

DMV3W

4:1 Input, Isolated Regulated Output
3W DC-DC Module Power Supply



Product Family Features

- Wide voltage input 4:1
- No external element required
- Continuous short circuit protection and self-recovery
- Operating temperature range: -40°C~+85°C
- Isolation Voltage:1500VDC
- Metal shield package
- International standard pin mode
- 100% full load aging

Models

Model	Inputvoltage (Vdc)	Outputvoltage (Vdc)	Outputcurrent (mA)	Efficiency Typ.	Capacitive Load [Max](uF)
DMV3W-2421	24(9-36)	±3.3	±456	79	2200
DMV3W-2422	24(9-36)	±5	±300	82	1000
DMV3W-2423	24(9-36)	±9	±167	83	680
DMV3W-2424	24(9-36)	±12	±125	84	470
DMV3W-2425	24(9-36)	±15	±100	85	330
DMV3W-2426	24(9-36)	±24	±62.5	85	100
DMV3W-2411	24(9-36)	3.3	909	79	4700
DMV3W-2412	24(9-36)	5	600	83	3300
DMV3W-2413	24(9-36)	9	333	84	1000
DMV3W-2414	24(9-36)	12	250	84	680
DMV3W-2415	24(9-36)	15	200	85	470
DMV3W-2416	24(9-36)	24	125	85	220

Product Datasheet

Models

Model	Inputvoltage (Vdc)	Outputvoltage (Vdc)	Outputcurrent (mA)	Efficiency Typ.	Capacitive Load [Max](uF)
DMV3W-4821	48(18-72)	±3.3	±456	79	2200
DMV3W-4822	48(18-72)	±5	±300	81	1000
DMV3W-4823	48(18-72)	±9	±167	83	680
DMV3W-4824	48(18-72)	±12	±125	84	470
DMV3W-4825	48(18-72)	±15	±100	85	330
DMV3W-4826	48(18-72)	±24	±62.5	85	100
DMV3W-4811	48(18-72)	3.3	909	78	4700
DMV3W-4812	48(18-72)	5	600	81	3300
DMV3W-4813	48(18-72)	9	333	83	2200
DMV3W-4814	48(18-72)	12	250	84	1000
DMV3W-4815	48(18-72)	15	200	85	680
DMV3W-4816	48(18-72)	24	125	85	470

Input Specifications

Parameter	Min.	Typ.	Max.	Note
Input Undervoltage Protection	6.6 Vdc	7.3 Vdc	-	Input voltage 24Vdc
	13.5 Vdc	14.8 Vdc	-	Input voltage 48Vdc
Starting Voltage	-	8.2 Vdc	9 Vdc	Input voltage 24Vdc
	-	16.2 Vdc	18 Vdc	Input voltage 48Vdc
Impulse Voltage (1sec.max)	-0.7 Vdc	-	50 Vdc	Input voltage 24Vdc
	-0.7 Vdc	-	100 Vdc	Input voltage 48Vdc
No-load Current	-	7 mA	7 mA	Input voltage 24Vdc
	-	3 mA	5 mA	Input voltage 48Vdc

Output Specifications

Parameter	Min.	Typ.	Max.	Note
Output Power	0W		3W	
Output Positive Voltage Accuracy	-	±1%	±2%	
Output Negative Voltage Accuracy	-	±2%	±3%	
Line Voltage Regulation	-	±0.2%	±0.5%	
Load Regulation	-	±0.5%	1%	
Ripple & Noise	-	50	100	mV P-P
Output Short Circuit Protection	Sustainable and automatic restoration			

Product Datasheet

General Specifications

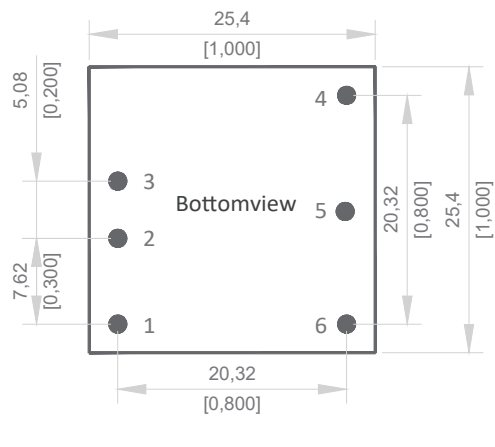
Parameter	Min.	Typ.	Max.	Note
Storage Humidity	5%	-	95%	
Operating Temps	-40°C	-	85°C	
Storage Temps	-55°C	-	125°C	
Operating Case Temps	-	20°C	30°C	
Pin Welding Temps	-	-	300°C	
Temps Drift Coefficient	-	-	±0.03%/°C	
Switching Frequency	-	320	350	KhZ
Input Filter	π-type filtering			
Hot Plug	not supported			
MTTF	1000K h	-	-	MIL-HDBK-217@25°C
Weight	-	12g	-	
Cooling	Free air convection			
Case Material	Black metal shell			

Safety&EMC Compliance

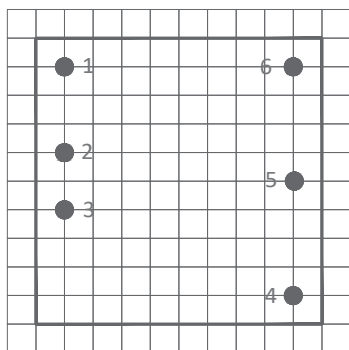
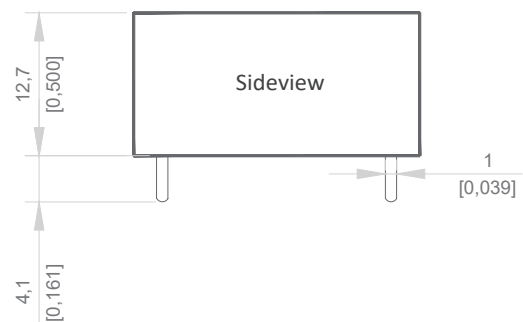
Isolation Voltage 1 minute, leakage current 1mA max	Ip to Op:1.5kV	
	IP/OP-FG:1KV	
Isolation Resistance 500VDC, 25°C, 70%RH	1000M Ω	
EMI	CE	CISPR32/EN55032 CLASS B (see EMI recommended circuit)
	RE	CISPR32/EN55032 CLASS B (see EMI recommended circuit)
EMS	ESD	IEC/EN61000-4-2 CONTACT ±4KV perf. Criteria B
	RS	IEC/EN61000-4-3 10V/M perf. Criteria A
	EFT	IEC/EN61000-4-4 ±2KV (see EMS recommended circuit) perf. Criteria B
	Surge	IEC/EN61000-4-5 Line-Line ±2KV (see EMS recommended circuit) perf. Criteria B
	CS	IEC/EN61000-4-6 3 VR.M.S perf. Criteria A
	Voltage sag, drop and short-time interrupt immunity	IEC/EN61000-4-29 0%, 70% perf. Criteria B

Product Datasheet

Dimensions & Interface Definition



UNIT: mm
[Inth]



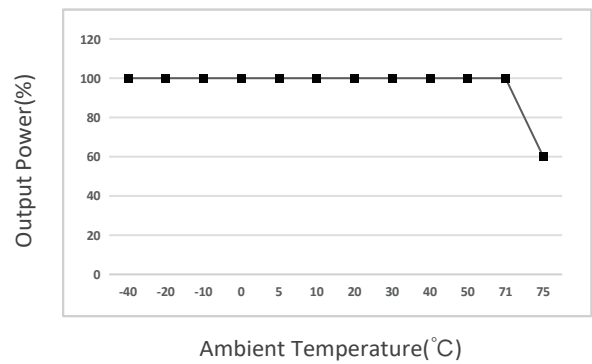
Recommended PCBA diagram

NO	Single	Double
1	NP	NP
2	GND	GND
3	VIN	VIN
4	+Vo	+Vo
5	NP	0V
6	0V	-Vo

NP: No such pin
Tolerance: $\pm 0.5\text{mm}$ [0.020inh]

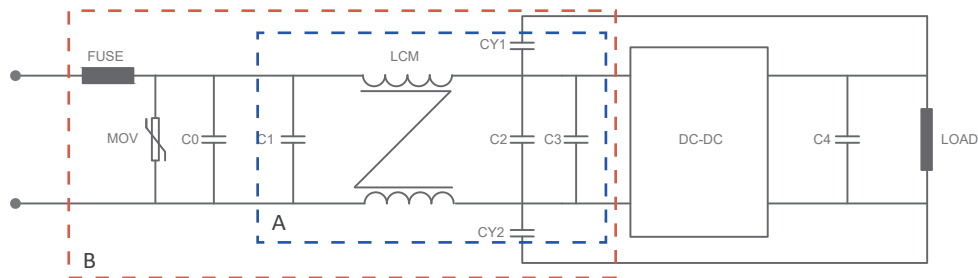
Performance Curve

Ambient Temperature Derating Curve



Product Datasheet

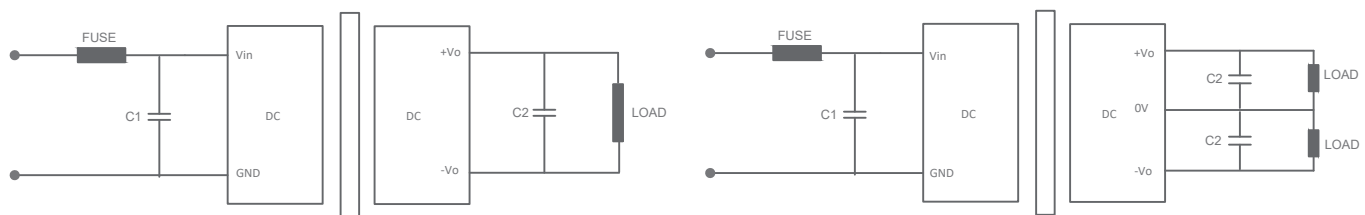
EMC Recommended Circuit



For the part selected by the frame line, Part A is used for EMI performance enhancement, and Part B is used for EMS testing.

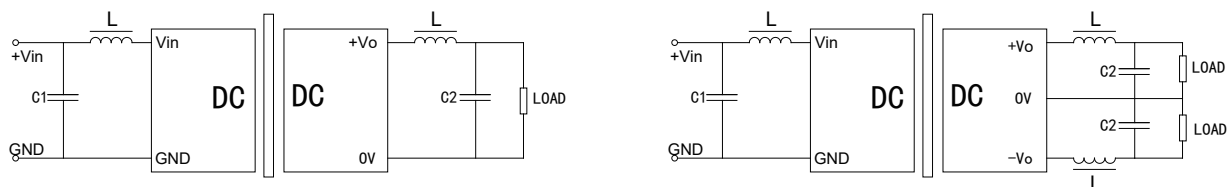
Input Voltage	FUSE	MOV	C0	C1	C2	C3	C4	LCM	CY1、CY2
24VDC	Select based on the actual input current of the customer	20D470K	680uF/50V	1uF/50V	330uF/50V	4.7uF/50V	Refer to the output parameters in the application circuit	4.7mH	1nF/2kV
48VDC		14D101K	680uF/100V	1uF/100V	330uF/100V	4.7uF/100V		4.7mH	1nF/2kV

Recommended Application Circuit



Input Voltage	External Capacitance C1	Single Output Voltage	External Capacitance C2	Double Output Voltage	External Capacitance C2
24	47uF/50V	5VDC	10uF/16V	±5VDC	10uF/16V
48	10uF/100V	9VDC	10uF/16V	±9VDC	10uF/16V
		12VDC	10uF/25V	±12	10uF/25V
		15VDC	10uF/25V	±15VDC	10uF/25V
		24VDC	10uF/50V	±24VDC	10uF/50V

Application precautions



Avoid Excessive Output External Capacitance: The capacity value of the output external capacitor $C2$ should not be too large, otherwise it is easy to cause overcurrent or bad startup when the module is started. The specific value should be selected according to the external capacitor table.

The input of this series does not support parallel use of hot plug and output.

For situations requiring high ripple noise, external LC filter circuit should be connected, and the resonant frequency of LC filter should be far less than the switching frequency of DC/DC module to prevent mutual interference, resulting in output ripple increase or module damage, as shown in the figure: