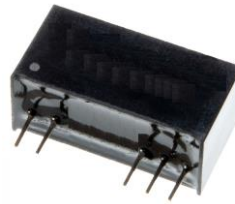




1 Watt, Unregulated  
DC/DC Converters  
Series DV1-S9-1-5KV



**Features**

- 1 Watt Unregulated Outputs
- Compact SIP-9 Package
- Efficiency to 85%
- Low Leakage Current <2µA
- Shock & Vibration EN50155 (EN61373) Complain
- Safety Meets IEC/EN/UL 62368-1, IEC/EN/ES60601-1 2x MOPP
- Fixed Switching Frequency
- Continuous Short Circuit Protection
- Fire & Smoke EN45545-2
- 5000VDC I/O Isolation rated for 250Vac working voltage

MODEL NUMBER	INPUT VOLTAGE [ VDC ]	OUTPUT VOLTAGE [ VDC ]	OUTPUT CURRENT [ mA ]		EFF. [ % ]	CAP. [ µF ]
			MIN.	MAX.	TYP.	MAX. LOAD
DV1-S9-1-05S05-5KV	4,5 – 5,5 ( 5 )	5	0	200	82	820
DV1-S9-1-05S12-5KV		12	0	83	85	470
DV1-S9-1-05S15-5KV		15	0	67	84	470
DV1-S9-1-05D05-5KV		±5	0	±100	85	470
DV1-S9-1-05D12-5KV		±12	0	±42	85	220
DV1-S9-1-05D15-5KV		±15	0	±34	84	220
DV1-S9-1-12S05-5KV	9,6 – 14,4 ( 12 )	5	0	200	82	820
DV1-S9-1-12S12-5KV		12	0	83	84	470
DV1-S9-1-12S15-5KV		15	0	67	83	470
DV1-S9-1-12D05-5KV		±5	0	±100	82	470
DV1-S9-1-12D12-5KV		±12	0	±42	83	220
DV1-S9-1-12D15-5KV		±15	0	±34	83	220
DV1-S9-1-15S05-5KV	12 – 18 ( 15 )	5	0	200	83	820
DV1-S9-1-15S12-5KV		12	0	83	84	470
DV1-S9-1-15S15-5KV		15	0	67	84	470
DV1-S9-1-15D05-5KV		±5	0	±100	82	470
DV1-S9-1-15D12-5KV		±12	0	±42	83	220
DV1-S9-1-15D15-5KV		±15	0	±34	83	220
DV1-S9-1-24S05-5KV	19,2 – 28,8 ( 24 )	5	0	200	82	820
DV1-S9-1-24S12-5KV		12	0	83	83	470
DV1-S9-1-24S15-5KV		15	0	67	83	470
DV1-S9-1-24D05-5KV		±5	0	±100	80	470
DV1-S9-1-24D12-5KV		±12	0	±42	81	220
DV1-S9-1-24D15-5KV		±15	0	±34	81	220

Note:

1. Nominal Input Voltage: 5V, 12V, 24V or 48V

Technische Änderungen vorbehalten / Technical change reserved

## INPUT SPECIFICATIONS:

Input Voltage Range.....		See Table
Input Surge Voltage (100ms max.) .....	5V .....	6Vdc max.
	12V .....	25Vdc max.
	15V .....	25Vdc max.
	24V .....	35Vdc max.
No Load Input Current ( $I_o=0A$ ) .....	$V_{in}$ 5 .....	30mA typ.
	$V_{in}$ 12V .....	30mA typ.
	$V_{in}$ 15V .....	15mA typ.
	$V_{in}$ 24V .....	10mA typ.
Inrush Current.....		0,1A <sup>2</sup> s max.
Input Reflected Ripple Current.....		30mA typ.
Input Filter .....		Capacitive

## OUTPUT SPECIFICATIONS:

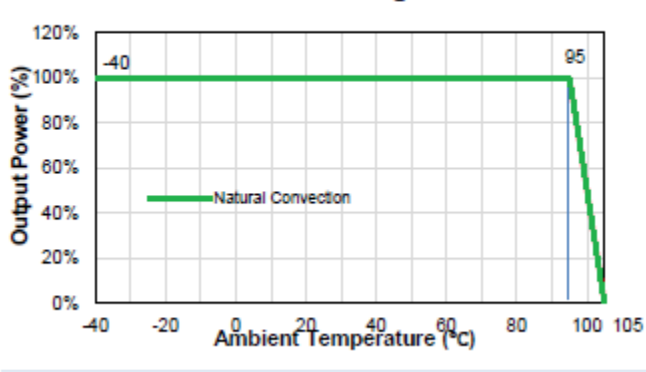
Voltage Set Point Accuracy .....	$V_o$ 5V, 12V, 15V, $\pm 5V$ .....	$\pm 3,5\%$ max.
	$V_o$ $\pm 12V$ , $\pm 15V$ .....	$\pm 1,0\%$ max.
Output Voltage Current Transient: 75% to 100% of $I_o$ max Step Load Change ( within 1% $V_{out}$ nominal )		
Error Band .....		$\pm 5\%$ $V_{out}$ nominal max.
Recovery Time .....		250 $\mu$ s max.
Ripple & Noise, 20MHz BW .....		100mV pk-pk, max.
Temperature Coefficient.....		$\pm 0,03\%/^{\circ}C$
Line Regulation.....	$V_{in}$ per 1,0% change in Input Voltage, Full Load .....	$\pm 0,5\%$ max.
Load Regulation .....	Full Load to 0% Load .....	$\pm 10\%$ max.
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 .....		15pF typ.
Leakage Current.....	240VAC, 60Hz .....	2 $\mu$ A max.
Working Voltage .....	rated .....	250VAC max.
Switching Frequency .....		250KHz typ.
Operating Ambient Temperature .....	Derating, above 95 $^{\circ}C$ , see Derating Curve .....	-40 $^{\circ}C$ to +105 $^{\circ}C$
Operating Case Temperature .....	At the center part of case plate .....	-40 min. / 105 $^{\circ}C$ max.
Storage Temperature .....		-55 $^{\circ}C$ to +125 $^{\circ}C$
Humidity .....		95% RH max. Non condensing
MTBF .....	MIL-STD-217F,GB,25 $^{\circ}C$ , Full Load .....	19000 Khrs typ.
Shock/Vibration .....		MIL-STD-810F Compliant
Altitude .....		5000m Operating, 12000m Transport
Thermal Shock .....		MIL-STD-810F
EMI .....		Meets EN55032 Class B with external Filter
ESD .....		Meets EN61000-4-2 Level 2: Air $\pm 8kV$ , contact $\pm 4kV$
Radiated Immunity .....		Meets EN61000-4-3 80-1000MHz, 3V/m
Fast Transient.....	Meets EN61000-4-4 On power input port, $\pm 0,5kV$ , external input TVS required	
Surge .....	Meets EN61000-4-5 Line to Line, $\pm 0,5kV$ , external input TVS required	
Conducted Immunity .....	Meets EN61000-4-6 0,15-80MHz, 3V	
Magnetic Field Immunity .....	Meets EN61000-4-8 50 or 60Hz, 3A7m (rms)	
Dimensions .....		19,6 x 9,9 x 12,5 mm
Potting Material.....		UL94V-0
Case Material .....		Non-Conductive Black Plastic, UL94V-0
Weight.....		4.8g typ.

All Specifications at TA = 25 $^{\circ}C$ ,  $V_{in}$  = nominal voltage

Power Derating Curve

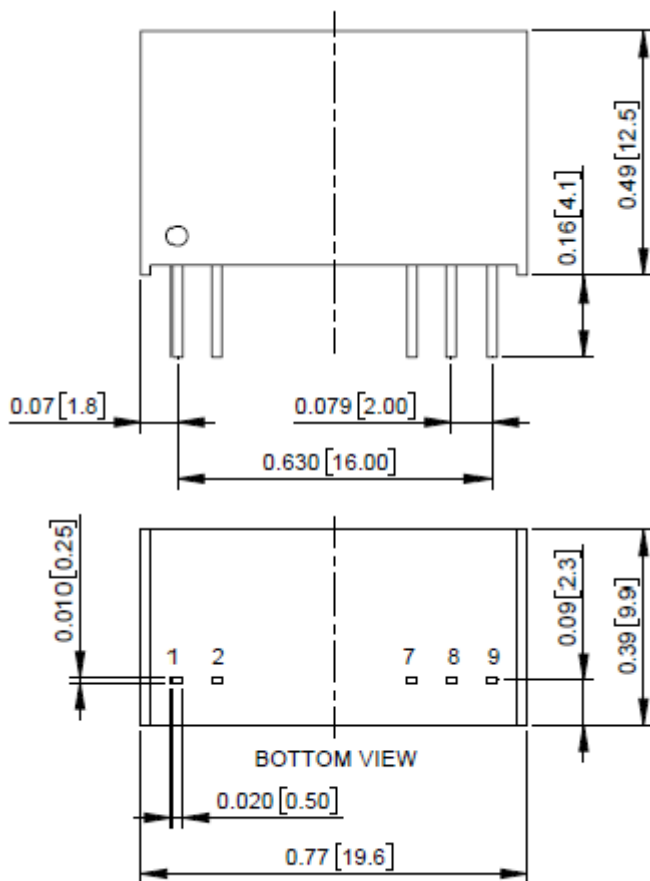


Case SIP 9

All dimensions in inches (mm)

Tolerances: Inches: x.xx=±0.02, .x.xxx=±0.010 Millimeters: x.x=±0.5, x.xx=±0.25

Pin Size: x.xxx=±0.004 Inch , x.xx=±0.10 mm



PIN CONNECTION		
PIN	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
7	-Vout	-Vout
8	No Pin	Common
9	+Vout	+Vout