DC/DC Converter
PV40-29B30A8

MORNSUN®

New energy 200 - 1500VDC over wide and over high input voltage isolation converter

FEATURES

- Ultra wide input voltage range: 200 - 1500VDC
- Industrial grade operating temperature: -40℃ to +70℃
- 4000VAC high isolation voltage
- High efficiency, Low ripple & noise
- Input under-voltage protection, reverse input voltage protection, Output short circuit, over-current, over-voltage protection

PV40-29B30A8 -----is 200-1500VDC ultra wide input voltage regulated DC-DC converter, which has advantages such as high efficiency, high reliability and high safety isolation. The series products are widely used in industries such as photovoltaic power generation and high voltage frequency conversion, provide a stable operating voltage for the load device, Its multiple protection features can enhance the safety performance of the module power supply and the load under abnormal working conditions. For harsh EMC environment, this series of product must use the refered application circuit.

Selection Guide

Certification	Part No.	Output Power	Nominal Output Voltage and Current(Vo/Io)	Efficiency (800VDC, %/Typ.)	Max. Capacitive Load(μF) (Normal temperature full load)
--	PV40-29B30A8	40W	30V/1334mA	80	680

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range		200	--	1500	VDC
Input current	200VDC	--	--	320	mA
	800VDC	--	--	80	
	1500VDC	--	--	42	
Inrush current	200VDC	--	30	--	A
	800VDC	--	80	--	
	1500VDC	--	150	--	
Under-voltage protection		Under voltage protection range: 170 - 185V Under voltage release range: 180 - 195V			
External input fuse (A8 Special package series include fuse)		15A/1500VDC, necessary			
Hot Plug		Unavailable			

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy		--	±2	--	%
Line Regulation	Full load	--	±1	--	
Load Regulation	0% - 100% load	--	±1	--	
Ripple & Noise*	20MHz bandwidth (peak-peak value)	--	150	300	mV
Temperature Drift Coefficient		--	±0.02	--	%/℃
Short Circuit Protection		Continuous, self-recovery			
Over-current Protection		120% - 320%Io, self-recovery			
Over-voltage Protection		≤38VDC			
Min. Load		0	--	--	%
Delay Time**	200 - 1500VDC	--	--	2	s

Note: * Ripple and noise are measured by "parallel cable" method, please see AC-DC Converter Application Notes for specific operation.
**Delay Time test condition: Full input voltage range, full output load range (The cooling time between Input power-off and the next input Power-on is bigger than 15s).

General Specifications

Item		Operating Conditions	Min.	Typ.	Max.	Unit
Isolation Voltage	Input-output	Test time: 1min	4000	--	--	VAC
Operating Temperature			-40	--	+70	℃
Storage Temperature			-40	--	+85	
Storage Humidity			--	--	95	%RH
Welding Temperature		Wave-soldering	260 ± 5℃; time: 5 - 10s			
		Manual-welding	360 ± 10℃; time: 3 - 5s			
Switching Frequency			--	65	--	kHz
Altitude			--	--	5000	m
MTBF			MIL-HDBK-217F@25℃ ⩾ 300,000 h			

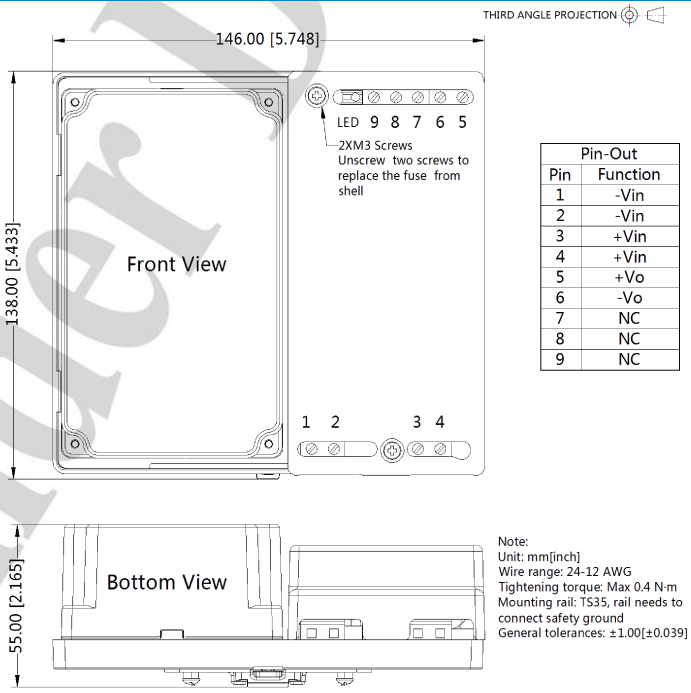
Physical Specifications

Casing Material	Black flame-retardant and heat-resistant plastic (UL94 V-0)
Dimensions	146.00*138.00*55.00 mm
Weight	610g/720g(Typ.)
Cooling method	Free air convection
Note: Avoid washing the shell with the PCB water directly, We recommend to use alcohol to clean or wipe it.	

EMC Specifications

EMI	CE	CISPR22/EN55022 CLASS A	
	RE	CISPR22/EN55022 CLASS A	
EMS	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 ±2KV	perf. Criteria B
	Surge	IEC/EN61000-4-5 line to line±1KV	perf. Criteria B
	CS	IEC/EN61000-4-6 10 Vr.m.s	perf. Criteria A
	PFM	IEC/EN61000-4-8 10A/m	perf. Criteria A

Dimensions and Recommended Layout



Pin-Out	
Pin	Function
1	-Vin
2	-Vin
3	+Vin
4	+Vin
5	+Vo
6	-Vo
7	NC
8	NC
9	NC

Note:
Unit: mm[inch]
Wire range: 24-12 AWG
Tightening torque: Max 0.4 N·m
Mounting rail: TS35, rail needs to connect safety ground
General tolerances: ±1.00[±0.039]

Note:

1. Packing information please refer to Product Packing Information which can be downloaded from www.mornsun-power.com. Packing bag number: 58220034 ;
2. Unless otherwise specified, data in this datasheet should be tested under the conditions of Ta=25° C, humidity<75% when inputting nominal voltage and outputting rated load;
3. All index testing methods in this datasheet are based on our Company's corporate standards;
4. In order to improve the conversion efficiency, when the module is working under high pressure, the module may have certain audio noise, but does not affect the reliability of the product;
5. It is recommended that the product be locked screw before welding;
6. If you need to replace the fuse of A8 package products, please be careful, don't allow the bottom of PCB board to bear excessive mechanical stress;
7. The performance indexes of the product models listed in this manual are as above, but some indexes of non-standard model products will exceed the above-mentioned requirements, and please directly contact our technician for specific information;
8. We can provide product customization service;
9. Specifications of this product are subject to changes without prior notice.

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