

DMV6

2:1 Input, Isolated Regulated Output
6W DC-DC Module Power Supply



Product Family Features

Wide voltage input 2:1
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	Input voltage (Vdc)	Output voltage (Vdc)	Output current (mA)	Efficiency Typ.	Capacitive Load [Max](uF)
DMV6-0522	5(4.5-9)	±5	±600	82	2200
DMV6-0526	5(4.5-9)	±9	±333	82	820
DMV6-0523	5(4.5-9)	±12	±250	84	470
DMV6-0524	5(4.5-9)	±15	±200	83	220
DMV6-0525	5(4.5-9)	±24	±125	84	100
DMV6-0511	5(4.5-9)	5	1200	80	3300
DMV6-0512	5(4.5-9)	9	667	81	1000
DMV6-0516	5(4.5-9)	12	500	84	680
DMV6-0513	5(4.5-9)	15	400	84	470
DMV6-0514	5(4.5-9)	24	250	83	220
DMV6-1221	12(9-18)	±5	±600	82	2200
DMV6-1222	12(9-18)	±9	±333	84	820
DMV6-1223	12(9-18)	±12	±250	85	470
DMV6-1224	12(9-18)	±15	±200	85	220
DMV6-1225	12(9-18)	±24	±125	86	100
DMV6-1211	12(9-18)	3.3	1818	78	4700
DMV6-1212	12(9-18)	5	1200	82	3300
DMV6-1216	12(9-18)	9	667	84	1000
DMV6-1213	12(9-18)	12	500	85	680
DMV6-1214	12(9-18)	15	400	87	470
DMV6-1215	12(9-18)	24	250	85	220

Product Datasheet

Models

Model	Inputvoltage (Vdc)	Outputvoltage (Vdc)	Outputcurrent (mA)	Efficiency Typ.	Capacitive Load [Max](uF)
DMV6-2421	24(18-36)	±5	±600	83	2200
DMV6-2422	24(18-36)	±9	±333	84	820
DMV6-2423	24(18-36)	±12	±250	85	470
DMV6-2424	24(18-36)	±15	±200	85	220
DMV6-2425	24(18-36)	±24	±125	86	100
DMV6-2411	24(18-36)	3.3	1818	79	4700
DMV6-2412	24(18-36)	5	1200	82	2200
DMV6-2413	24(18-36)	9	667	84	1000
DMV6-2414	24(18-36)	12	500	87	680
DMV6-2415	24(18-36)	15	400	87	470
DMV6-2416	24(18-36)	24	250	86	220
DMV6-4821	48(36-72)	±5	±600	83	2200
DMV6-4822	48(36-72)	±9	±333	84	820
DMV6-4823	48(36-72)	±12	±250	85	470
DMV6-4824	48(36-72)	±15	±200	86	220
DMV6-4825	48(36-72)	±24	±125	86	100
DMV6-4811	48(36-72)	3.3	1818	80	4700
DMV6-4812	48(36-72)	5	1200	83	3300
DMV6-4816	48(36-72)	9	667	85	1000
DMV6-4813	48(36-72)	12	500	87	680
DMV6-4814	48(36-72)	15	400	87	470
DMV6-4815	48(36-72)	24	250	87	220

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Input Specifications

Parameter	Min.	Typ.	Max.	Note
Input Undervoltage Protection	3 Vdc	3.8 Vdc	-	Input voltage 5Vdc
	6.6 Vdc	7.3 Vdc	-	Input voltage 12Vdc
	13.5 Vdc	14.8 Vdc	-	Input voltage 24Vdc
	27 Vdc	30 Vdc	-	Input voltage 48Vdc
Starting Voltage	-	4 Vdc	4.5 Vdc	Input voltage 5Vdc
	-	8.2 Vdc	9 Vdc	Input voltage 12Vdc
	-	16.2 Vdc	18 Vdc	Input voltage 24Vdc
	-	33 Vdc	36 Vdc	Input voltage 48Vdc
Impulse Voltage (1sec.max)	-0.7 Vdc	-	12 Vdc	Input voltage 5Vdc
	-0.7 Vdc	-	25 Vdc	Input voltage 12Vdc
	-0.7 Vdc	-	50 Vdc	Input voltage 24Vdc
	-0.7 Vdc	-	100 Vdc	Input voltage 48Vdc
No-load Current	-	20 mA	30 mA	Input voltage 5Vdc
	-	8 mA	13 mA	Input voltage 12Vdc
	-	7 mA	7 mA	Input voltage 24Vdc
	-	3 mA	6 mA	Input voltage 48Vdc

Output Specifications

Parameter	Min.	Typ.	Max.	Note
Output Power	0W		6W	
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

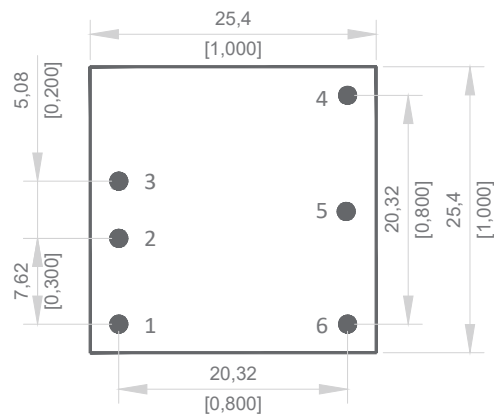
Parameter	Min.	Typ.	Max.	Note
Storage Humidity	5%	-	95%	
Operating Temps	-40°C	-	85°C	
Storage Temps	-55°C	-	125°C	
Operating Case Temps	-	20°C	30°C	
Pin Welding Temps	-	-	300°C	
Temps Drift Coefficient	-	-	±0.03%/°C	
Switching Frequency	-	320	350	KhZ
Input Filter	π-type filtering			
Hot Plug	not supported			
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

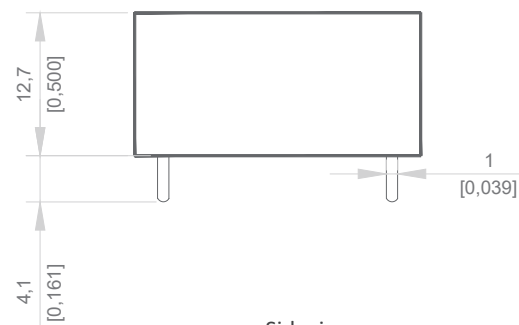
Product Datasheet

Dimensions & Interface Definition

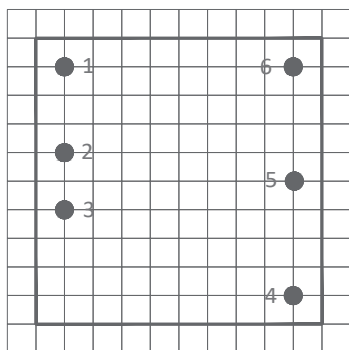


Bottomview

UNIT: mm
[Inch]



Sideview



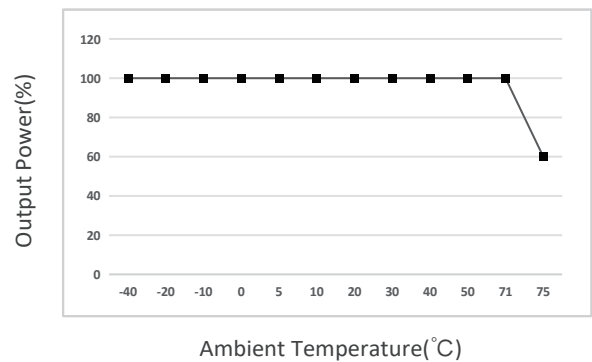
Recommended PCBA diagram

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

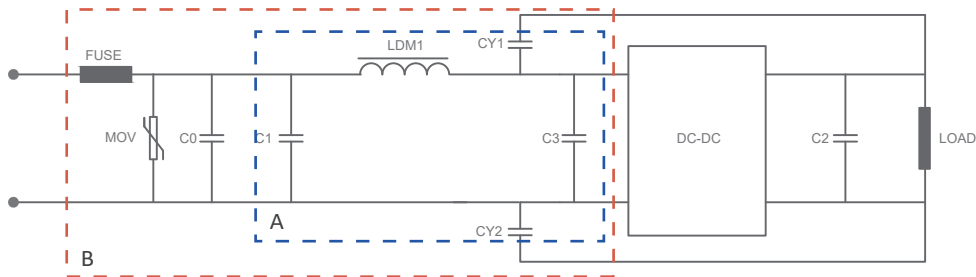
NP: No such pin
Tolerance: $\pm 0.5\text{mm}$ [0.020inch]

Performance Curve

Ambient Temperature Derating Curve



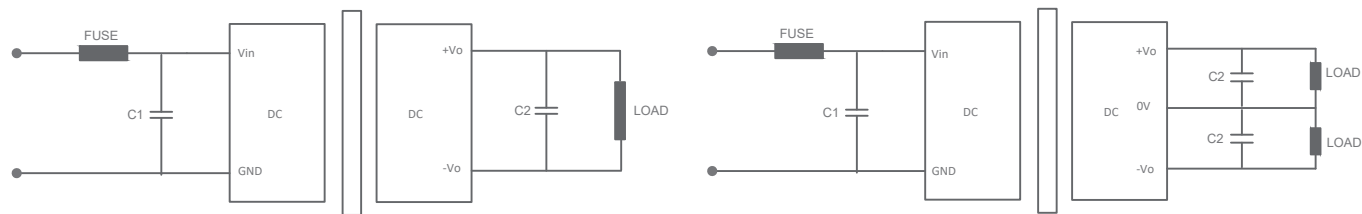
EMC Recommended Circuit



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

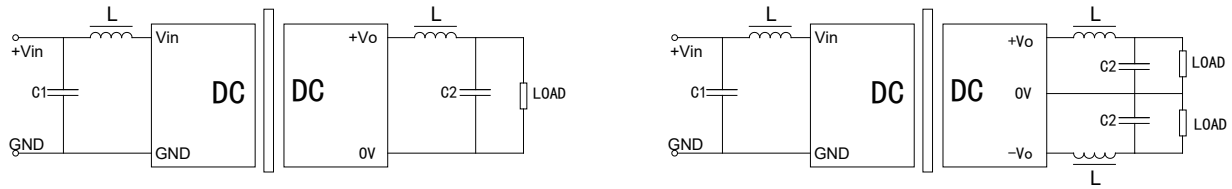
Input Voltage	FUSE	MOV	C0	C1	C2	C3	LDM1	CY1、CY2
5Vdc	Select based on the actual input current of the customer	/	1000uF/25 V	1uF/50V	Refer to the output parameters in the application circuit	330uF/15V	4.7mH	1nF/2kV
12Vdc		14D330K	1000uF/25 V	1uF/50V		330uF/15V	4.7mH	1nF/2kV
24Vdc		20D470K	1000uF/50 V	1uF/50V		330uF/50V	4.7mH	1nF/2kV
48Vdc		14D101K	330uF/100 V	4.7uF/50V		330uF/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
5Vdc	100uF/16V	5VDC	10uF/16V	±5VDC	10uF/16V
12Vdc	100uF/25V	9VDC	10uF/16V	±9VDC	10uF/16V
24Vdc	47uF/50V	12VDC	10uF/25V	±12	10uF/25V
48Vdc	100uF/100V	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: