DMV20W

4:1 Input, Isolated Regulated Output
15W 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

nternational standard pin mode

100% full load aging

Models

Model	Inputvoltage (Vdc)	Outputvoltage (Vdc)	Outputcurrent (mA)	Efficiency Typ.	Capacitive Load [Max](uF)
DMV20W-2421	24(9-36)	±5	±2000	85	4700
DMV20W-2422	24(9-36)	±9	±1111	87	2200
DMV20W-2423	24(9-36)	±12	±833	88	1000
DMV20W-2424	24(9-36)	±15	±667	88	680
DMV20W-2425	24(9-36)	±24	±417	89	330
DMV20W-2410	24(9-36)	3.3	5000	85	10000
DMV20W-2411	24(9-36)	5	4000	87	10000
DMV20W-2412	24(9-36)	9	2222	88	4700
DMV20W-2413	24(9-36)	12	1667	88	2200
DMV20W-2414	24(9-36)	15	1333	89	1000
DMV20W-2415	24(9-36)	24	833	89	680

Product Datasheet

Models

Model	Inputvoltage (Vdc)	Outputvoltage (Vdc)	Outputcurrent (mA)	Efficiency Typ.	Capacitive Load [Max](uF)
DMV20W-4821	48(18-72)	±5	±2000	85	4700
DMV20W-4822	48(18-72)	±9	±1111	87	2200
DMV20W-4823	48(18-72)	±12	±833	88	1000
DMV20W-4824	48(18-72)	±15	±667	89	680
DMV20W-4825	48(18-72)	±24	±417	89	330
DMV20W-4810	48(18-72)	3.3	5000	85	10000
DMV20W-4811	48(18-72)	5	4000	87	10000
DMV20W-4812	48(18-72)	9	2222	88	4700
DMV20W-4813	48(18-72)	12	1667	89	2200
DMV20W-4814	48(18-72)	15	1333	89	1000
DMV20W-4815	48(18-72)	24	833	89	680

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	-	10mA	20 mA	Input voltage 24Vdc
	-	5 mA	12 mA	Input voltage 48Vdc

Output Specifications

Parameter	Min.	Typ.	Max.	Note
Output Power	0W		20W	
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	-	75	100	mV P-P
Output Short Circuit Protection	Sustainable and automatic restoration			

Product Datasheet

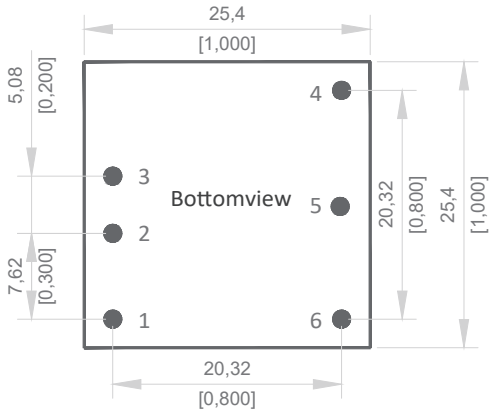
General Specifications

Parameter	Min.	Typ.	Max.	Note
Storage Humidity	5%	-	95%	
Operating Temps	-40℃	-	85℃	
Storage Temps	-55℃	-	125℃	
Operating Case Temps	-	20℃	35℃	
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	-	18g	-	
Cooling	Free air convection			
Case Material	Black metal shell			

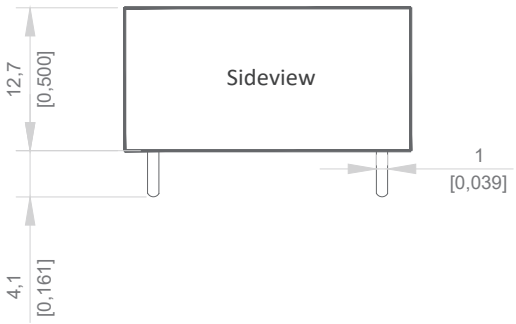
Safety&EMC Compliance

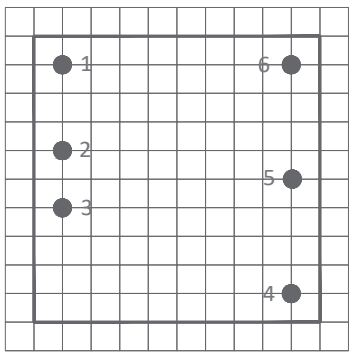
Isolation Voltage 1 minute, leakage current 1mA max	Ip to Op:1.5kV	
	IP/OP-FG:1KV	
Isolation Resistance 500VDC, 25°C, 70%RH	1000M Ω	
EMI	CE	CISPR32/EN55032 CLASS B（see EMI recommended circuit）
	RE	CISPR32/EN55032 CLASS B（see EMI recommended circuit）
EMS	ESD	IEC/EN61000-4-2 CONTACT ±4KV perf. Criteria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



UNIT: mm [Inth]





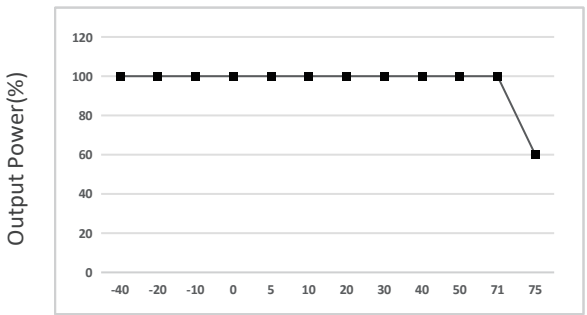
Recommended PCBA diagram

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:±0.5mm[0.020inth]

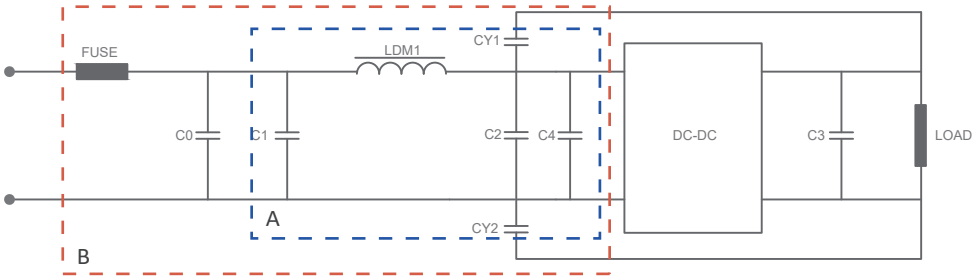
Performance Curve

Ambient Temperature Derating Curve



Ambient Temperature(˚C)

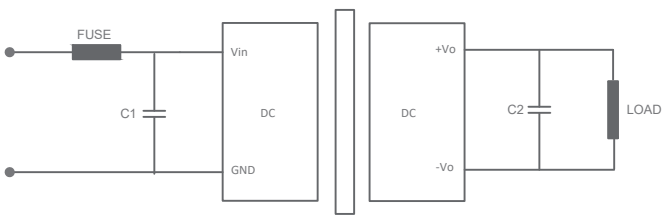
EMC Recommended Circuit

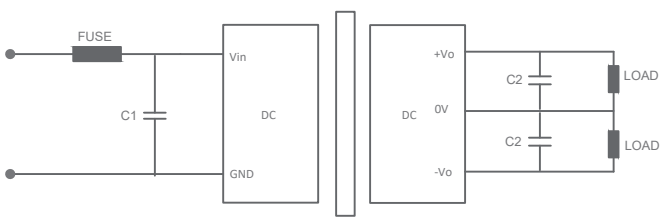


For the part selected by the frame line, Part A is used for EMI performance enhancement, and Part B is used for EMS testing.

Input Voltage	FUSE	C0,C4	C1,C2	C3	LDM1	CY1,CY2
24VDC	Select according to the actual input current	330uF/50V	4.7uF/50V	Refer to the output parameters in the application circuit	4.7uH	1nF/2kV
48VDC		330uF/100V	4.7uF/100V		4.7uH	1nF/2kV

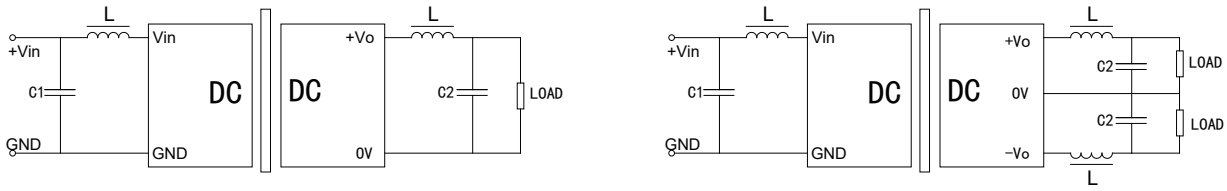
Recommended Application Circuit





Input Voltage	External Capacitance C1	Single Output Voltage	External Capacitance C2	Double Output Voltage	External Capacitance C2
24VDC	100uF/50V	3.3/5VDC	470uF/16V	±5VDC	220uF/16V
48VDC	47uF/100V	9VDC	220uF/16V	±9VDC	100uF/16V
		12VDC	220uF/25V	±12	100uF/25V
		15VDC	220uF/25V	±15VDC	100uF/25V
		24VDC	100uF/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: