

## Features

- Ultra-wide 200(300)~1500V DC (Transient 1700VDC last for 10s)
- Transient power 650W last for 3s
- High I/O isolation test voltage of 4000V AC
- Industrial grade operating temperature -40°C ~ +85°C
- High efficiency, low ripple & noise
- High reliability, long lifespan
- Input RPP, UVP, Output SCP, OCP, OVP
- Operating up to 5000m altitude
- Support 3+1 parallel redundancy, current sharing



Ideal Power's 36PV350-29Bxx 350W DC/DC Enclosed Power Supply Series are certified to RoHS & EN 62109-1/IEC 62109-1/BS EN 62109-1 Standards and comply with the relevant Efficiency Regulations. These are primarily used in Photovoltaic Industries, and customised solutions are available upon request.

### Models

Part No.*	Output Power**	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range ADJ (V)	Efficiency at 1100VDC (%) Typ.	Capacitive Load (µF) Max.
36PV350-29B12	250.8W	12V/20.9A	/	90	10000
36PV350-29B24	350.4W	24V/14.6A	21.6-26.4	92	2200
36PV350-29B28		28V/12.5A	25.2-30.8		1500
36PV350-29B32		32V/10.95A	28.8-35.2		1500
36PV350-29B48		48V/7.3A	43.2-52.8		1500

Note: \*36PV350-29B24/28/32/48 use suffix "W" for wire output version.

\*\*If you need parallel connection to increase the power, please consult a member of our sales staff.

### Input Specifications

Parameter	Conditions	Min	Typ	Max	Unit	
Input Voltage Range	Transient (10s)	--	--	1700	VDC	
	12V	200	--	1500		
	24V/28V/32V/48V	300	--	1500		
Input Current	300VDC	--	--	2	A	
	1100VDC	--	--	0.75		
	1500VDC	--	--	0.6		
Inrush Current	1500VDC	--	300	--		
Input Under-voltage Protection	Lockout activation range	12V	140	--	195	VDC
	Lockout deactivation range		165	--	205	
	Lockout activation range	24V/28V/32V/48V	240	--	295	
	Lockout deactivation range		265	--	305	
Input Reverse Polarity Protection				Available		
External Input Fuse				6A/1500VDC, required		
Hot Plug				Unavailable		

**Output Specifications**

Parameter	Conditions	Min	Typ	Max	Unit	
Output Voltage Accuracy	All load range, constant voltage mode	--	±2	--		
Line Regulation	Rated load	--	±1	--	%	
Load Regulation	0% - 100% load	--	±2	--		
Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	12V	--	200	mV	
		24V/28V/32V/48V	--	300		
Temperature Coefficient		--	±0.02	--	%/°C	
Instantaneous overload	Full voltage range, for 1s	150%Io	200%Io	--	--	
Short Circuit Protection	Recovery time < 15s after the short circuit disappears	Hiccup, constant current lasts for 1s before turn off, continuous, self-recovery				
Over-voltage Protection	12V output	≤16VDC		Output voltage clamp or hiccup		
	24V output	≤35VDC				
	28V output	≤40VDC				
	32V output	≤45VDC				
	48V output	≤58VDC				
Over-current Protection		Output voltage turn off, self-recovery				
Minimum Load		0	--	--	%	
Hold-up Time	Room temperature, full load	1100VDC input	--	8	--	ms
Start-up Delay Time***	Room temperature		--	3	5	s

**Note:** \*The "Tip and barrel method" is used for ripple and noise tests. Please refer to PV Converter Application Notes for specific information.

\*\*When the output current is less than the trigger point of the over-current protection, the normal output can be maintained. When the output current is greater than the trigger point of the over-current protection, the output voltage will drop with the increase of the current, which belongs to the normal working mode; the over-current can be restored within 1s is the normal working state; otherwise, it enters the hiccup state of overcurrent protection, which belongs to the normal protection mode. It is suitable for short-term high-current applications such as closing coils and capacitors.

\*\*\*Output voltage turn off, self-recovery after fault conditions are removed.

\*\*\*\*Full input voltage/output load range (The cooling time between input power-off and power-on again is greater than 15s).

**General Specifications**

Parameter	Conditions	Min	Typ	Max	Unit	
Isolation	Input - output	4000	--	--	VAC	
	Input - PE	4000	--	--		
	Output - PE	4000	--	--		
Insulation Type		Primary and secondary meet reinforced insulation				
Insulation Resistance	Input - output 500VDC	50	--	--	MΩ	
Operating Temperature		-40	--	+85	°C	
Storage Temperature		-40	--	+85		
Storage Humidity		--	--	95	%RH	
Power Derating	-40°C to 0°C	200-300VDC	0.50	--	--	% / °C
	+50°C to +70°C		2.50	--	--	
	+55°C to +70°C	300-1400VDC	3.33	--	--	
	+50°C to +70°C	1400-1500VDC	2.50	--	--	
	+70°C to +85°C	200-1500VDC	3.00	--	--	

### General Specifications (continued)

Power Derating	-40°C to 0°C	300-400VDC	0.50	--	--	%°C	
	+50°C to +70°C		2.50	--	--		
	+55°C to +70°C	400-1400VDC	24V/28V/ 32V/48V	3.33	--		--
	+50°C to +70°C	1400-1500VDC		2.50	--		--
	+70°C to +85°C	300-1500VDC		3.00	--	--	
	200-300VDC	12V		0.20	--	--	
	300-400VDC	24V/28V/32V/48V		0.20	--	--	
	1400-1500VDC			0.20	--	--	
	3000- 5000m		10.00	--	--	%/Km	
Switching Frequency			--	65	--	kHz	
Safety Standard	12V		EN62109-1, BS EN62109-1 (Report); Design refers to CSA-C22.2 No.107.1-16, UL1741, IEC62109-1				
	24V/28V/32V		UL1741, IEC62109-1 safety approved & EN62109-1, BS EN62109-1 (Report); Design refers to CSA-C22.2 No.107.1-16				
	48V		Design refers to CSA-C22.2 No.107.1-16, UL1741, EN/IEC/BS EN62109-1				
MTBF			MIL-HDBK-217F@25°C≥ 300,000 h				

### Mechanical Specifications

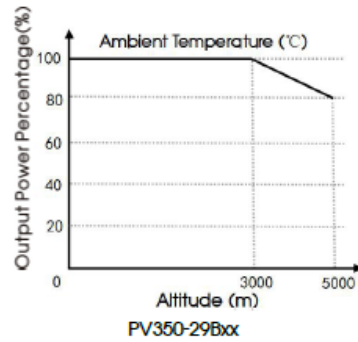
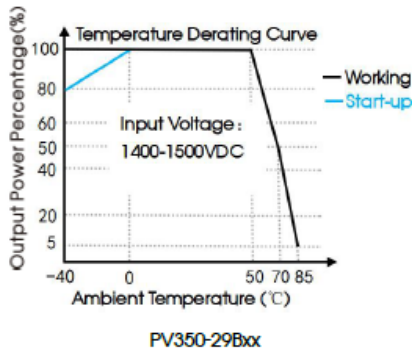
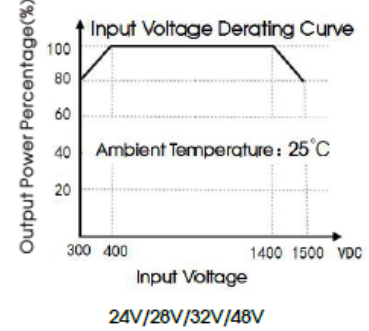
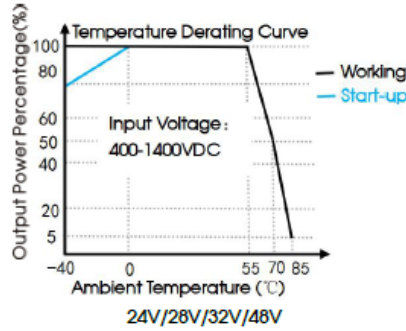
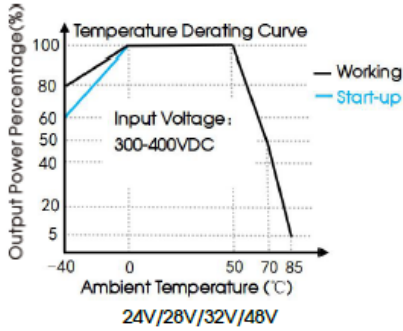
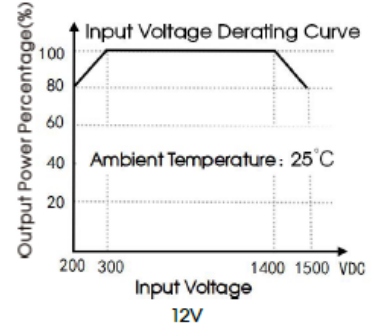
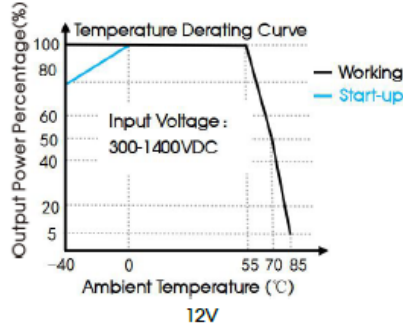
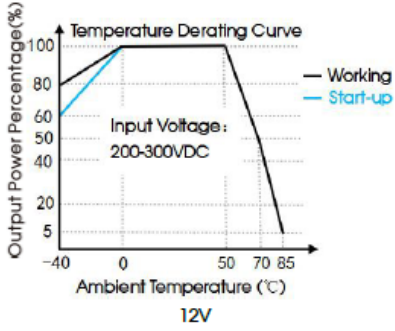
Case Material	Metal
Dimensions	215.00 x 125.00 x 50.00mm
Weight	1500g (Typ.)
Cooling method	Free air convection

### Electromagnetic Compatibility (EMC)

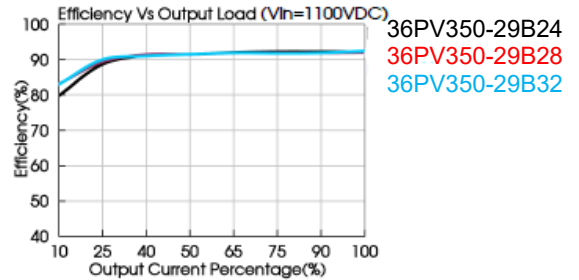
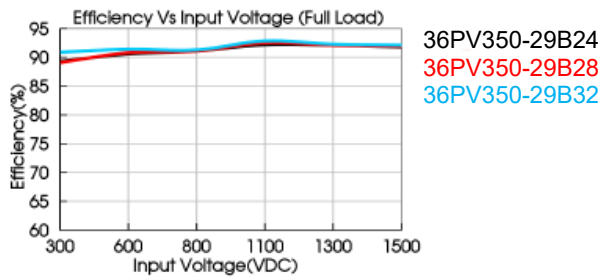
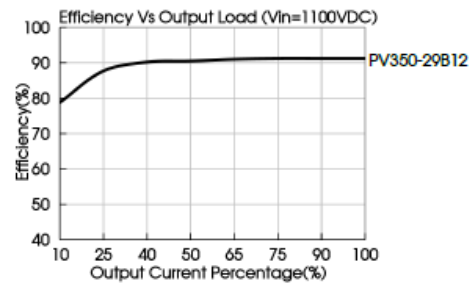
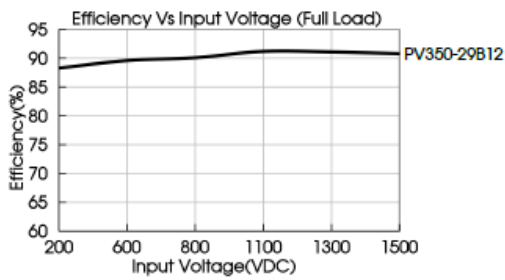
Parameter	Conditions			Level
Emissions	CE	CISPR32/EN55032	CLASS A	
	RE	CISPR32/EN55032	CLASS A	
Immunity	ESD	IEC/EN61000-4-2	Contact ±6KV/Air ±8KV	Perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m	Perf. Criteria A
	EFT	IEC/EN61000-4-4	±4KV	Perf. Criteria A
	Surge	IEC/EN61000-4-5	Line to line ±1KV/line to PE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

Note: \*During conduction and radiation testing, in order to avoid new interference brought by the input line, it is necessary to cover the input line with a nickel-zinc ferrite or nanocrystalline magnetic ring.

**Characteristic Curve**



Note: ① With an Input between 200-300VDC(12V)/300-400VDC(24V/28V/32V/48V)/1400-1500VDC, the output power of PV350-29Bxx parts must be derated as per temperature derating curves:



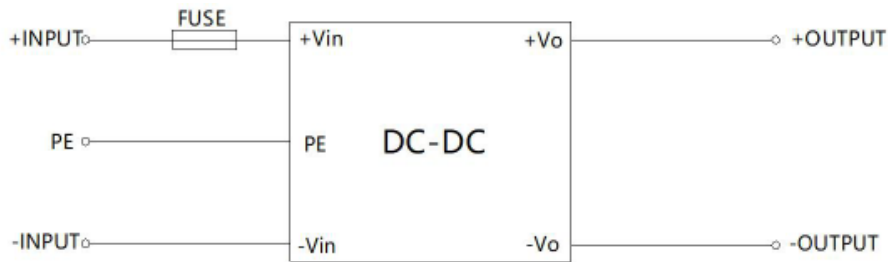
**Design Reference**
**1. Typical application circuit**


Fig. 1

Model	Recommended value
FUSE	6A/1500VDC, required

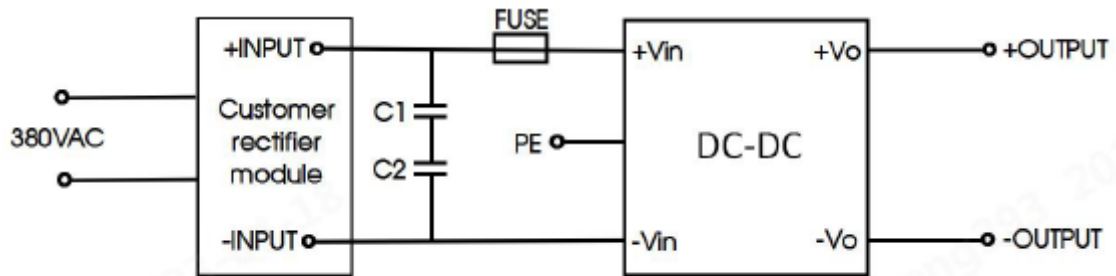
**1. EMC compliance recommended circuit**


Fig. 2

Model	Recommended value
C1/C2	150 $\mu$ F/400V
FUSE	6A/1500VDC, required

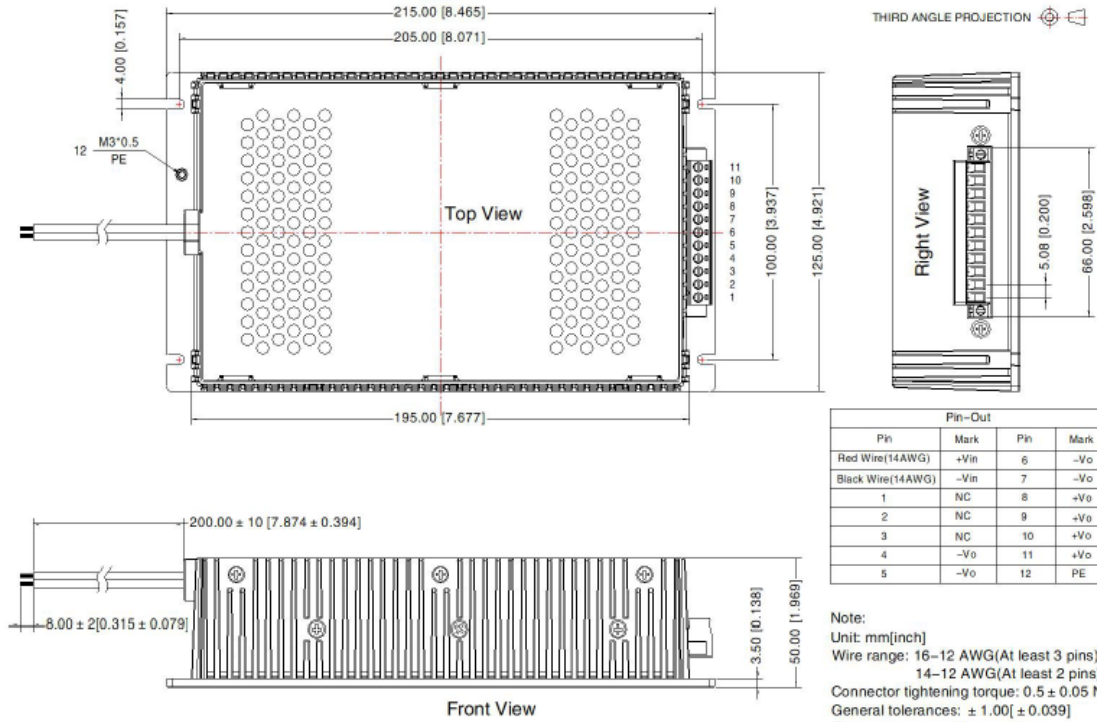
**Note:** 1. The rectified DC signal of 380VAC three-phase power needs to be filtered by C1 and C2 capacitors.  
 2. Please consult FAE if it needs to be applied in other environments.

**IMPORTANT SAFETY INSTRUCTIONS**

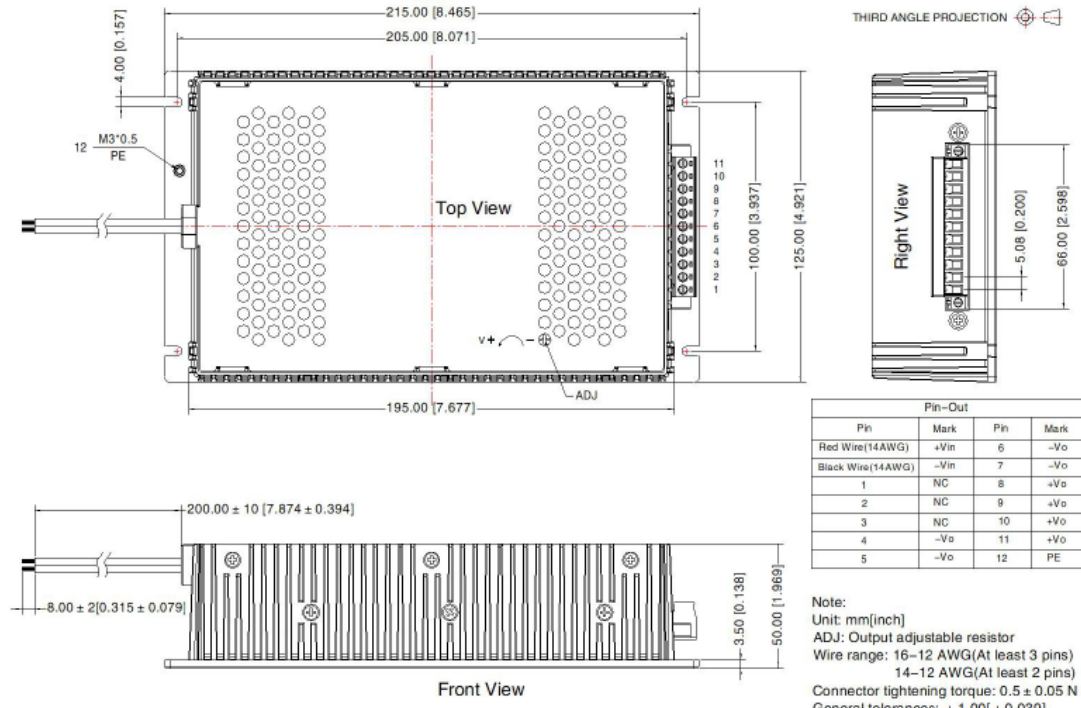
Additional protective devices, such as lightning protectors, must be added if there is a transient pulse voltage greater than 6KV at the input of PV products in system applications.

## Dimensions and Recommended Layout

### 36PV350-29B12



### 36PV350-29B24/28/32/48

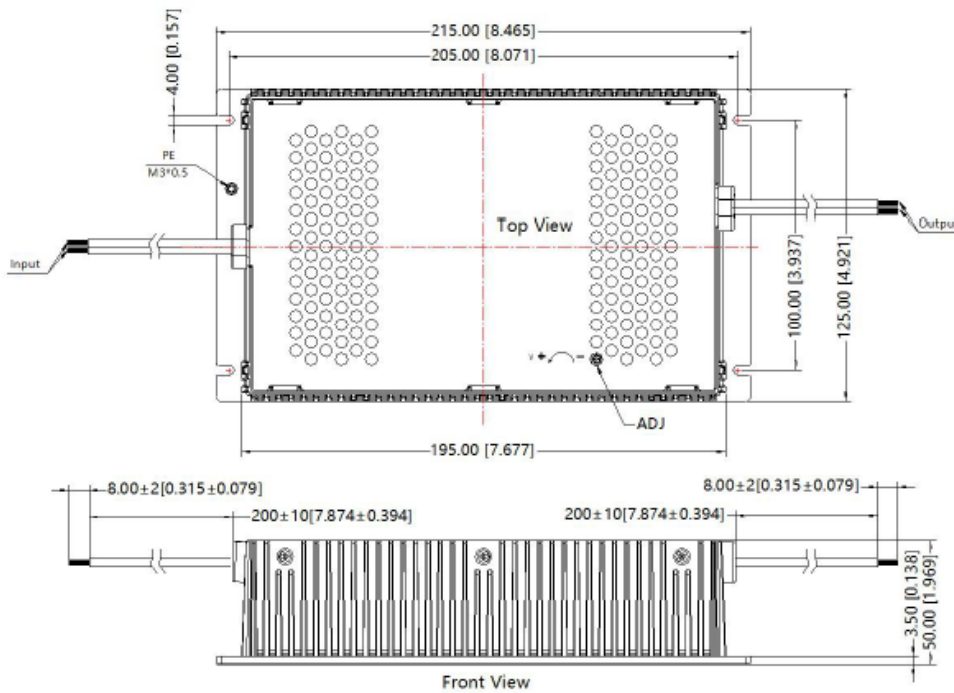


DC-DC

**Dimensions and Recommended Layout**

36PV350-29B24/28/32/48W

THIRD ANGLE PROJECTION



Pin-Out		
	Pin	Function
Input	Red Wire(14AWG)	+Vin
	Black Wire(14AWG)	-Vin
Output	Red Wire(14AWG)	+Vo
	Black Wire(14AWG)	-Vo
	M3 Shell hole	PE

Note:  
 Unit: mm[inch]  
 Tightening torque: Max 0.4 N · m  
 ADJ: Output adjustable resistor  
 General tolerances: ± 1.00[± 0.039]  
 The product must be installed in prevent fire and electric shock of enclosure for terminal use  
 It may appear that the input wire sleeves are all black when shipped


**WARNING :**

CAUTION: "To reduce the risk of fire, connect only to a circuit provided with 4 amperes maximum branch-circuit over-current protection in accordance with the National Electrical Code, ANSI/NFPA70."

WARNING: REPLACE ONLY WITH THE SAME RATINGS AND TYPE OF FUSE.

DANGER — HIGH VOLTAGE.

**Note:**

For additional information on Product Packaging, please refer to [www.idealpower.co.uk](http://www.idealpower.co.uk) Packaging bag number: 58220053.

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's corporate standards.

We can provide product customisation services. 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 handled by qualified units.

If the final product application is connected to a photovoltaic array, the array needs to be grounded and

The voltage between the positive and negative poles of the product shall not be greater than 1500.