Product Datasheet

DMV3

2:1 Input, Isolated Regulated Output
3W 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

nternational standard pin mode

100% full load aging

Models

Model	Inputvoltage (Vdc)	Outputvoltage (Vdc)	Outputcurrent (mA)	Efficiency Typ.	Capacitive Load [Max](uF)
DMV3-0521	5(4.5-9)	±3.3	±456	78	3300
DMV3-0522	5(4.5-9)	±5	±300	80	2200
DMV3-0523	5(4.5-9)	±9	±167	83	1000
DMV3-0524	5(4.5-9)	±12	±125	85	470
DMV3-0525	5(4.5-9)	±15	±100	85	220
DMV3-0526	5(4.5-9)	±24	±62.5	83	100
DMV3-0511	5(4.5-9)	3.3	909	77	4700
DMV3-0512	5(4.5-9)	5	600	81	4700
DMV3-0513	5(4.5-9)	9	333	82	1000
DMV3-0514	5(4.5-9)	12	250	84	1000
DMV3-0515	5(4.5-9)	15	200	84	470
DMV3-0516	5(4.5-9)	24	125	83	330
DMV3-1221	12(9-18)	±3.3	±456	79	4700
DMV3-1222	12(9-18)	±5	±300	84	3300
DMV3-1223	12(9-18)	±9	±167	83	1000
DMV3-1224	12(9-18)	±12	±125	85	470
DMV3-1225	12(9-18)	±15	±100	86	330
DMV3-1226	12(9-18)	±24	±62.5	84	100

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Models

Model	Inputvoltage (Vdc)	Outputvoltage (Vdc)	Outputcurrent (mA)	Efficiency Typ.	Capacitive Load [Max](uF)
DMV3-1211	12(9-18)	3.3	909	79	4700
DMV3-1212	12(9-18)	5	600	83	4700
DMV3-1213	12(9-18)	9	333	84	2200
DMV3-1214	12(9-18)	12	250	85	820
DMV3-1215	12(9-18)	15	200	86	470
DMV3-1216	12(9-18)	24	125	85	330
DMV3-2421	24(18-36)	±3.3	±456	79	3300
DMV3-2422	24(18-36)	±5	±300	82	1000
DMV3-2423	24(18-36)	±9	±167	83	1000
DMV3-2424	24(18-36)	±12	±125	83	470
DMV3-2425	24(18-36)	±15	±100	86	330
DMV3-2426	24(18-36)	±24	±62.5	86	100
DMV3-2411	24(18-36)	3.3	909	81	4700
DMV3-2412	24(18-36)	5	600	82	4700
DMV3-2413	24(18-36)	9	333	84	1000
DMV3-2414	24(18-36)	12	250	85	820
DMV3-2415	24(18-36)	15	200	87	470
DMV3-2416	24(18-36)	24	125	86	330
DMV3-4821	48(36-72)	±3.3	±456	79	3300
DMV3-4822	48(36-72)	±5	±300	82	2200
DMV3-4823	48(36-72)	±9	±167	83	1000
DMV3-4824	48(36-72)	±12	±125	84	680
DMV3-4825	48(36-72)	±15	±100	84	470
DMV3-4826	48(36-72)	±24	±62.5	85	330
DMV3-4811	48(36-72)	3.3	909	79	4700
DMV3-4812	48(36-72)	5	600	82	4700
DMV3-4813	48(36-72)	9	333	85	1000
DMV3-4814	48(36-72)	12	250	85	1000
DMV3-4815	48(36-72)	15	200	85	470
DMV3-4816	48(36-72)	24	125	86	220

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	-	15 mA	25 mA	Input voltage 5Vdc
	-	7 mA	12 mA	Input voltage 12Vdc
	-	3 mA	6 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			

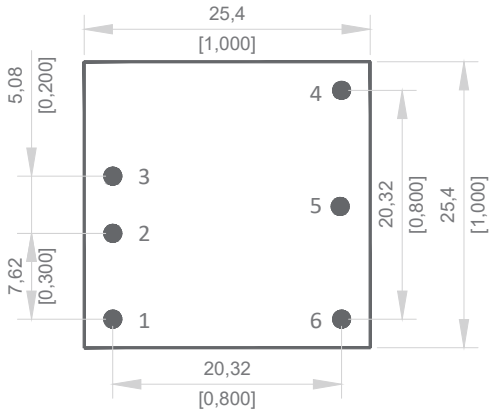
General Specifications

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°C
Weight		12g		
Cooling	Free air convection			
Case Material	Black metal shell			

Safety&EMC Compliance

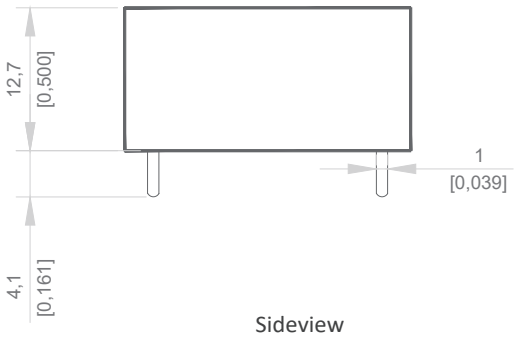
Isolation Voltage 1 minute, leakage current 1mA max	Ip to Op:1.5kV	
	IP/OP-FG:1KV	
Isolation Resistance 500VDC, 25°C, 70%RH	1000M Ω	
EMI	CE	CISPR32/EN55032 CLASS B（see EMI recommended circuit）
	RE	CISPR32/EN55032 CLASS B（see EMI recommended circuit）
EMS	ESD	IEC/EN61000-4-2 CONTACT ±4KV perf. Criteria 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 recommendedcircuit) 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

Dimensions & Lnterface Definition

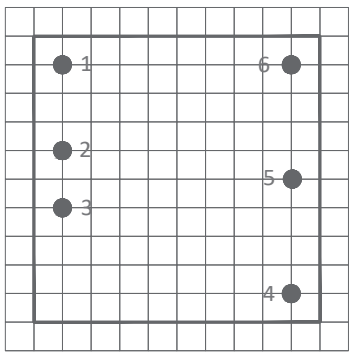


Bottomview

UNIT: mm [Inth]



Sideview



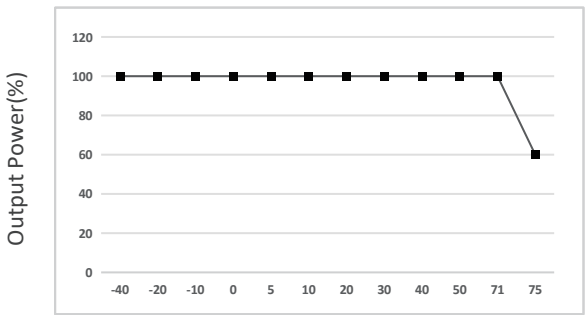
Recommended PCBA diagram

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:±0.5mm[0.020inth]

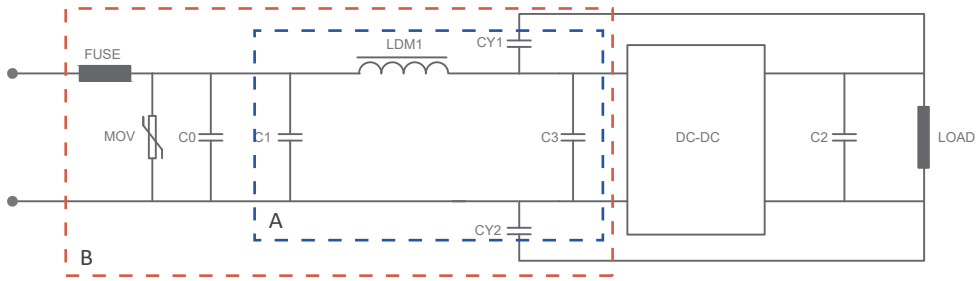
Performance Curve

Ambient Temperature Derating Curve



Ambient Temperature(˚C)

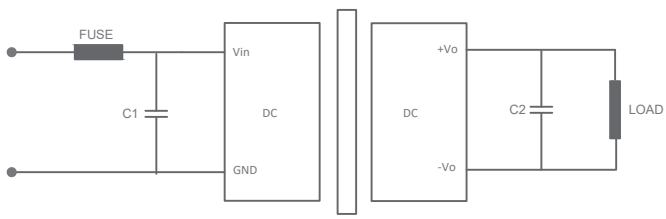
EMC Recommended Circuit

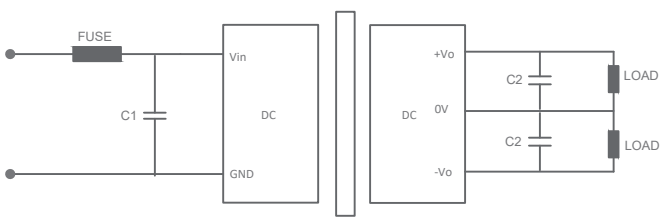


For the part selected by the frame line, Part A is used for EMI performance enhancement, and Part B is used for EMS testing.

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

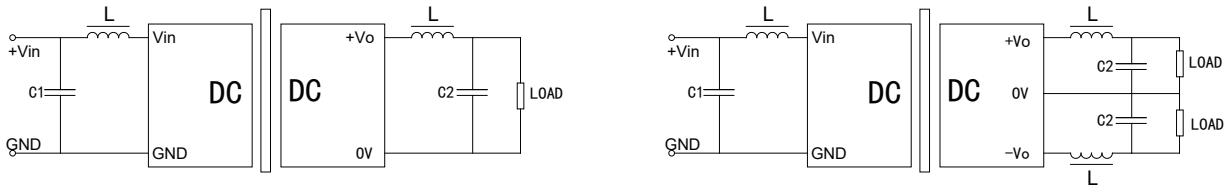
Recommended Application Circuit





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