

DMV10

2:1 Input, Isolated Regulated Output
10W 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	Inputvoltage (Vdc)	Outputvoltage (Vdc)	Outputcurrent (mA)	Efficiency Typ.	Capacitive Load [Max](uF)
DMV10-1220	12(9-18)	±3.3	±1515	80	4700
DMV10-1221	12(9-18)	±5	±1000	82	3300
DMV10-1222	12(9-18)	±9	±556	85	2200
DMV10-1223	12(9-18)	±12	±417	87	1000
DMV10-1224	12(9-18)	±15	±333	87	680
DMV10-1225	12(9-18)	±24	±208	87	330
DMV10-1210	12(9-18)	3.3	3030	80	4700
DMV10-1211	12(9-18)	5	2000	82	4700
DMV10-1212	12(9-18)	9	1111	85	2200
DMV10-1223	12(9-18)	12	833	87	1000
DMV10-1214	12(9-18)	15	667	87	680
DMV10-1215	12(9-18)	24	417	88	330
DMV10-2420	24(18-36)	±3.3	±1515	80	4700
DMV10-2421	24(18-36)	±5	±1000	83	3300
DMV10-2422	24(18-36)	±9	±556	85	2200
DMV10-2423	24(18-36)	±12	±417	86	1000
DMV10-2424	24(18-36)	±15	±333	87	680
DMV10-2425	24(18-36)	±24	±208	87	330

Models

Model	Inputvoltage (Vdc)	Outputvoltage (Vdc)	Outputcurrent (mA)	Efficiency Typ.	Capacitive Load [Max](uF)
DMV10-2410	24(18-36)	3.3	3030	80	4700
DMV10-2411	24(18-36)	5	2000	84	4700
DMV10-2412	24(18-36)	9	1111	86	2200
DMV10-2423	24(18-36)	12	833	87	1000
DMV10-2414	24(18-36)	15	667	88	680
DMV10-2415	24(18-36)	24	417	89	330
DMV10-4820	48(36-72)	±3.3	±1515	80	4700
DMV10-4821	48(36-72)	±5	±1000	83	3300
DMV10-4822	48(36-72)	±9	±556	86	2200
DMV10-4823	48(36-72)	±12	±417	87	1000
DMV10-4824	48(36-72)	±15	±333	88	680
DMV10-4825	48(36-72)	±24	±208	88	330
DMV10-4810	48(36-72)	3.3	3030	80	4700
DMV10-4811	48(36-72)	5	2000	84	4700
DMV10-4812	48(36-72)	9	1111	86	2200
DMV10-4823	48(36-72)	12	833	88	1000
DMV10-4814	48(36-72)	15	667	88	680
DMV10-4815	48(36-72)	24	417	88	470

Input Specifications

Parameter	Min.	Typ.	Max.	Note
Input Undervoltage Protection	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	-	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	-	25 Vdc	Input voltage 12Vdc
	-0.7 Vdc	-	50 Vdc	Input voltage 24Vdc
	-0.7 Vdc	-	100 Vdc	Input voltage 48Vdc
No-load Current	-	10 mA	15 mA	Input voltage 12Vdc
	-	5 mA	10 mA	Input voltage 24Vdc
	-	4 mA	5 mA	Input voltage 48Vdc

Product Datasheet

Output Specifications

Parameter	Min.	Typ.	Max.	Note
Output Power	0W		15W	
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			

General Specifications

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

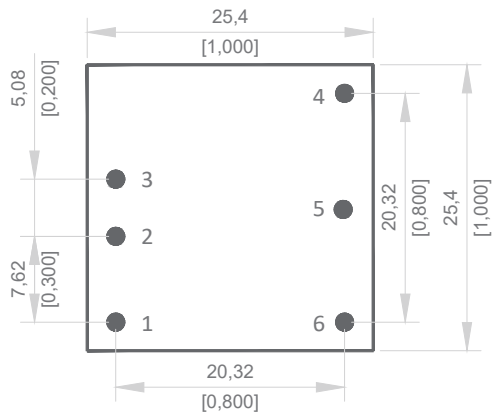
Product Datasheet

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 ± 4 KV perf. Criteria B
	RS	IEC/EN61000-4-3 10V/M perf. Criteria A
	EFT	IEC/EN61000-4-4 ± 2 KV (see EMS recommended circuit) perf. Criteria B
	Surge	IEC/EN61000-4-5 Line-Line ± 2 KV (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%

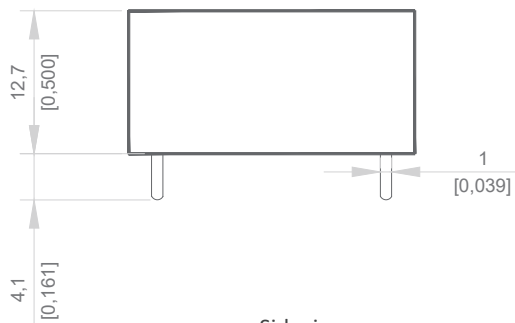
Product Datasheet

Dimensions & Interface Definition

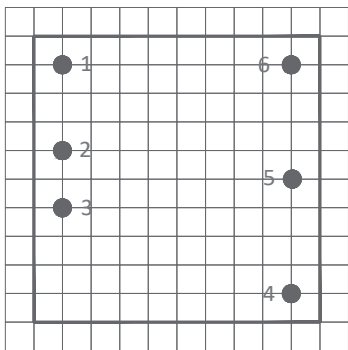


Bottomview

UNIT: mm
[Inch]



Sideview



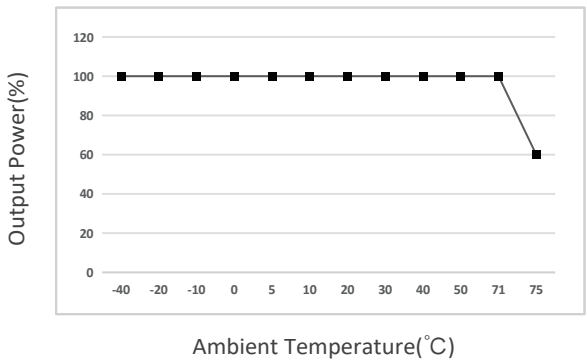
Recommended PCBA diagram

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]

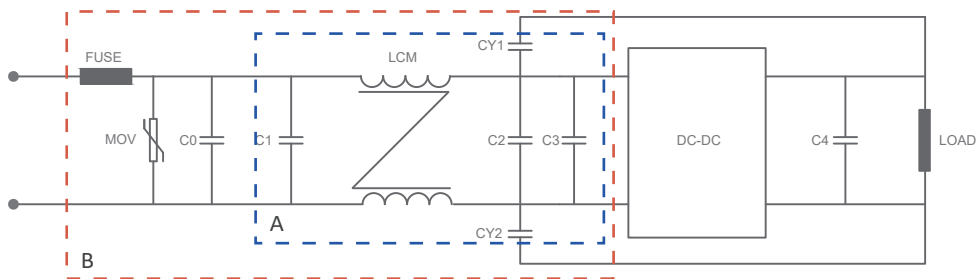
Performance Curve

Ambient Temperature Derating Curve



Product Datasheet

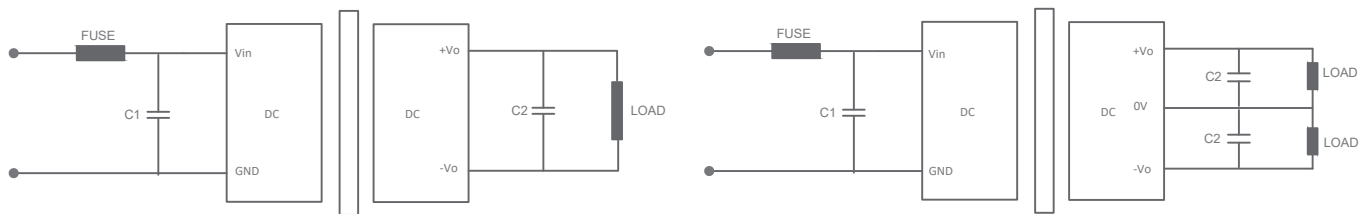
EMC Recommended Circuit



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

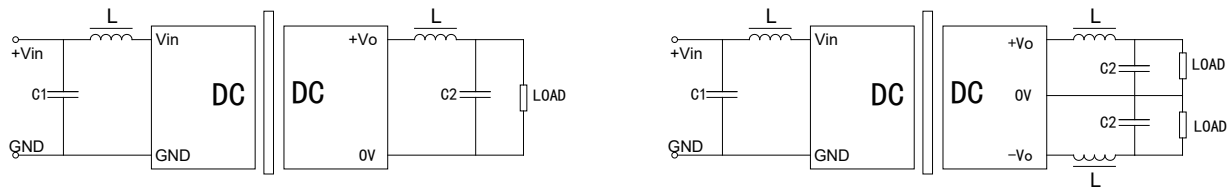
Input Voltage	FUSE	MOV	C0	C1	C2	C3	C4	LCM	CY1、CY2
12VDC	Select based on the actual input current of the customer	20D470K	680uF/50V	1uF/50V	330uF/50V	4.7uF/50V	Refer to the output parameters in the application circuit	4.7mH	1nF/2kV
24VDC		20D470K	680uF/50V	1uF/50V	330uF/50V	4.7uF/50V			
48VDC		14D101K	680uF/100V	1uF/100V	330uF/100V	4.7uF/100V			

Recommended Application Circuit



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