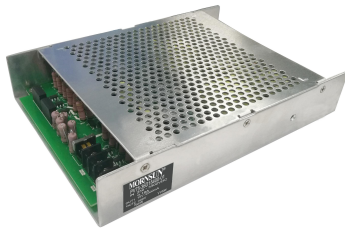


32W isolated DC-DC converter with ultra-wide, ultra-high 250-3300V DC input for Renewable Energy



RoHS

FEATURES

- Ultra-wide 250 - 3300VDC input voltage range
- Operating ambient temperature range: -40°C to +85°C
- High I/O isolation test voltage of 6000VAC (Input-output)
- High I/O isolation test voltage of 4000VAC (Vo1-Vo2)
- High efficiency, high reliability, long service life
- Input undervoltage protection, reverse input voltage protection
- Vo1: output short circuit, over-current, over-voltage protection
- Immunity, EFT/Surge: ±4KV perf. Criteria B
- Operating up to 5000m altitude

PV75-36D15400-01 is a regulated DC-DC converter with an ultra-wide and ultra-high DC input of 250-3300VDC. This type of power supply is widely used in renewable energy industries such as photovoltaic, power generation, energy storage, inverters and high-voltage DC conversions. The converters provide multiple protection features and guarantee stable and safe operating environments even under abnormal working conditions.

Selection Guide

Part No.	Output Power		Nominal Output Voltage and Current			Efficiency (%) Typ.	Capacitive Load (µF) Max.	
	Steady state	transient*	Vo1/Io1 (Constant voltage mode)	Vo2/Io2**			1500VDC	Vo1
				transient* (Constant current mode)	Steady state (Constant voltage mode)			
PV75-36D15400-01	32W	75W	15V/2000mA	20-400V/112.5mA	400V/5mA	70	2000	560

Note: * The working time of constant current mode is ≤2s (Typ.), the interval is 1.5s (Typ.).

**At room temperature, 560µF capacitor can be charged to 400V in 2 seconds; The output current of the Vo2 constant current mode is 112.5mA (Typ.), the output voltage of constant voltage mode is 400V (Typ.).

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range		250	--	3300	VDC
Input Current	250VDC	--	--	180	mA
	1500VDC	--	--	35	
	3300VDC	--	--	15	
Inrush Current	3300VDC	--	--	150	A
Undervoltage Protection		Lockout activation range: 100 - 190VDC Lockout deactivation range: 190 - 240VDC			
External input fuse		6.3A/3600VDC, required			
Hot Plug		Unavailable			

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy	All load range	Vo1	±2	--	
		Vo2	±2	--	
Line Regulation	Full load	Vo1	±1	--	%
		Vo2	±1	--	
Load Regulation	10% - 100% load	Vo1	±2	--	
		Vo2	±2	--	
Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	Vo1	--	0.3	V
		Vo2 (Add 560µF capacitance load)	--	1	
Temperature Drift Coefficient		--	±0.02	--	%/°C

Short Circuit Protection	Vo1		Hiccup, continuous, self-recovery			
Over-current Protection	Vo1		≥120%Io, hiccup, self-recovery			
Over-voltage Protection	Vo1		≤25VDC (Output voltage clamp)			
Minimum Load	Vo1	Balanced load	0	--	--	%
	Vo2		0	--	--	
Hold-up Time	Room temperature, full load	250VDC input	5	--	--	ms
		3300VDC input	5	--	--	
Start-up Delay Time **	250 VDC	Vo2 doesn't increase in capacitive load, room temperature	--	--	5	s
	1500 VDC		--	--	2	

Note: * The "Tip and barrel method" is used for ripple and noise test, please refer to PV Converter Application Notes for specific information.
** Start-up delay time test : the cooling-time between input power-off and power-on again is greater than 15s.

General Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Isolation Test	Input-output	Electric Strength Test for 1min., leakage current ≤10mA	6000	--	--	VAC
	Input-Shell		6000	--	--	
	Vo1-Vo2		4000	--	--	
	Output-Shell		6000	--	--	
Insulation Resistance	Input-output	500VDC	≥50x10 ⁶			Ω
	Input-Shell					
	Output-Shell					
Operating Temperature		-40	--	+85	°C	
Storage Temperature		-40	--	+85		
Storage Humidity			--	--	95	%RH
Power Derating	-40°C to +25°C	250VDC - 300VDC	1.35	--	--	% / °C
	+60°C to +70°C		4.0	--	--	
	+70°C to +85°C		2.0	--	--	
	250VDC - 300VDC		0.4	--	--	% / VDC
	3000VDC - 3300VDC		0.067	--	--	
	2000m - 5000m		6.67	--	--	
Switching Frequency			--	400	--	kHz
Altitude*			--	--	5000	m
MTBF			MIL-HDBK-217F@25°C ≥ 100,000 h			

Note: * If the product is used above 2000m above sea level, please consult factory or one of our FAE.

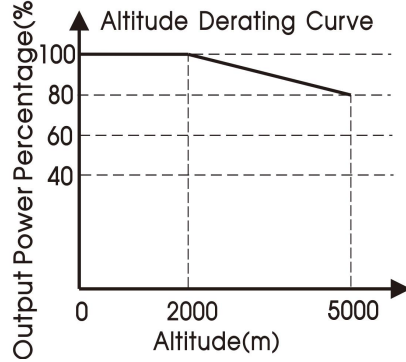
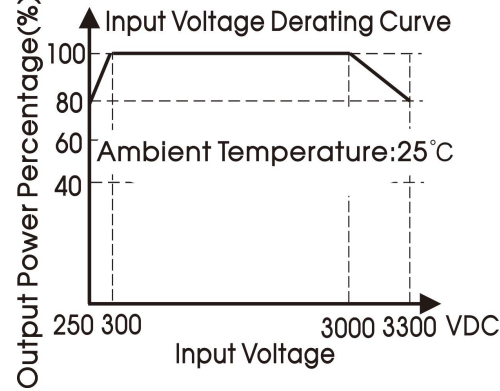
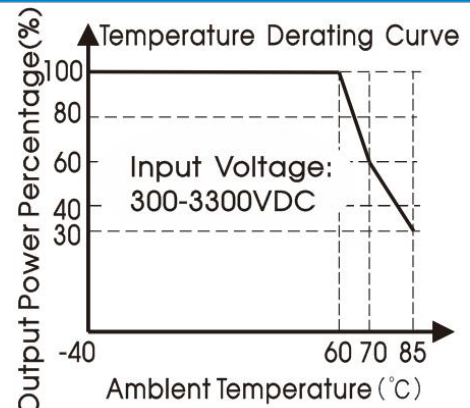
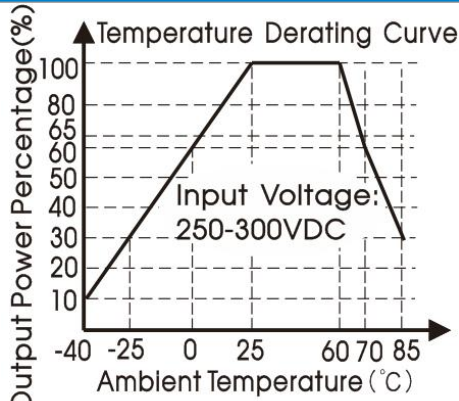
Mechanical Specifications

Case Material	metal
Dimensions	220.00 x 157.00 x 40.00mm
Weight	900g (Typ.)
Cooling method	Free air convection

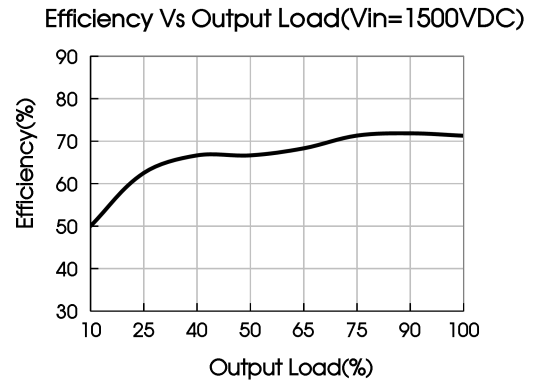
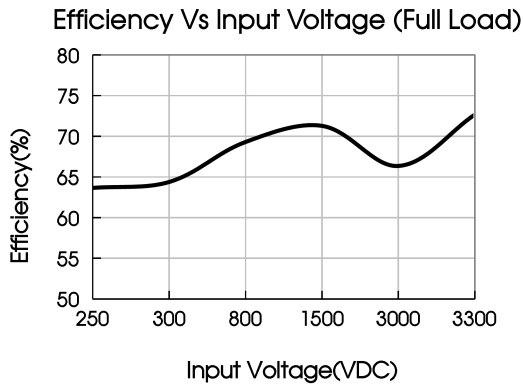
Electromagnetic Compatibility (EMC)

Immunity	ESD	IEC/EN61000-4-2	Contact ±6KV/Air ±8KV	Perf. Criteria B
	RS	IEC/EN61000-4-3	30V/m	perf. Criteria B
	EFT	IEC/EN61000-4-4	±4KV	perf. Criteria B
	Surge	IEC/EN61000-4-5	line to line ±2KV/ line to ground ±4KV	perf. Criteria B
	CS	IEC/EN61000-4-6	10Vr.m.s	perf. Criteria B

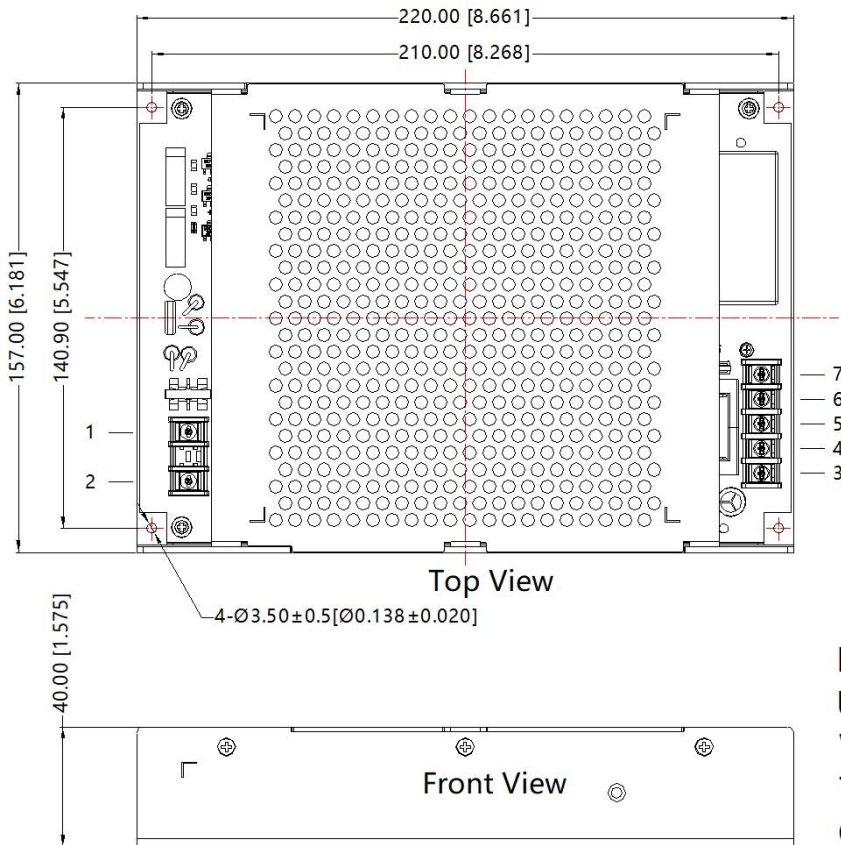
Product Characteristic Curve



Note: ① With an input between 250 - 300VDC or 3000VDC - 3300VDC, the output power of PV75-36D15400-01 parts must be derated as per temperature derating curves;
② This product is suitable for applications using natural air cooling; for applications in closed environment please consult factory or one of our FAE.



Dimensions and Recommended Layout



THIRD ANGLE PROJECTION

Pin-Out	
Pin	Function
1	+Vin
2	-Vin
3	Vo2-
4	Vo2+
5	NC
6	Vo1-
7	Vo1+

Note:
Unit: mm[inch]
Wire range: 22-12 AWG
Tightening torque : Max 0.5 N·m
General tolerances: ±1.00[±0.039]

- Note:
- For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220070;
 - Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25°C, humidity<75% with nominal input voltage and rated output load;
 - All index testing methods in this datasheet are based on our company corporate standards;
 - We can provide product customization service, please contact our technicians directly for specific information;
 - Products are related to laws and regulations: see "Features" and "EMC";
 - Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

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