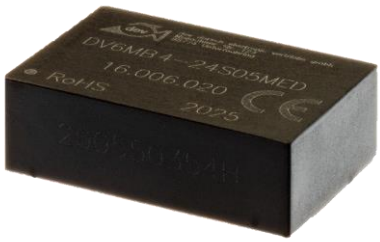
6 Watt, 4:1 Wide Input DC/DC Converters Series DV6MB4-MED



Features

- 6 Watt Isolated Output
- Regulated Outputs
- 4:1 Wide Input Range
- Isolation Voltage I/O 6000VDC
- Reinforced Isolation, 2MOPP
- <5 µA Leakage Current
- Transformer creepage distance 8mm
  Transformer clearance 5mm
- Efficiency up to 85%
- Operating Temperature Range -40°C to +85°C
- Input Under Voltage Protection
- Short Circuit, Over Current & Voltage Protection
- EMI Meets EN55022 Class A
- EN60601-1(3rd edition medical grade) approved
- Industry Standard Pinout

MODEL NUMBER	INPUT VOLTAGE [VDC]	OUTPUT VOLTAGE [VDC]	OUTPUT CURRENT [mA] Max.	OUTPUT CURRENT [mA] Min.	EFF. [%] Min.	EFF. [%] Typ.	CAP. Load [µF] MAX.	CASE
DV6MB4-24S05MED	9 – 36	5	1200	0	79	81	2700	B
DV6MB4-24S12MED		12	500	0	82	84	1000	
DV6MB4-24S15MED		15	400	0	83	85	680	
DV6MB4-24S24MED		24	250	0	82	84	470	
DV6MB4-48S05MED	18 – 75	5	1200	0	79	81	2700	B
DV6MB4-48S12MED		12	500	0	82	84	1000	
DV6MB4-48S15MED		15	400	0	83	85	680	
DV6MB4-48S24MED		24	250	0	82	84	470	

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INPUT SPECIFICATIONS:

Input Voltage Range	24Vin	9-36V
	48Vin	18-75V
Input Current (Full Load / No Load)	24Vin	317 / 8 mA max.
	48Vin	159 / 7 mA max.
Input Surge Voltage (1sec. max.)	24Vin	50Vdc max.
	48Vin	100Vdc max.
Start-up Voltage	24Vin	9V max.
	48Vin	18V max.
Input Under Voltage Protection	24Vin	6,5V typ.
	48Vin	15,5V typ.
Input Filter		Pi Type

OUTPUT SPECIFICATIONS:

Voltage Accuracy		+/-3,0% max.
Line Regulation	(From Low to High at Full Load)	±0,5% max.
Load Regulation	(5% to 100% Load)	±1,0% max.
	(0% to 100% Load)	±5,0% max.
Transient Response: 25% Step Load Change		
Error Band		±5% Vout nominal
Recovery Time		500 µs max.
Temperature Coefficient		0,03%/°C
Ripple and Noise, 20 MHz BW (at＜5% load is 5%Vo max.)		180mV p-p max.
Over Current Protection	(Input Voltage Range)	110%Vo min. / 260%I0 max.
Over Voltage Protection	(Input Voltage Range)	110%Vo min. / 160%I0 max.
Short Circuit Protection		continuous, self-recovery

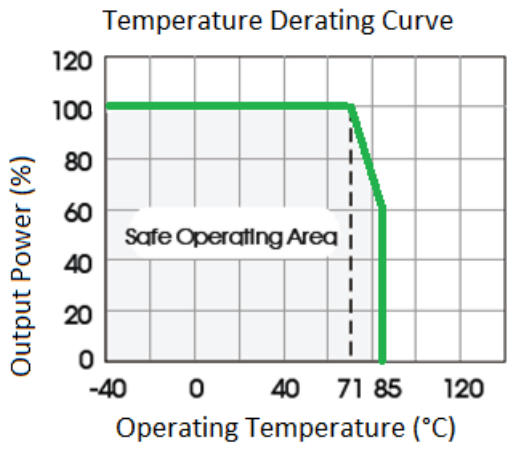
GENERAL SPECIFICATIONS:

Efficiency		See Table
Isolation Voltage I/O (Electric Strength test for 1 minute with a leakage current of 1mA max.)		6000VDC min.
Insulation Resistance (Input-output resistance at 500VDC)		10000 Mohms
Isolation Capacitance (Input-output capacitance at 100KHz/0.1V)		20pF max.
Leakage Current (240VAC/60Hz)		5µA max.
Reinforced Insulation	Transformer creepage	8,0 mm min.
	Transformer clearance	5,0 mm min.
	PCB creepage & clearance	8,0 mm min.
	Optocoupler creepage	8,0 mm min.
Operating Ambient Temperature Range		-40°C to +85°C
Derating, above 71°C		See Derating Curve
Storage Humidity		95% RH max. non condensing
Storage Temperature Range		-40°C to +100°C
Pin Soldering Resistance Temperature (Soldering spot is 1.5mm away from case for 10 seconds)		300°C max.
Switching Frequency		300KHz, typ.
Standard Safety meet		EN60601-1：2006+A1：2013
Insulation Protection Grade (240VAC/60Hz)		2×MOPP
MTBF (MIL-HDBK-217F@25℃)		1000 K hours, min.
EMI CE		CISPR32/EN55032 CLASS A (without extra components)
Immunity	ESD	IEC/EN61000-4-2 Contact ±6KV
	Cooling	Free air convection
Dimensions		31.60 × 20.30 × 10.20 mm
Standard Models		Non-Conductive Black Plastic (UL94 V-0)
Weight		13 g typ.

Note:

1. **Switching frequency is measured at full load. The module reduces the switching frequency for light load (below 50%) efficiency improvement.**

All Specifications Typical at Nominal Line, Full Load and 25°C. Unless Otherwise Noted



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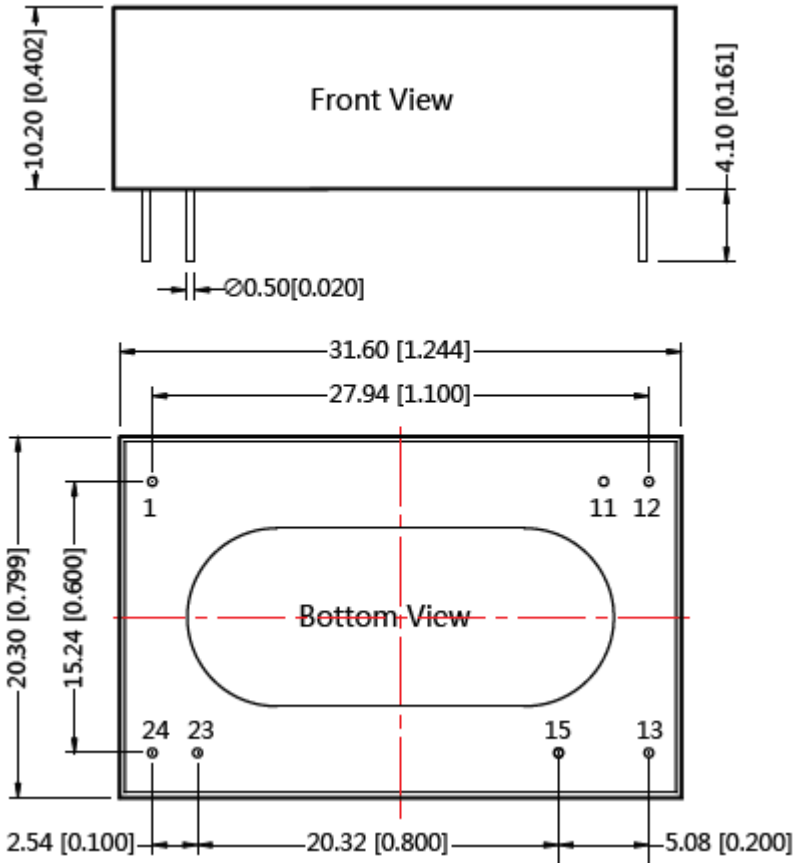
Note:
All Dimensions in mm [Inches]
Pin Diameter Tolerance is ±0.10 [±0.004]
Tolerances: ±0.50 [±0.020]



PIN CONNECTION		
Pin	Single Output	
1	+V Input	
11	No Pin	
12	-V Output	
13	+V Output	
15	No Pin	
23	-V Input	
24	-V Input	

*NC-NO CONNECTION WITH PIN

Typical Application

All the DC/DC converters of this series are tested before delivery using the recommended circuit shown in Fig. 2.
Input and/or output ripple can be further reduced by appropriately increasing the input & output capacitor values Cin and Cout 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.

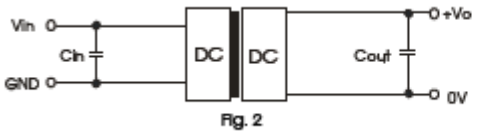


Fig. 2

Vin	Cin	Cout
24VDC	100µF	10µF
48VDC	10µF ~47µF	10µF

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