 36 VDC
Input Surge Voltage.....	100ms max.	50Vdc max.
Under Voltage Protection		
Turn-On Voltage Threshold	100% Load	typ. 8,8 VDC
Turn-On Voltage Threshold	100% Load	typ. 7,7 VDC
No Load Input Current (I _o =0A)	V _o 3,3V, 5V	27mA typ.
Full Load Input Current		422-492mA typ.
Maximum Input Current.....	Vin 9V, Full Load	492mA max.
Inrush Current.....		0,1A ² s max.
Input Reflected Ripple Current.....		20 mA typ.
Input Filter		Pi Type
ON/OFF Control, Positive Remote On/Off Logic, Refer to –Vin pin.		
Logic Low (Module Off)	Von/off at Ion/off=1.0mA	0V min. / 1,2V max.
Logic High (Module On)	Pin Open = ON, High Impedance	
Off Converter Input Current	Shutdown input idle current	2,5mA max.

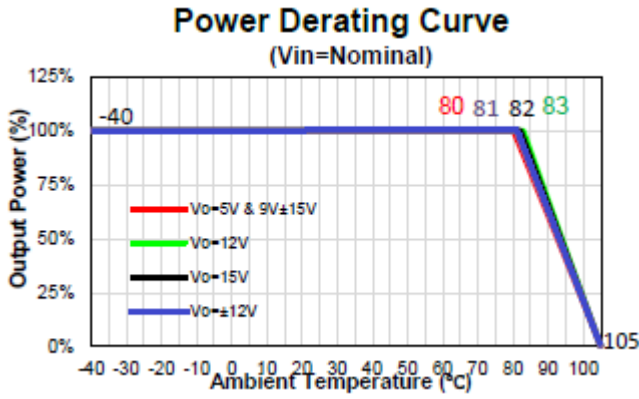
OUTPUT SPECIFICATIONS:

Voltage Set Point Accuracy	Vin24V, Full Load, V _o 3,3V	±1,0% max.
Output Voltage Balance	Vin24V, Full Load, Dual	±1,0% max.
Ripple & Noise, 20MHz BW	Full Load, 10µF X7R Capacitor to Output, Single	50mV pk-pk, max.
	Full Load, 10µF X7R Capacitor to Output, Dual	75mV pk-pk, max.
Output Voltage Current Transient: 75% to 100% of I _{omax} Step Load Change (within 1% V _{out} nominal)		
Error Band		±5% max.
Recovery Time.....		250µs max.
Turn-ON Delay and rise Time: Full Load (Constant Resistive Load)		
Turn -On Delay Time, From ON/OFF Control (Von/off to 10%Vo Remote On)		10msec. typ.
Turn -On Delay Time, From Input (Vin to 10%Vo Power Up)		10msec. typ.
Output Voltage Rise Time (10%Vo to 90%Vo)		10msec. typ.
Temperature Coefficient.....		±0,02%/°C
Line Regulation.....	High Line to Low Line, Full Load	±0,5% max.
Load Regulation	Full Load to 0% Load, Single	±0,5% max.
	Full Load to 0% Load, Dual	±0,8% max.
Cross Regulation	Asymmetrical Load 25%/100%, Dual	±5,0% max.
Over Current Protection	Foldback Mode, Auto Recovery	110% min. / 200% max.
Over Voltage Protection.....	Built-in Zener Diode to Clamp Output Voltage	
Short Circuit Protection		Continuous, Auto Recovery

GENERAL SPECIFICATIONS:

Efficiency		See Table
Isolation Voltage.....	1 minute; Input to Output	5000VDC max.
Isolation Resistance	Input to Output	1000 Mohm min.
Isolation Capacitance.....		12pF typ.
Leakage Current.....	Touch Current (240VAC, 60Hz)	2µA max.
Working Voltage	Rated	250VAC max.
Switching Frequency		300KHz typ.
Operating Ambient Temperature	Derating, above 80-83°C, see Derating Curve	-40°C to +90°C
Operating Case Temperature	At the center part of case plate	-40 min. / 105°C max.
Storage Temperature		-55°C to +125°C
Humidity		95% RH max. Non condensing
MTBF	MIL-STD-217F, GB, 25°C, Full Load	4800 KHrs min.
Shock/Vibration		MIL-STD-810F Compliant
Altitude		5000m Operating
Thermal Shock		MIL-STD-810F
EMI.....	with external Filter	Meets EN55032 Class B
ESD.....		Meets EN61000-4-2 Level 2: Air±8kV, contact ±4kV
Radiated Immunity		Meets EN61000-4-3 Level 2: 80-1000MHz, 3V/m
Fast Transient.....	Meets EN61000-4-4 Level 2: On power input port, ±0,5kV, external input TVS required	
Surge	Meets EN61000-4-5 Level 2: Line to Line, ±0,5kV, external input TVS	
Conducted Immunity	Meets EN61000-4-6 Level 2: 0,15-80MHz, 3V	
Magnetic Field Immunity Meets	Meets EN61000-4-8 Level 2: 50 or 60Hz, 3A/m (rms)	
Dimensions	PIN Version	24 x 13,7 x 9,9 mm
	SMD Version DVS	24 x 18,1 x 10,2 mm
Potting Material.....		UL94V-0
Case Material	Non-Conductive Black Plastic, DAP, UL94V-0	
Weight.....		8g typ.

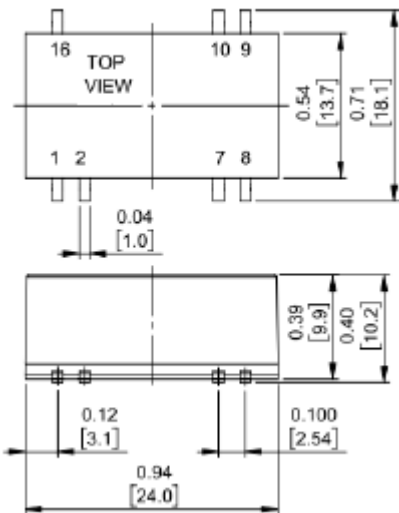
All Specifications at TA = 25°C, Vin = nominal voltage



Case SMD

All dimensions in inches (mm)
 Tolerances: Inches: x.xx=±0.02, x.xxx=±0.0010 Millimeters: x.x=±0.5, x.xx=±0.25
 Pin Size: 0.02±0.002 Inch, 0,5±0.05 mm DIA

SMD Version DVS



Pin	Single Output SMD	Dual Output SMD
1	-V Input	-V Input
2	Remote ON/OFF	Remote ON/OFF
7	NC	NC
8	NC	Common
9	+V Output	+V Output
10	-V Output	-V Output
16	+V Input	+V Input

*NC-NO CONNECTION WITH PIN