DPV200-15B-xxV2(-W) Series

DESCRIPTIONS

200W, DC/DC Converter

RoHS

3 Years Warranty

CE Report EN62109-1

UKCA Report BS EN62109-1

FEATURES

- Ultra-wide 250 - 1500VDC input voltage range (Transient 1700VDC last for 10s)
- Industrial grade operating temperature -40℃ to +70℃
- High I/O isolation voltage up to 4000VAC
- High reliability, efficiency up to 93%
- Input under-voltage protection, input reverse polarity protection, output short circuit, over-current, over-voltage protection
- Operating altitude up to 5000m
- EFT immunity meets Level 4
- Design refer to UL1741, EN/IEC/BS EN62109

APPLICATIONS

- Photovoltaics
- Energy storage
- High voltage frequency conversion

Selection Guide

Certification	Part No.*	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Efficiency at 850VDC (%) Typ.	Capacitive Load (μF) Max.
EN/BS EN	DPV200-15B-12V2	150	12V/12.5A	88	5000
	DPV200-15B-24V2	200	24V/8.333A	91	5000
	DPV200-15B-28V2		28V/7.143A	91	3500
	DPV200-15B-48V2		48V/4.167A	93	1250

Note:1. *Use suffix "-W" for lead type version.

2.The product picture is for reference only. For details, please refer to the actual product.

Specifications

Specifications	Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Specifications	Input Voltage Range			250	--	1500	VDC
	Input Current	300VDC		--	--	0.95	A
		850VDC		--	--	0.45	
	Inrush Current	850VDC	Cold start	--	100	150	
		1500VDC		--	180	280	
	Input Under-voltage Protection	Under-voltage protection start (Input voltage drops from high to low)		110	--	240	VDC
		Under-voltage protection release (Input voltage rises from low to high)		120	--	250	
	Input Reverse Polarity Protection			Available			
	Start-up Delay Time*			--	1	2	s
	External Input Fuse			6A/1500VDC(CCN:JFGA/JFGA7), required			
	Hot Plug			Unavailable			
Output Specifications	Output Voltage Accuracy	All load range		--	±1	±2	%
	Line Regulation	Rated load		--	±0.1	±0.25	
	Load Regulation	850VDC		--	±0.5	±1	
	Stand-by Power Consumption	850VDC		--	1	2	W
	Ripple & Noise**	20MHz bandwidth (peak-to-peak value)		--	150	300	mV
	Temperature Coefficient			--	±0.02	--	%/℃
	Short Circuit Protection			Hiccup, continuous, self-recovery			
	Over-current Protection			≥110 %Io, hiccup, self-recovery			
	Over-voltage Protection	12V		≤20V	Output voltage clamp or hiccup		
		24V		≤32V			
		28V		≤35V			
		48V		≤58V			
	Minimum Load			0	--	--	%
	Hold-up Time	Room temperature, full load	850VDC input	--	20	--	ms
General Specifications	Isolation	Input - output	Electric strength test for 1min., leakage current <10mA	4000	--	--	VAC
		Input - PE		4000	--	--	
		Output - PE	Electric strength test for 1min., leakage current <5mA	2000	--	--	
	Insulation Resistance	Input - output	Ambient temperature: 25 ± 5℃ Relative humidity: < 95%RH, no condensation Test voltage: 500VDC	100	--	--	MΩ
		Input - PE					
		Output - PE					
	Operating Temperature			-40	--	+70	℃
	Storage Temperature			-40	--	+85	
	Storage Humidity	Non-condensing		--	--	95	%RH
	Power Derating	Operating temperature derating	-40℃ to -25℃	2.67	--	--	%/℃
			+55℃ to +70℃	2.67	--	--	
	Power Derating	Input voltage	250 - 300VDC	0.8	--	--	%/VDC

		derating					
		Altitude derating	2000m - 5000m	6.67	--	--	%/Km
	Switching Frequency			--	65	--	kHz
	MTBF	MIL-HDBK-217F@25℃		≥300,000 h			
Mechanical Specifications	Case Material	Metal					
	Dimensions	201.00 x 70.00 x 42.00mm					
	Weight	620g (Typ.)					
	Cooling Method	Free air convection					

Note: *Start-up delay time test conditions: full voltage input range, full output load range (the cooling-time between input power-off and power-on again is greater than 10s.);

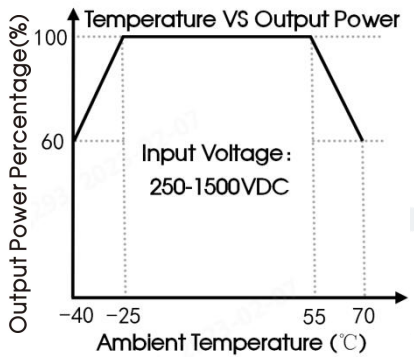
**The "Tip and barrel method" is used for ripple and noise test, please refer to PV Converter Application Notes for specific information.

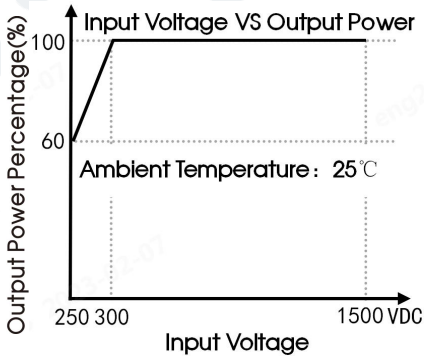
Electromagnetic Compatibility (EMC)

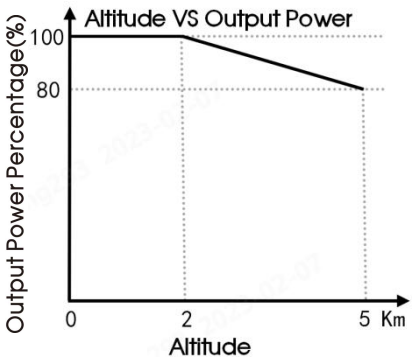
Electromagnetic Compatibility (EMC)	Emissions	CE	CISPR32/EN55032 CLASS A	
		RE	CISPR32/EN55032 CLASS A	
	Immunity	ESD	IEC/EN61000-4-2 Contact ±6KV/Air ±8KV	Perf. Criteria B
		RS	IEC/EN61000-4-3 10V/m	Perf. Criteria A
		EFT	IEC/EN61000-4-4 ±4KV	Perf. Criteria B
		Surge	IEC/EN61000-4-5 Line to line ±1KV/ line to PE ±2KV	Perf. Criteria B
		CS	IEC/EN61000-4-6 10Vr.m.s	Perf. Criteria A

Note: For harsh EMC application environment.

Product Characteristic Curve

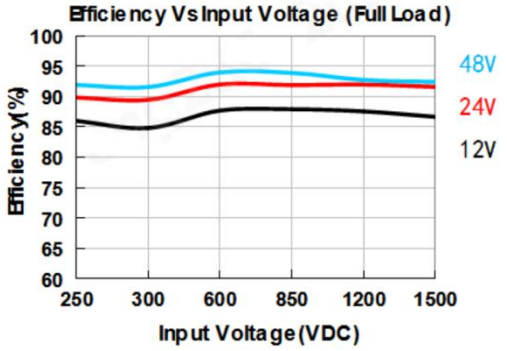


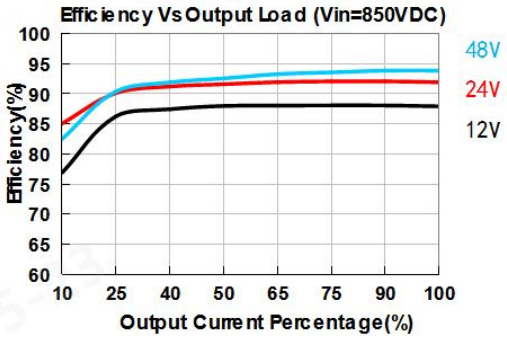




Note: 1.With an DC input between 250-300VDC, the output power must be derated as per temperature derating curves;

2.This product is suitable for applications using natural air cooling.





Design Reference

1. Typical application circuit

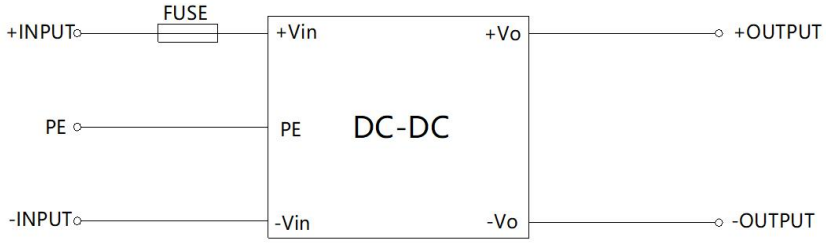


Fig. 1

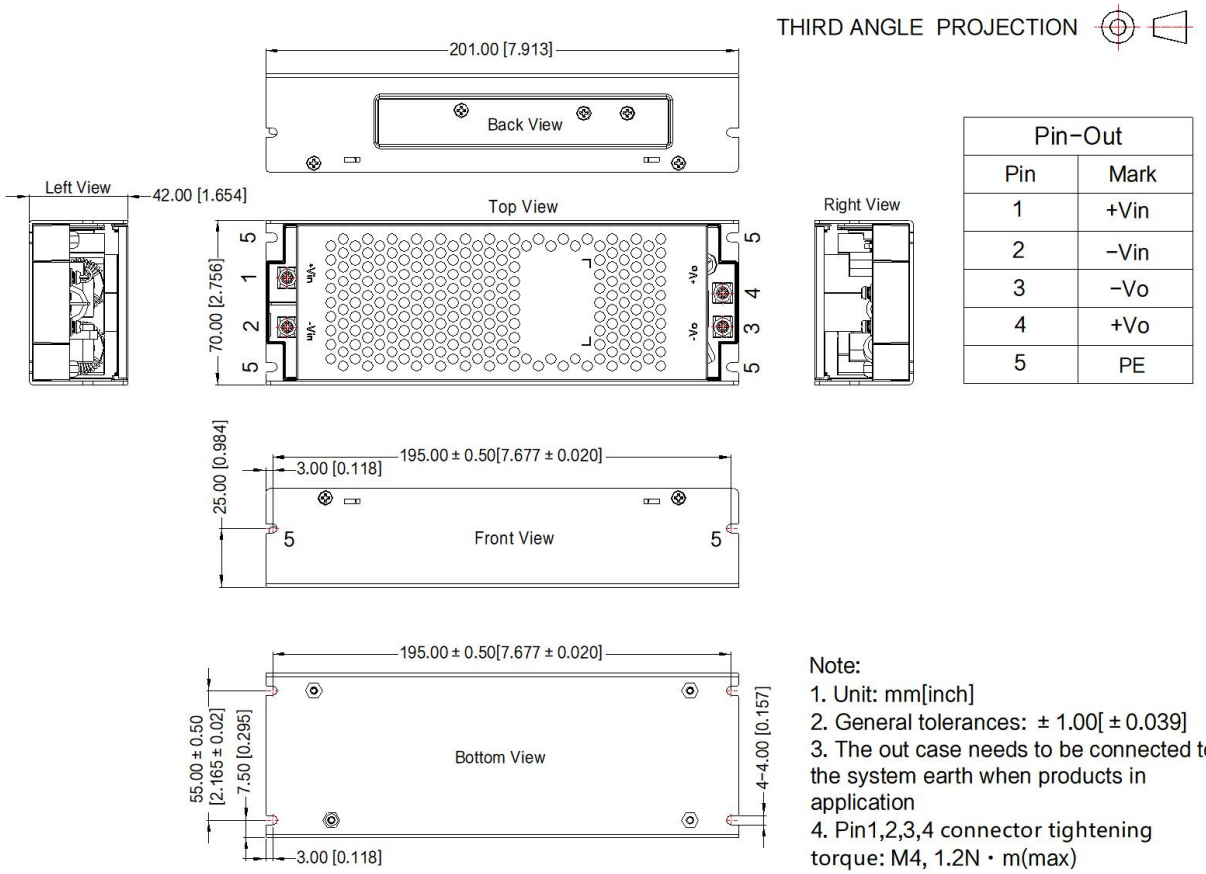
Model	Recommended value
FUSE	6A/1500VDC(CCN:JFGA/JFGA7), required

2. IMPORTANT SAFETY INSTRUCTIONS

Additional protective devices, such as lightning protector need to be added if there is an transient pulse voltage greater than 6KV at the input of products in system applications.

Dimensions and Recommended Layout

DPV200-15B-xxV2 Series

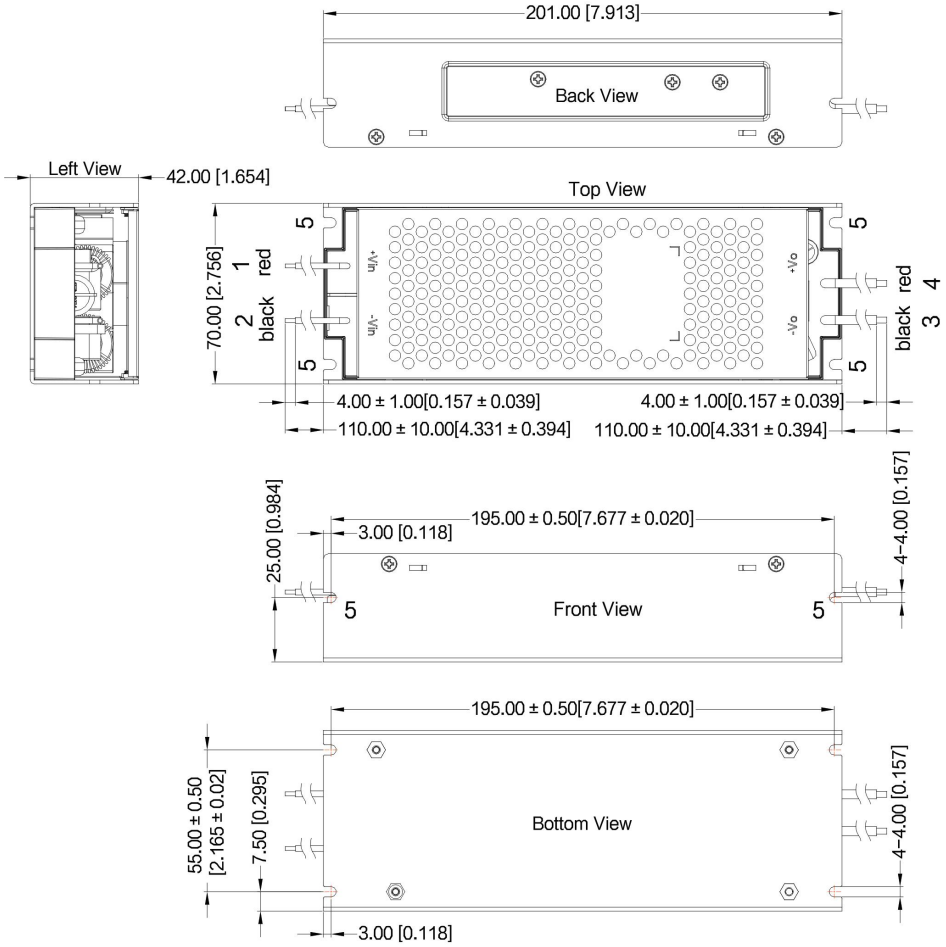


Pin-Out	
Pin	Mark
1	+Vin
2	-Vin
3	-Vo
4	+Vo
5	PE

Note:
1. Unit: mm[inch]
2. General tolerances: ± 1.00[± 0.039]
3. The out case needs to be connected to the system earth when products in application
4. Pin1,2,3,4 connector tightening torque: M4, 1.2N · m(max)

DPV200-15B-xxV2-W Series

THIRD ANGLE PROJECTION



Pin-Out	
Pin	Mark
1	+Vin
2	-Vin
3	-Vo
4	+Vo
5	PE

Note:
1. Unit: mm[inch]
2. General tolerances: ± 1.00[± 0.039]
3. The out case needs to be connected to the system earth when products in application
4. 1~2 wire spec.: UL3239 18AWG
   3~4 wire spec.: UL1015 14AWG

⚠WARNING:

1. CAUTION: "To reduce the risk of fire, connect only to a circuit provided with 6 amperes maximum branch-circuit over-current protection in accordance with the National Electrical Code, ANSI/NFPA70."
2. WARNING: REPLACE ONLY WITH THE SAME RATINGS AND TYPE OF FUSE.
3. DANGER – HIGH VOLTAGE.

AVERTISSEMENT:

1. Avertissement: Pour réduire le risque d'incendie, veuillez connecter uniquement à des circuits de dérivation avec protection contre les surintensités conformes au code électrique national ANSI/ NFPA 70.
2. AVERTISSEMENT : N'UTILISER QUE DES FUSIBLES DE MÊMECALIBRE ET DE MÊME TYPE QUE LE FUSIBLE DORIGINE.
3. DANGER : HAUTE TENSION.

Note:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75% with nominal input voltage and rated output load;
2. All index testing methods in this datasheet are based on our company corporate standards;
3. In order to improve the efficiency, there will be audible noise generated when working at input voltage higher than 1000VDC, but it does not affect product performance and reliability;
4. We can provide product customization service, please contact our technicians directly for specific information;
5. Products are related to laws and regulations: see "Features" and "EMC";
6. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;