

DMV15

2:1 Input, Isolated Regulated Output
15W 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)
DMV15-1210	12(9-18)	3.3	4545	84	4700
DMV15-1211	12(9-18)	5	3000	84	4700
DMV15-1212	12(9-18)	9	1667	87	3300
DMV15-1213	12(9-18)	12	1250	88	2200
DMV15-1214	12(9-18)	15	1000	89	1000
DMV15-1215	12(9-18)	24	625	89	820
DMV15-1221	12(9-18)	±5	±1500	84	4700
DMV15-1222	12(9-18)	±9	±833	87	3300
DMV15-1223	12(9-18)	±12	±625	88	2200
DMV15-1224	12(9-18)	±15	±500	89	1000
DMV15-1225	12(9-18)	±24	±313	89	680
DMV15-2410	24(18-36)	3.3	4545	87	4700
DMV15-2411	24(18-36)	5	3000	86	4700
DMV15-2412	24(18-36)	9	1667	88	3300
DMV15-2413	24(18-36)	12	1250	89	2200
DMV15-2414	24(18-36)	15	1000	89	1000
DMV15-2415	24(18-36)	24	625	89	820
DMV15-2421	24(18-36)	±5	±1500	85	4700
DMV15-2422	24(18-36)	±9	±833	87	3300
DMV15-2423	24(18-36)	±12	±625	88	2200
DMV15-2424	24(18-36)	±15	±500	89	1000
DMV15-2425	24(18-36)	±24	±313	89	680

Models

Model	Inputvoltage (Vdc)	Outputvoltage (Vdc)	Outputcurrent (mA)	Efficiency Typ.	Capacitive Load [Max](uF)
DMV15-4810	48(36-72)	3.3	4545	86	4700
DMV15-4811	48(36-72)	5	3000	86	4700
DMV15-4812	48(36-72)	9	1667	88	3300
DMV15-4813	48(36-72)	12	1250	89	2200
DMV15-4814	48(36-72)	15	1000	89	1000
DMV15-4815	48(36-72)	24	625	89	820
DMV15-2421	48(36-72)	±5	±1500	85	4700
DMV15-2422	48(36-72)	±9	±833	87	3300
DMV15-2423	48(36-72)	±12	±625	88	2200
DMV15-2424	48(36-72)	±15	±500	89	1000
DMV15-2425	48(36-72)	±24	±313	89	680

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	
Output Short Circuit Protection	Sustainable and automatic restoration			

General Specifications

Parameter	Min.	Typ.	Max.	Note
Storage Humidity	5%	-	9%	
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		18g		
Cooling	Free air convection			
Case Material	Black metal shell			

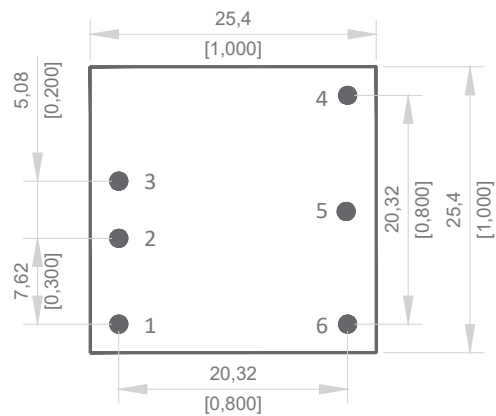
Product Datasheet

Safety&EMC Compliance

Isolation Voltage 1 minute, leakage current 1mA max	Ip to Op:1.5kV	
Isolation Resistance	1000MΩ	
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%

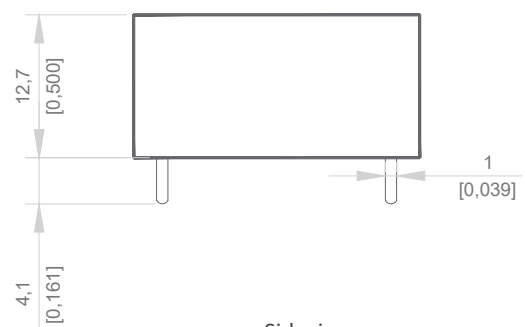
Product Datasheet

Dimensions & Interface Definition

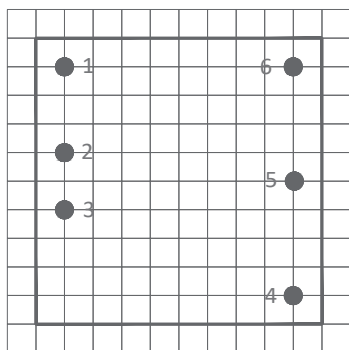


Bottomview

UNIT: mm
[Inch]



Sideview



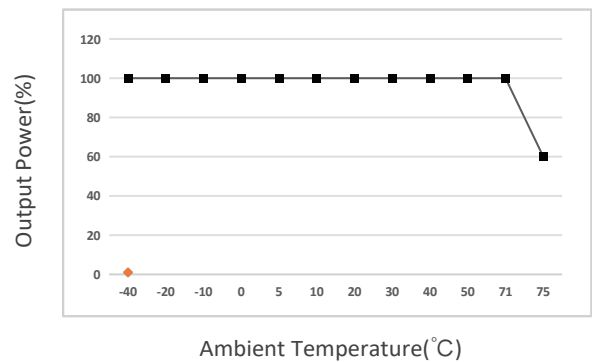
Recommended PCBA diagram

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

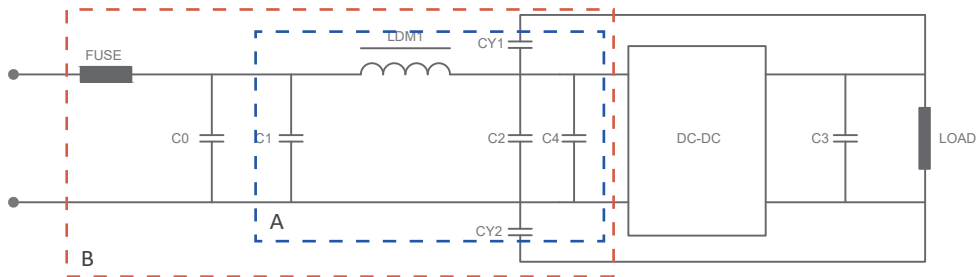
NP: No such pin
Tolerance: $\pm 0.5\text{mm}$ [0.020inch]

Performance Curve

Ambient Temperature Derating Curve



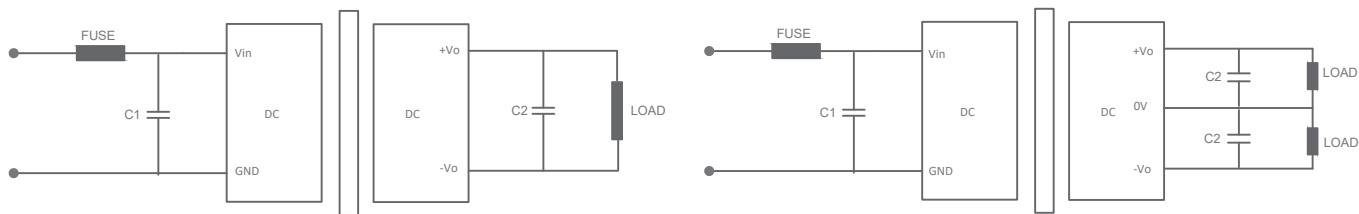
EMC Recommended Circuit



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

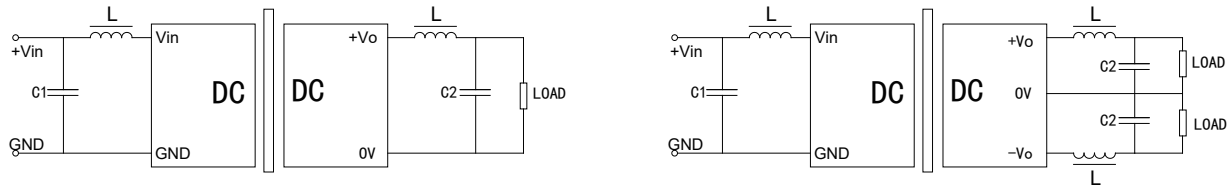
Inputvoltage	Fuse	C0,C4	C1,C2	C3	LDM1	CY1,CY2
12Vdc	Select based on the actual input current of the customer	330uF/50V	4.7uF/50V	Refer to the output parameters in the application circuit	2.2uH/4A	1nF/2kV
24Vdc		330uF/50V	4.7uF/50V		2.2uH/4A	1nF/2kV
48Vdc		330uF/100V	4.7uF/100V		2.2uH/2A	1nF/2kV

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: