

## Features

- Ultra-wide 250~1500V DC input voltage range (Transient 1700VDC last for 10s)
- High I/O isolation test voltage of 4000V AC
- Industrial grade operating temperature -40°C ~ +70°C
- High reliability, efficiency up to 93%
- Input RPP, UVP, Output SCP, OCP, OVP
- Operating up to 5000m altitude
- EFT immunity meets Level 4



Ideal Power's 36PV200-29BxxR3 200W 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 (W)	Nominal Output Voltage and Current (Vo/Io)	Efficiency at 850VDC (%) Typ.	Capacitive Load (µF) Max.
36PV200-29B12R3	200	12V/12.5A	88	5000
36PV200-29B24R3		24V/8.333A	91	5000
36PV200-29B28R3		28V/7.143A	91	3500
36PV200-29B48R3		48V/4.167A	93	1250

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

### Input Specifications

Parameter	Conditions	Min	Typ	Max	Unit
Input Voltage Range		250	--	1500	VDC
Input Current	300VDC	--	--	1.2	A
	850VDC	--	--	0.45	
Inrush Current	850VDC	--	100	150	A
	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, required		
Hot Plug			Unavailable		

**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. )

**Output Specifications**

Parameter	Conditions	Min	Typ	Max	Unit
Output Voltage Accuracy	All load range	--	±1	±2	%
Line Regulation	Rated load	--	±1	--	
Load Regulation	850VDC	--	±1	--	
Stand-by Power Consumption	1500VDC	--	1	2	W
Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	--	150	300	mV
Temperature Coefficient		--	±0.02	--	%/°C
Short Circuit Protection	Hiccup, continuous, self-recovery				
Output Voltage Accuracy	All load range	--	±1	±2	%
Line Regulation	Rated load	--	±1	--	
Load Regulation	850VDC	--	±1	--	
Stand-by Power Consumption	1500VDC	--	1	2	W
Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	--	150	300	mV
Temperature Coefficient		--	±0.02	--	%/°C
Short Circuit Protection	Hiccup, continuous, self-recovery				

**General Specifications**

Parameter	Conditions	Min	Typ	Max	Unit	
Isolation	Input-output	Electric strength test for 1min., leakage current <10mA	4000	--	--	VAC
	Input - PE		4000	--	--	
	Output - PE		2000	--	--	
Insulation Resistance	Input-output	Ambient temperature: 25 ± 5°C			MΩ	
	Input - PE	Relative humidity: < 95%RH, no condensation Test		100		--
	Output - PE	voltage: 500VDC				
Operating Temperature		-40	--	+70	°C	
Storage Temperature		-40	--	+85		
Storage Humidity	Non-condensing	--	--	95	%RH	
Power Derating	Operating temperature derating	-40°C to -25°C	2.67	--	--	%/°C
		+55°C to +70°C	2.67	--	--	
	Input voltage derating	250 - 300VDC	0.8	--	--	%/VDC
	Altitude derating	2000m - 5000m	6.67	--	--	%/Km
Switching Frequency		--	65	--	kHz	
Safety Standard	Design refers to UL1741, EN/IEC/BS EN62109-1					
MTBF	MIL-HDBK-217F@25°C	≥300,000 h				

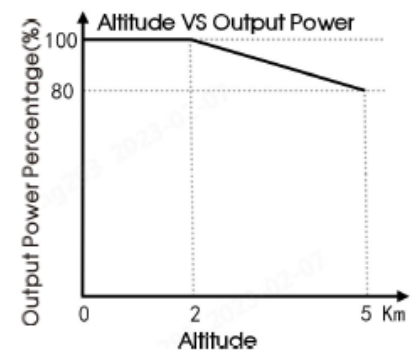
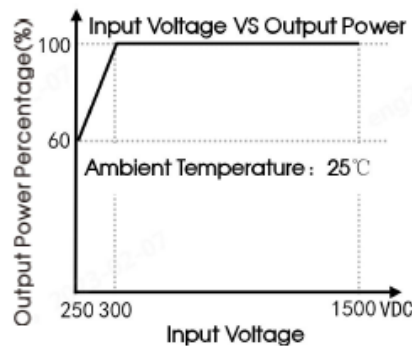
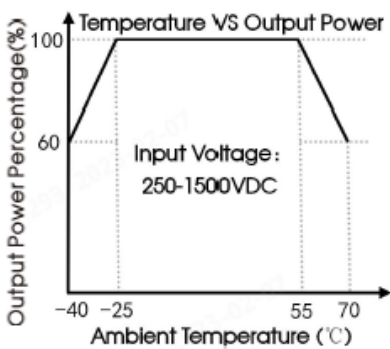
**Mechanical Specifications**

Case Material	Metal
Dimensions	201.00 x 70.00 x 42.00mm
Weight	620g (Typ.)
Cooling method	Free air convection

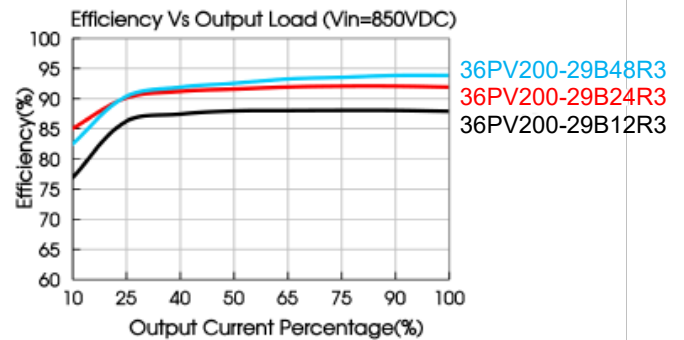
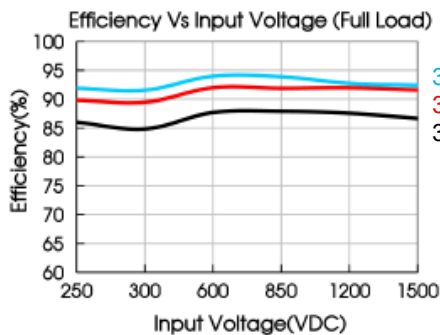
**Electromagnetic Compatibility (EMC)**

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

**Note:** For harsh EMC application environments, please consult FAE to add application circuits.

**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



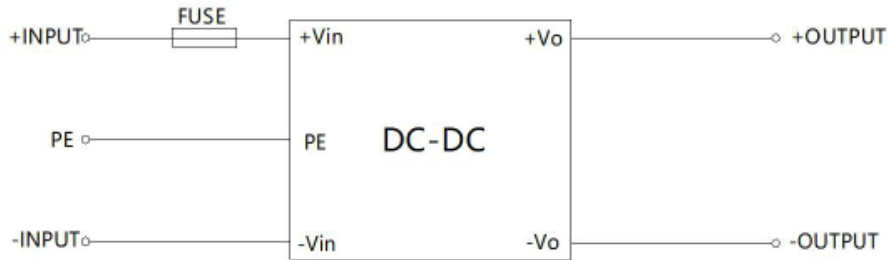
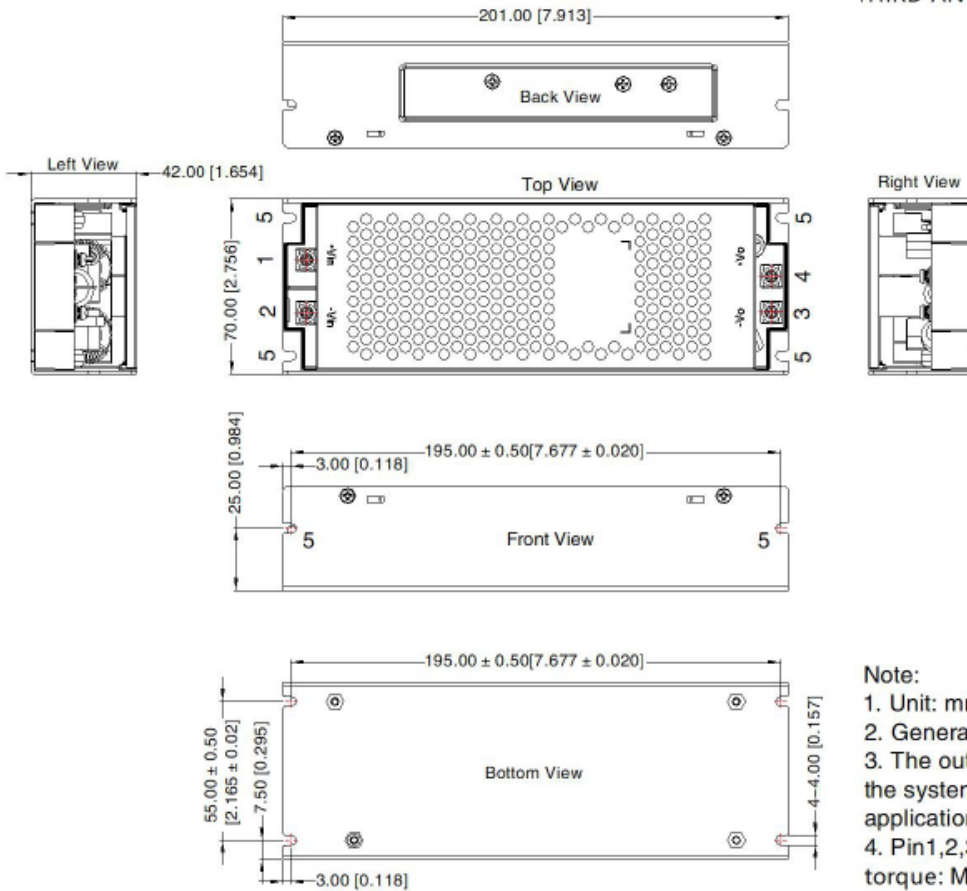
**Design Reference**
**1. Typical application circuit**


Fig. 1

Model	Recommended value
FUSE	6A/1500VDC, required

**Dimensions and Recommended Layout**

36PV200-29BxxR3

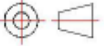
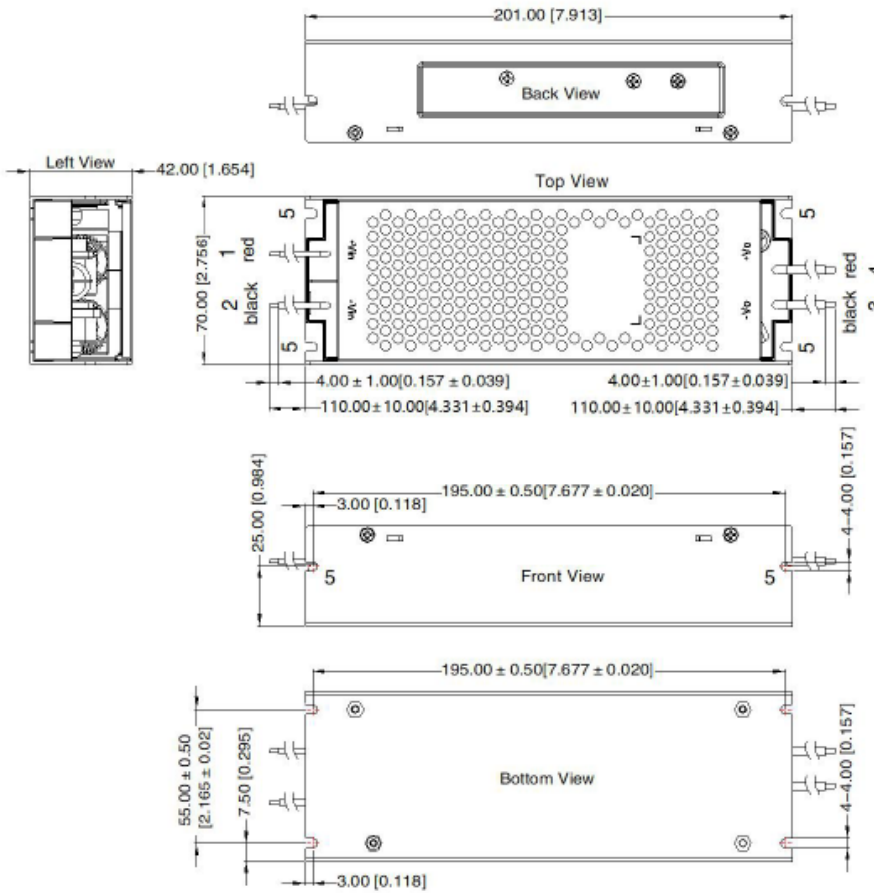
 THIRD ANGLE PROJECTION 


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

**Note:**

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

**Dimensions and Recommended Layout**
**36PV200-29BxxWR3**

 THIRD ANGLE PROJECTION 


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

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

**Note:**

For additional information on Product Packaging, please refer to [www.idealpower.co.uk](http://www.idealpower.co.uk). Packaging bag number: 58220211.

Unless otherwise specified, parameters in this datasheet were measured under the conditions of  $T_a=25^\circ\text{C}$ , 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.

To improve the efficiency, there will be audible noise generated when working at an input voltage higher than 1000VDC, but it does not affect product performance and reliability.

We can provide product customisation 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 handled by qualified units.

If UL certification is required, an external lightning protection device (SVR=6000V) should be connected to the input.