

ZKANRUI

Company Profile



<https://www.zkanruisolar.com>

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ABOUT US



Shanxi Zhongke Anrui Energy Technology Co., Ltd. (ZKANRUI)

Founded in 2018, with our production base located in the 5G Smart Innovation Park, Changzhi City, Shanxi Province, ZKANRUI is a high-tech enterprise specializing in solar photovoltaic junction boxes and connectors.

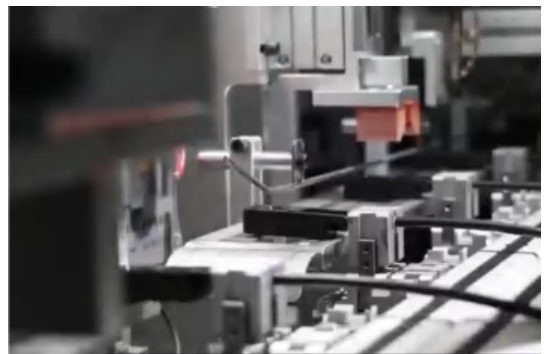
Our company is committed to building a "one-stop supply chain and technical support service platform" for solar PV junction boxes, offering a full range of services to global PV junction box manufacturers, including product design, technical analysis, international certification, mold design and matching, custom automation equipment, plastic injection OEM, customized raw material supply, material selection and technical training.



ABOUT US

Leveraging our complete R&D and manufacturing capabilities—from upstream core components (such as high-performance diodes) to downstream connection systems—the ZKANRUI platform helps customers shorten procurement and development cycles, and reduce raw material and R&D trial costs through centralized supply chain sourcing and refined operations.

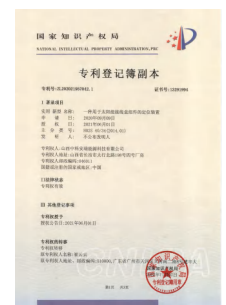
Our product portfolio covers solar PV connectors, solar PV junction boxes, high performance diodes, silicone parts, hardware parts, and other core components, all compatible with mainstream industry standards, featuring high reliability and strong weather resistance. Our company holds internationally recognized certifications such as TUV SUD, TUV Rheinland, UL, ISO Quality Management System, Environmental Management System Occupational Health and Safety Management System, etc. With the core advantages of "complete solutions, fast response, and cost savings," ZKANRUI helps customers efficiently establish overseas solar PV junction box production bases, resulting in win-win partnerships.



FACTORY



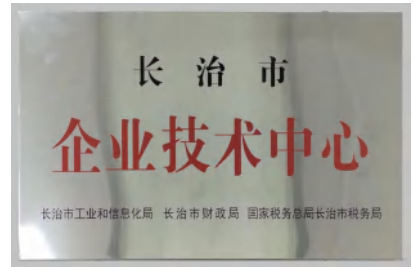
Certifications and Patents



Certifications and Patents



HONORS



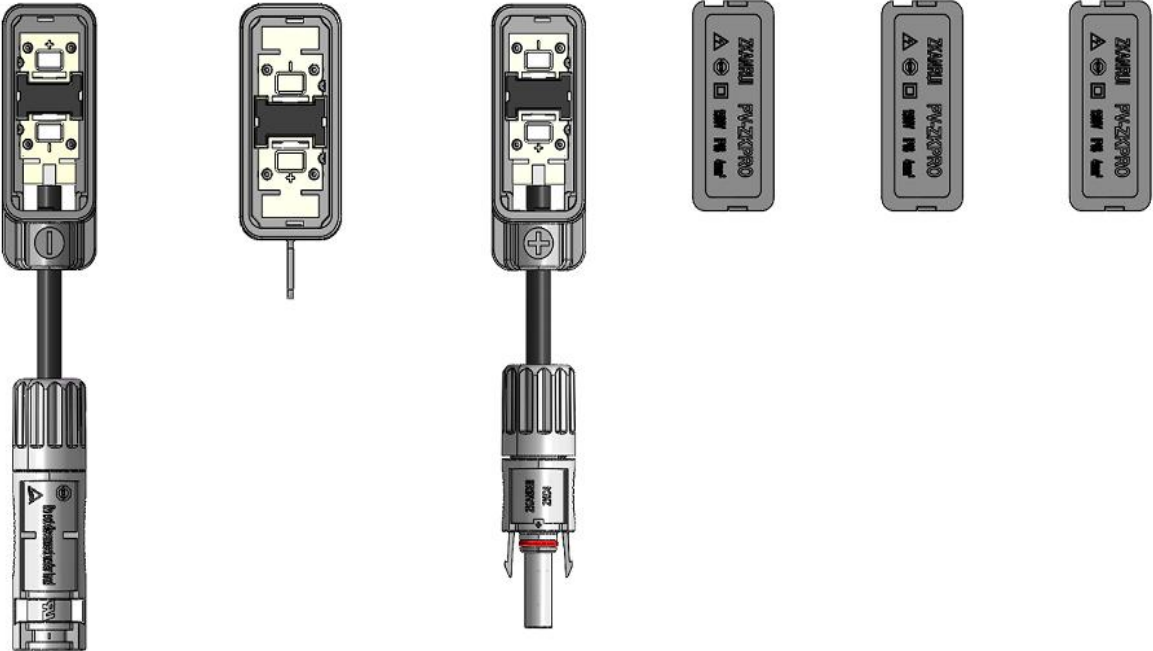
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ZKANRUI	specification number ZKAR2021002	PV JUNCTION BOX PV-ZKPRO Specification Manual
Page 1,4 pages in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

PV JUNCTION BOX

PV-ZKPRO

The appearance of the product graph

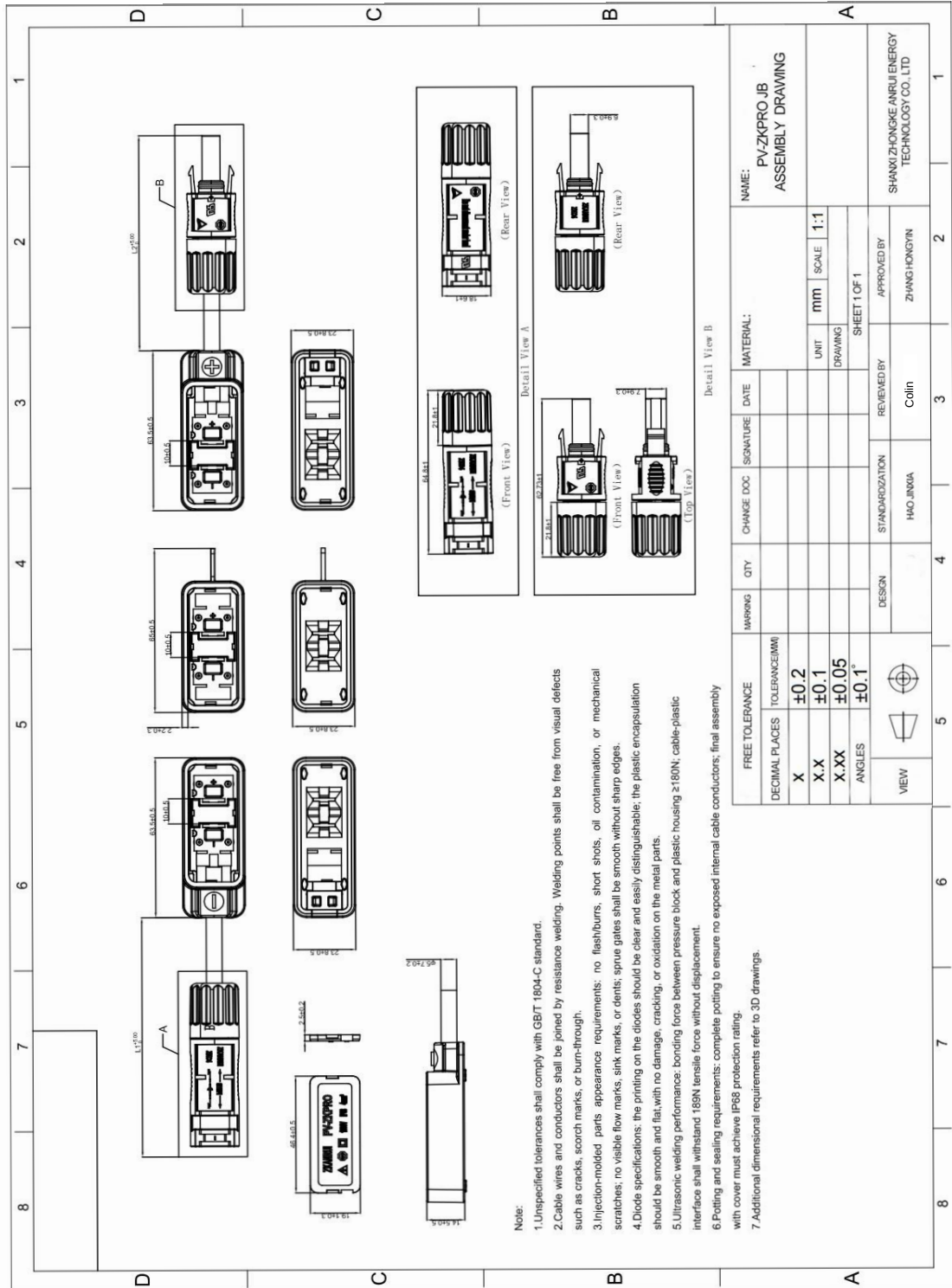


Product overview

The PV-ZKPRO three-part junction box employs resistance welding technology to connect the busbars of photovoltaic modules with cables. This process involves localized heating to fuse metals, creating a low-resistance, high-reliability electrical connection. It is suitable for high-power solar modules.

ZKANRUI	specification number ZKAR2021002	PV JUNCTION BOX PV-ZKPRO Specification Manual
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Size of product graphs



ZKANRUI	specification number ZKAR2021002	PV JUNCTION BOX PV-ZKPRO Specification Manual
Page 3,4 pages in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

Main technical specifications

Project	Performance index	
Model No.	PV-ZKPROx series, where x can be XZ, XR or XC.	
Rated Current	25A/30A/35A	A
Rated Voltage	1500	V DC
Cable size range	4	mm ²
Temperature range	-40~ +85	°C
Width of Copper Ribbons	Up to 8	mm
Protection level	IP68	
Safety Class	Class II	
Flame Resistance	V-0	
Waterproofing Structure	Potting sealant	
Amount of glue	Appr.20ml	
Connection Method	Soldering	
Insulation Material	PPE , PA	
Contact Material	Copper tin plating	
Optional Connector	PV-KST4-EVO2/II , QC4.10 PV-KBT4-EVO2/II , PV-ZKC2、PV-ZKC4	
Type of diodes	ZK4045, rated 40Adc, 45 Vdc (x=XZ) ZK5045, rated 50Adc, 45 Vdc (x=XR) ZK6045, rated 60Adc, 45 Vdc (x=XC)	

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Installation Instructions

Please follow the following instructions and select the tools specified in these instructions, otherwise the technical specifications may not meet the requirements of the standard. In addition, these instructions can help avoid potential hazards that may lead to personal injury and product damage.

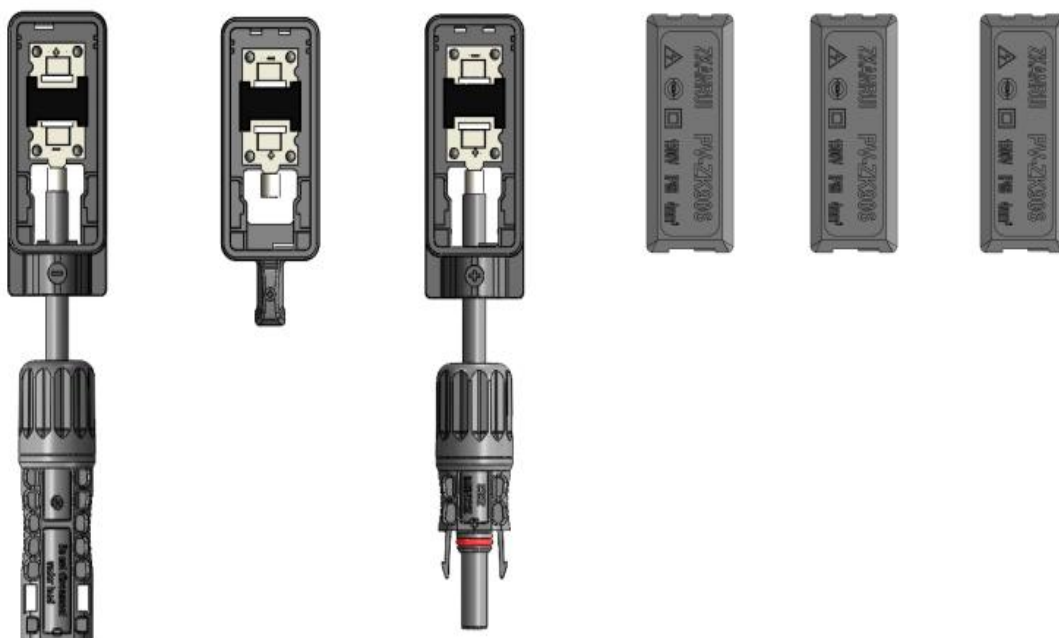
- 1、 The busbar of the component and the junction box wiring port should correspond one by one, and the electrical connection must be valid.
- 2、 Use sealant and potting glue according to the specified type. Junction box bonding must be arranged in the correct position in order to have reliable sealing performance. Potting glue surface must be higher than the diode and metal parts to prevent the junction box leakage, which may affect the performance.
- 3、 The components and junction box shall not be moved before the sealant and potting glue are completely cured.
- 4、 The welding between busbar and the junction box metal bracket shall not have leak welding, false welding and welding deviation. The busbar and junction box must be welded by skilled personnel. Too long welding time will damage the diode.
- 5、 Take electrostatic protection measures when touching or welding junction boxes.
- 6、 Identify the polarity of the electrical connection between the junction box and the component. The wrong connection will cause damage to the component or the junction box, which may cause fire.
- 7、 As the diode may be damaged by overheating or electrostatic shock during the production, the manufacturer should carefully test the diode before the products are shipped.
- 8、 The product must be installed and maintained by professional personnel.
- 9、 To prevent electric shock, please do not touch the electrically charged body during installation.
- 10、 Do not insert or remove the connector when it is under load.
- 11、 The junction box should not be in contact with corrosive materials during assembly and use.

	specification number ZKAR2021001	PV JUNCTION BOX PV-ZK906 Specification Manual
Page 1,4 pages in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

PV JUNCTION BOX

PV-ZK906

The appearance of the product graph



Product overview

PV-ZK906 three-split junction box with fully potted design concept uses high-end integrated chips. The electrical connection performance is stable and reliable.

This product has six groups of busbar output ports, using welding method, suitable for high efficiency mono and poly-silicon solar modules.

ZKANRUI	specification number ZKAR2021001	PV JUNCTION BOX PV-ZK906 Specification Manual
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Main technical specifications

Project	Performance index	
Rated Current	20/25/30/35	A
Rated Voltage	1500	V DC
Cable size range	4	mm ²
Temperature range	-40~ +85	°C
Width of Copper Ribbons	Up to 8	mm
Protection level	IP68	
Safety Class	Class II	
Flame Resistance	V-0	
Waterproof Structure	Potting sealant	
Amount of glue	Appr.20ml	
Connection Method	Soldering	
Insulation Material	PPE+PS, PA	
Contact Material	Copper tin plating	
Optional Connector	PV-KST4-EVO2/II, QC4.10, PV-KBT4-EVO2/II, PV-ZKC2, PV-ZKC4	

Installation Instructions

Please follow the following instructions and select the tools specified in these instructions, otherwise the technical specifications may not meet the requirements of the standard. In addition, these instructions can help avoid potential hazards that may lead to personal injury and product damage.

- 1、 The busbar of the component and the junction box wiring port should correspond one by one, and the electrical connection must be valid.
- 2、 Use sealant and potting glue according to the specified type. Junction box bonding must be arranged in the correct position in order to have reliable sealing performance. Potting glue surface must be higher than the diode and metal parts to prevent the junction box leakage, which may affect the performance.
- 3、 The components and junction box shall not be moved before the sealant and potting glue are completely cured.

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- 4、 The welding between busbar and the junction box metal bracket shall not have leak welding, false welding and welding deviation. The busbar and junction box must be welded by skilled personnel. Too long welding time will damage the diode.
- 5、 Take electrostatic protection measures when touching or welding junction boxes.
- 6、 Identify the polarity of the electrical connection between the junction box and the component. The wrong connection will cause damage to the component or the junction box, which may cause fire.
- 7、 As the diode may be damaged by overheating or electrostatic shock during the production, the manufacturer should carefully test the diode before the products are shipped.
- 8、 The product must be installed and maintained by professional personnel.
- 9、 To prevent electric shock, please do not touch the electrically charged body during installation.
- 10、 Do not insert or remove the connector when it is under load.
- 11、 The junction box should not be in contact with corrosive materials during assembly and use.

ZKANRUI	specification number ZKAR2021003	PV JUNCTION BOX PV-ZK78X Specification Manual
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PV JUNCTION BOX

PV-ZK78X

The appearance of the product graph



Product overview

PV-ZK78X is a junction box for photovoltaic systems that uses axial diodes. It is suitable for high power single crystal and multi-crystal solar cells. The product is completely sealed and high current design to avoid moisture, and ensure safety in high power applications.

Additionally, the junction box is designed for resistance welding to deliver reliable and stable electrical connections for solar modules.

ZKANRUI	specification number ZKAR2021003	PVJUNCTION BOX PV-ZK78X Specification Manual
Page 3,4 pages in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

Main technical specifications

Project	Performance index	
Rated Current	20/25/30	A
Rated Voltage	1500	V DC
Cable size range	4	mm ²
Temperature range	-40~ +85	°C
Width of Copper Ribbons	Up to 8	mm
Degree of protection	IP68	
Safety Class	Class II	
Flame Resistance	V-0	
Waterproof Structure	Potting sealant	
Amount of glue	Appr.20ml	
Connection Method	Soldering	
Insulation Material	PPE+PS, PA	
Contact Material	Copper tin plating	
Optional Connector	PV-KST4-EVO2/II, QC4.10, PV-KBT4-EVO2/II, PV-ZKC2	

Installation Instructions

Please follow the following instructions and select the tools specified in these instructions, otherwise the technical specifications may not meet the requirements of the standard. In additional, these instructions can help to avoid potential hazards that may lead to personal injury and product damage.

- 1、 The busbar of the component and the junction box wiring port should correspond one by one, and the electrical connection must be valid.
- 2、 Use sealant and potting glue according to the specified type. Junction box bonding must be arranged in the correct position in order to have reliable sealing performance. Potting glue surface must be higher than the diode and metal parts to prevent the junction box leakage, which may affect the performance.
- 3、 The components and junction box shall not be moved before the sealant and potting glue are completely cured.

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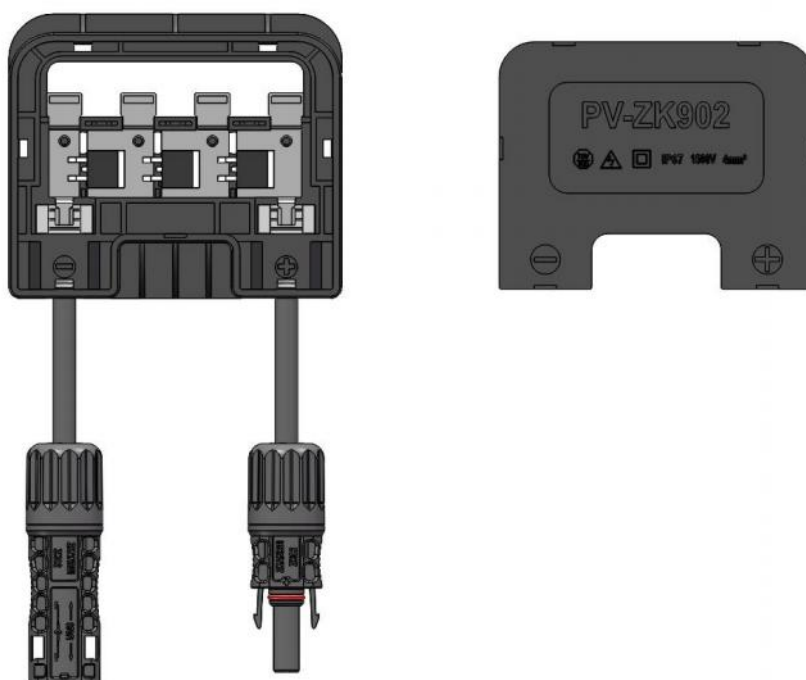
- 4、 The welding between busbar and the junction box metal bracket shall not have leak welding, false welding and welding deviation. The busbar and junction box must be welded by skilled personnel. Too long welding time will damage the diode.
- 5、 Take electrostatic protection measures when touching or welding junction boxes.
- 6、 Identify the polarity of the electrical connection between the junction box and the component. The wrong connection will cause damage to the component or the junction box, which may cause fire.
- 7、 As the diode may be damaged by overheating or electrostatic shock during the production, the manufacturer should carefully test the diode before the products are shipped.
- 8、 The product must be installed and maintained by professional personnel.
- 9、 To prevent electric shock, please do not touch the electrically charged body during installation.
- 10、 Do not insert or remove the connector when it is under load.
- 11、 The junction box should not be in contact with corrosive materials during assembly and use.

ZKANRUI	specification number ZKAR2021004	PV JUNCTION BOX PV-ZK902 Specification Manual
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PV JUNCTION BOX

PV-ZK902

The appearance of the product graph

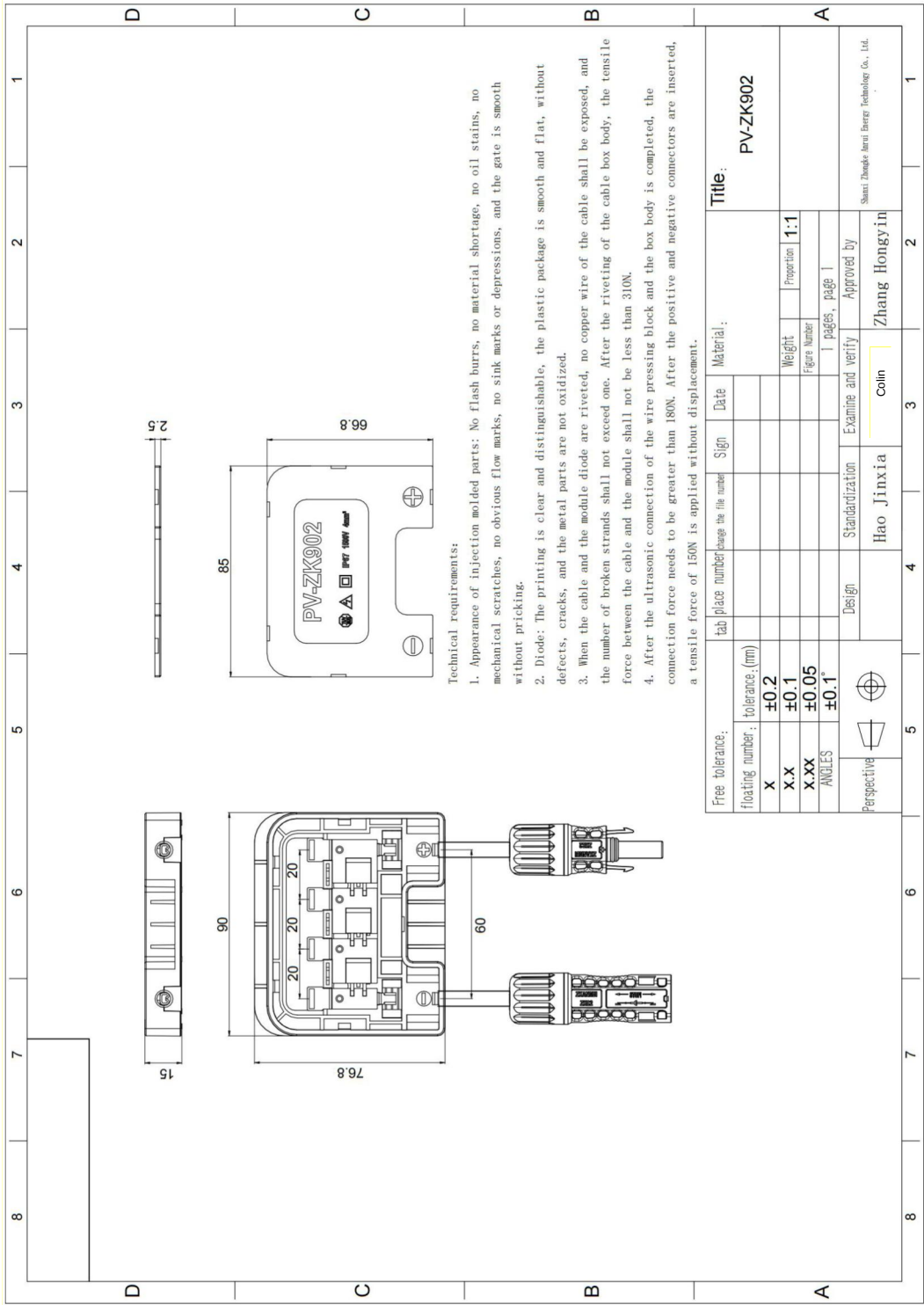


Product overview

PV-ZK902 junction box uses chip diode with full pot-sealing design. This product has 4 sets of busbar output ports, using welding method, suitable for all kinds of mono and poly-crystalline solar modules.

ZKANRUI	specification number ZKAR2021004	PV JUNCTION BOX PV-ZK902 Specification Manual
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Size of product graphs



ZKANRUI	specification number ZKAR2021004	PV JUNCTION BOX PV-ZK902 Specification Manual
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Main technical specifications

Project	Performance index	
Rated Current	16/20	A
Rated Voltage	1500	V DC
Cable size range	4	mm ²
Temperature range	-40~ +85	°C
Width of Copper Ribbons	Up to 10	mm
Protection level	IP67	
Safety Class	Class II	
Flame Resistance	V-0	
Waterproof Structure	Potting sealant	
Amount of glue	Appr.25ml	
Connection Method	Soldering	
Insulation Material	PPE+PS	
Contact Material	Copper tin plating	
Optional Connector	PV-KST4-EVO2/II, QC4.10, PV-KBT4-EVO2/II, PV-ZKC2	

Installation Instructions

Please follow the following instructions and select the tools specified in these instructions, otherwise the technical specifications may not meet the requirements of the standard. In addition, these instructions can help avoid potential hazards that may lead to personal injury and product damage.

- 1、 The busbar of the component and the junction box wiring port should correspond one by one, and the electrical connection must be valid.
- 2、 Use sealant and potting glue according to the specified type. Junction box bonding must be arranged in the correct position in order to have reliable sealing performance. Potting glue surface must be higher than the diode and metal parts to prevent the junction box leakage, which may affect the performance.
- 3、 The components and junction box shall not be moved before the sealant and potting glue are completely cured.

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- 4、 The welding between busbar and the junction box metal bracket shall not have leak welding, false welding and welding deviation. The busbar and junction box must be welded by skilled personnel. Too long welding time will damage the diode.
- 5、 Take electrostatic protection measures when touching or welding junction boxes.
- 6、 Identify the polarity of the electrical connection between the junction box and the component. The wrong connection will cause damage to the component or the junction box, which may cause fire.
- 7、 As the diode may be damaged by overheating or electrostatic shock during the production, the manufacturer should carefully test the diode before the products are shipped.
- 8、 The product must be installed and maintained by professional personnel.
- 9、 To prevent electric shock, please do not touch the electrically charged body during installation.
- 10、 Do not insert or remove the connector when it is under load.
- 11、 The junction box should not be in contact with corrosive materials during assembly and use.

ZKANRUI	specification number ZKAR2021005	PV Connector PV-ZKC4 Specification Manual
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PV-ZKC4 Connector

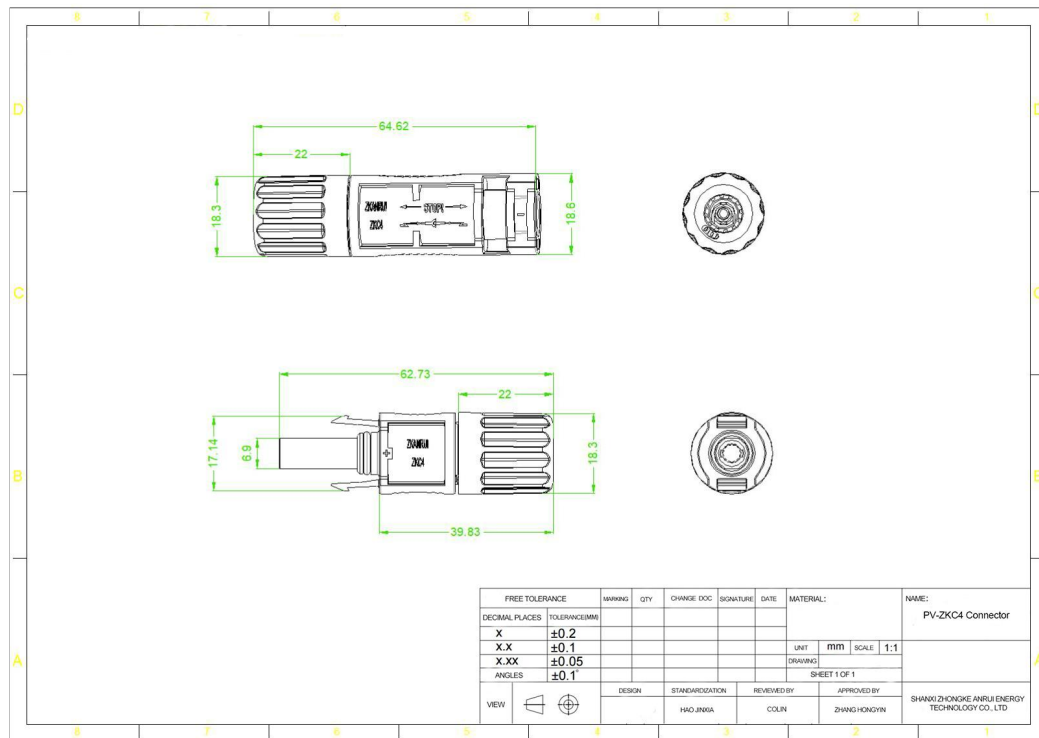
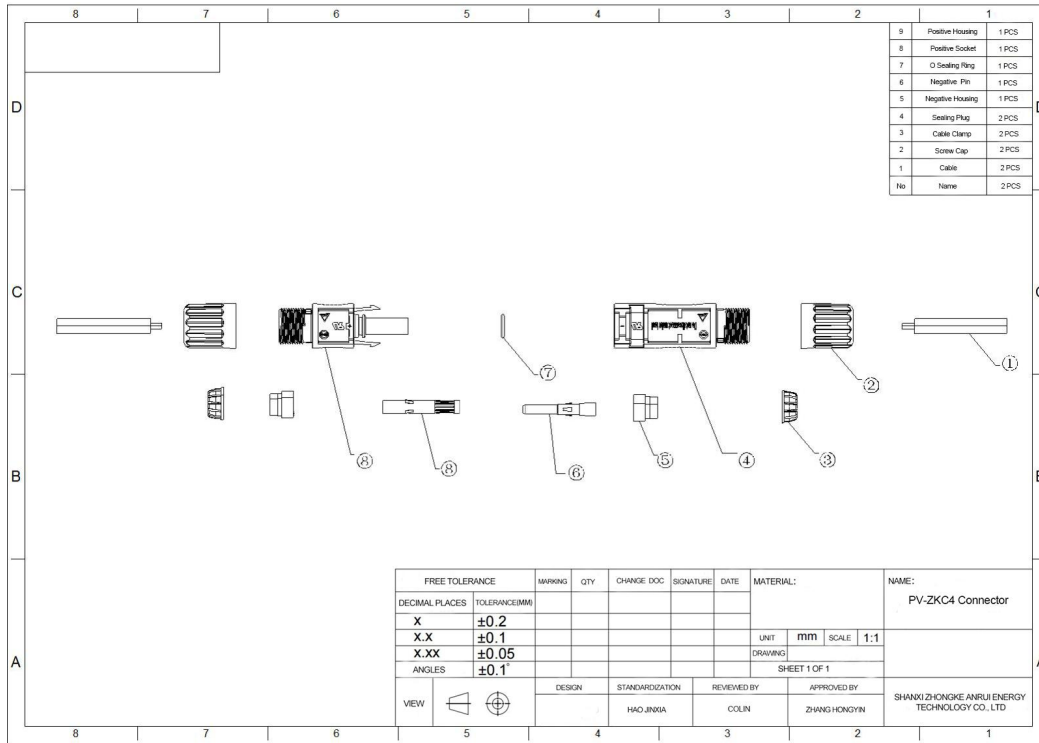
The appearance of the product graph

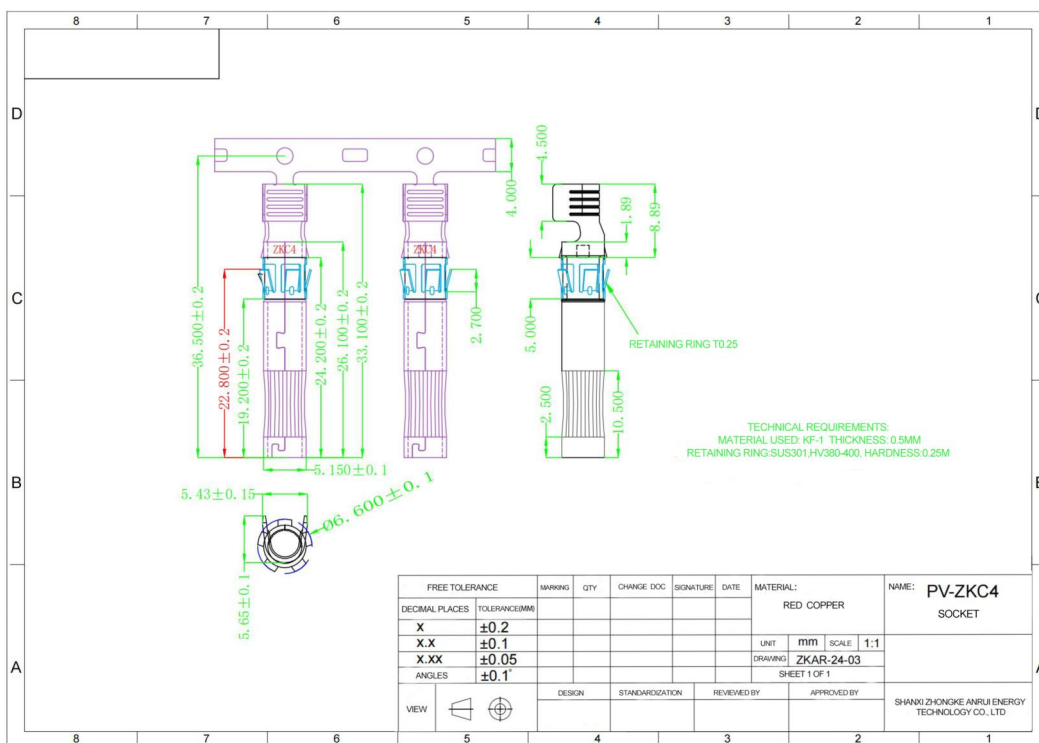
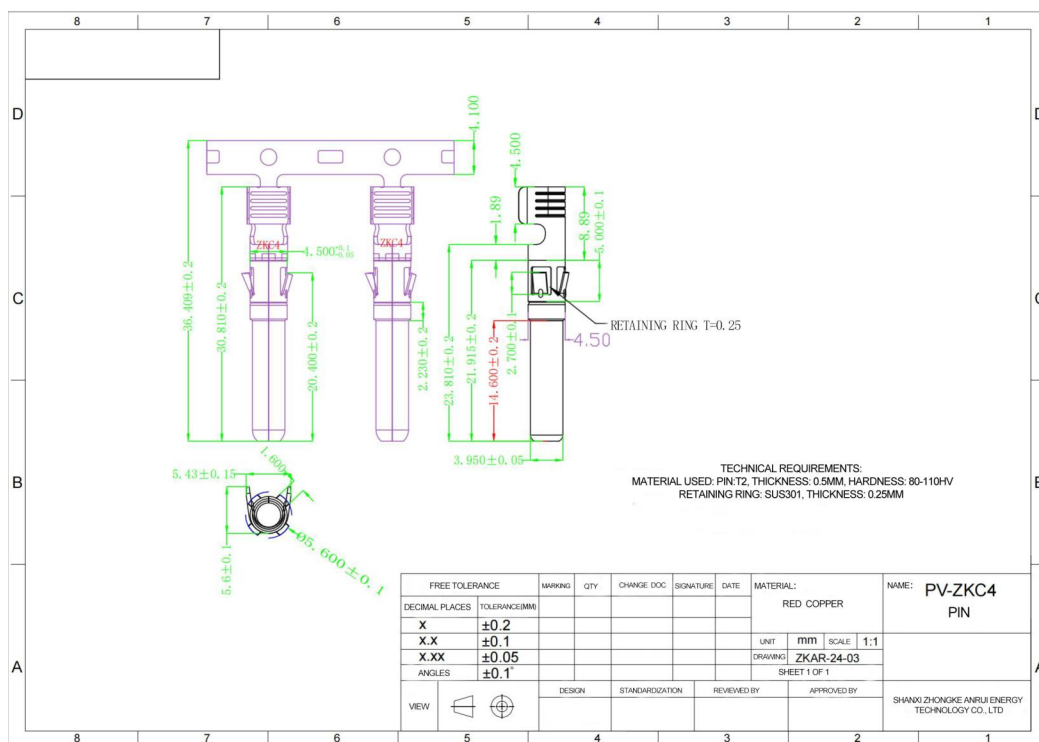
Product overview

PV-ZKC4 is a photovoltaic connector independently developed by our company, which is composed of metal parts and insulating parts. It connects multiple solar cell modules into a system, which has the characteristics of high stability and high sealing. Meanwhile, it is resistant to various environmental and climate changes and has high electrical safety performance, thus ensuring the DC circuit connection of commercial, industrial and residential roof photovoltaic devices.

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Size of product graphs





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Main technical specifications

Project	Performance index		Notes
Type	PV-ZKC4		
Rated voltage (DC)	1500/2000	V	IEC
Rated current	41	A	
Contact resistance	Max 0.2	mΩ	
Temperature range	-40℃~+85	℃	
Breaking capacity	≥80	N	
Plug life test	50	times	
Protection level	IP65/IP68 (1m,1h)		
Safety Class	Class II		
Fire rating	UL94 V-0		

BOM List

NO.	Object	Type	Manufacturer	Quantity	Notes
1	Positive housing	PV40Z	Asahi Kasei Corp.	1 pcs	
2	Negative housing	PV40Z	Asahi Kasei Corp.	1 pcs	
3	Screw Cap	A3XZG5	BASF SE	2 pcs	
4	Cable Clamp	FR370	Asahi Kasei Corp.	2 pcs	
5	Sealing Plug	Silicone rubber	Ningbo Yucheng	2 pcs	
6	O Sealing Ring	Silicone rubber	Ningbo Yucheng	1 pcs	
7	Negative Pin	Copper, tinned	Ning Bo Hongxuan	1 pcs	
8	Positive Socket	Copper, tinned	Ning Bo Hongxuan	1 pcs	

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Installation Instructions

Please follow the following instructions and select the tools specified in these instructions, otherwise the technical specifications may not meet the requirements of the standard. In addition, these instructions can help avoid potential hazards that may lead to personal injury and product damage.

1. During self-installation, if not using the parts and tools that are specified by our company, or if the preparation and installation operations are ignored, we will not guarantee the product safety and the consistency of technical parameters.
2. To prevent electric shock, the connector must be disconnected from the power supply during assembly and disassembly.
3. The terminal product must provide anti-electric shock function.
4. PVC cables are not recommended.
5. The plug connector cannot be pulled out under load. Please turn off the DC/AC frequency converter or turn on the DC-AC circuit breaker to make the connector in unloaded state, then it can be plugged in and out with power within the allowable range.
6. It is recommended not to use tin-free cables, because the contact resistance of the crimping site may exceed the allowable value after the copper wire of the cable is oxidized.
7. Protective caps must be used for disconnected connectors to prevent dust and water from entering.
8. The waterproof grade of plug-in parts is IP68. They cannot be used underwater for a long time. Do not place the connector on the roof surface.
9. Products should not be used in environments containing hydrocarbons, phenols, ketones, ammonia, etc. that will corrode plastics. During installation, it is forbidden to add or apply any grease and lubricant to the connector. (See Schedule of chemical resistance)

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Machine Assembly Process

1. Strip



Strip size: $7 \pm 0.5\text{mm}$

2. Rivet

Cable specification	Riveting height	Riveting width	Compression ratio
4mm^2	$2.3 \pm 0.1\text{mm}$	$4.1 \pm 0.1\text{mm}$	$70\% \leq x \leq 90\%$

3. Harness Assembly



Insert the riveted plug into the socket or the insulating sleeve of the plug until it engages. Gently pull the wire to check whether the metal parts are firmly engaged.

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4. Nut Assembly

NO.	Wire diameter (mm)	Interstice in management(mm)	Reference torque(N*m)	Notes
1	$5 \leq OD < 6$	$0 < X \leq 1.0$	$3 \pm 0.5 \text{ N*m}$	Please calibrate the torque of the equipment before production to Better Meet the Requirements of gap management and control.
2	$6 \leq OD < 6.6$			
3	$6.6 \leq OD < 7.2$			

Notes: Before production, please calibrate the torque of the equipment to better meet the gap control requirements.

Manual Assembly Process

1. Tool requirements

(1) Wire stripping pliers



Type	Strip Scope	
4.0/12	4.0mm ²	20AWG

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(2) Riveting pliers



Lettering	Rivet Scope	
4.0/12	4.0mm ²	12AWG



(3) Plastic wrench

1 Set=2 Pcs

2. Assembly step



(1) Strip wires

Strip off the cable insulation, $L=7\pm0.5\text{mm}$.

Be careful not to cut off the core under the insulation.



(2) Rivet



The concentricity of metal parts and cable wires shall be ensured.
The pull force between the cable and the metal part after riveting needs to be larger than or equal to 310N.

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(3) Insert

Insert the riveted plug into the socket or the insulating sleeve of the plug until it engages. Gently pull the wire to check whether the metal parts are firmly engaged.



(4) Install the nut

Pre-tighten by hand, and then tighten the cable nut with a plastic wrench (refer to chapter Nut Assembly). When screwing the nut, ensure that the cable is concentric with the nut. The connector nut is removable. The original plastic wrench can be used for on-site assembly, not for batch assembly in the factory.

Plug and unlock the connectors

1. Plug Connectors



Plug the positive and negative poles of the connector until they engage. Pull gently to check whether they are firmly engaged.

2. Unlock Connectors

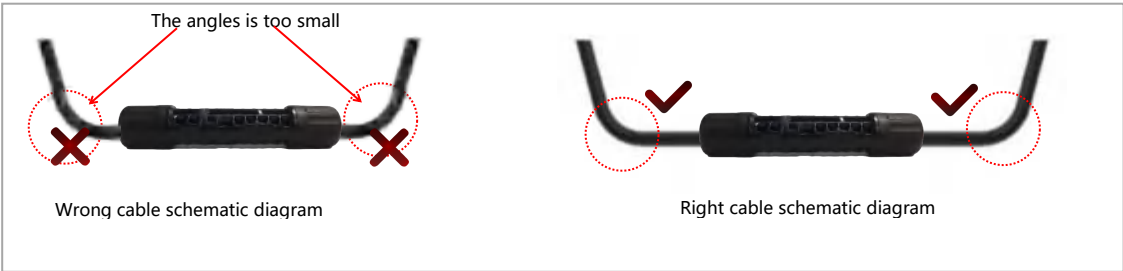


This plug connection can only be unlocked using a plastic wrench tool.

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Cable status

1. Cable wiring



Note: please refer to the cable manufacturer's detailed requirements for minimum bending radius.

2. Engaged state



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Annex

1.Schedule of chemical resistance

Category	Substance	Manufacturer	Critical Strain 23℃	Grade
Adhesive	KE45W/KE4828W	Shin-Etsu chemical	>1.0	A
	TSE382W/TSE392W	Momentive	>1.0	A
	PV804/PV8101	Dow Corning	>1.0	A
	APF125	Wacker Chemical	>1.0	B
	VHB/TAPE 4941	3M	>1.0	A
	Chemlok	LORD	0.2-0.5	C
Filler	PV7010	Dow Corning	>1.0	A
	KE200/CX200	Shin-Etsu Chemical	>1.0	A
	KE210F/CAT 210	Shin-Etsu Chemical	>1.0	A
	RAKUSIL A/B	Germany Rampf	>1.0	A
	VU4459/41 SVHF	Germany Petersth	0.2-0.5	C
Grease	Z260/A7002	/	>1.0	A
Surfactant	Charmy V quick	Kao	>1.0	A
Thermal Compound	SC102 compound	Dow Corning	>1.0	A
Release Agent	KF-96SP	Shin-Etsu Chemical	0.2-0.5	C
	PANDO 39D	Sanken Chemical	<0.2	D
	Telicoat S-6	Kyokuto Yuka	0.2-0.5	C
	Snowwhit EC	Netherlands	0.2-0.5	C
	Telicoat A	Kyokuto Yuka	>1.0	A
Rust Inhibitor	Antikor RS Aerosol	technik Gmbh	0.2-0.5	C
	D1 MIST	Yamaichi Chemical	0.2-0.5	C
	Barrier Guard	Yamaichi Chemical	<0.2	D
	TSP Spray	Sumikin	<0.2	D
	WD-40	WD-40	0.5-1.0	B
Tape Adhesive	CEMEDINE SuperX No.8008	Cemedine	0.5-1.0	B
	CEMEDINE SuperX No.8008Y6	Cemedine	>1.0	A
	cemedine superX SX720B	Cemedine	0.2-0.5	C
	Chemlok 487A/B	LORD	<0.2	D
	Chemlok 7701	LORD	<0.2	D

ZKANRUI	specification number ZKAR2021005	PV Connector PV-ZKC4 Specification Manual
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Alkyd alkali	Methanol	/	>1.0	A
	Ethyl alcohol	/	>1.0	A
	Isopropyl alcohol	/	0.5-1.0	B
	Ethylene glycol	/	0.5-1.0	B
	25% Ammonium water	/	>1.0	A
	50% Sulfuric acid solution	/	0.5-1.0	B
	Sodium chloride solid	/	0.5-1.0	A
	60% Phosphoric acid solution	/	>1.0	A
Ketones	Acetone	/	<0.2	D
	Methylethyl ketone	/	<0.2	D
Hydrocarbon	Methyl	/	<0.2	D
	Dimethyl	/	<0.2	D
	Cresol	/	0.5-1.0	B
Oils	DiaCut	Oelheld	0.5-1.0	B
	Oily sealing agent	/	<0.2	D
	Engine oil	/	<0.2	D
	Base oil	/	<0.2	D
	Kerosene	/	<0.2	D
	Gasoline	/	<0.2	D
	Varnish	/	<0.2	D
	Punching oil	/	<0.2	D
	Cutting oil	/	<0.2	D
	Heat transfer oil	/	<0.2	A
	Machine oil	/	<0.2	D
	High-temperature grease	/	<0.2	A
	Dry film lubricant	/	<0.2	A
Other	Hand cream	/	0.5-1.0	B
	Vaseline	/	>1.0	A
	Olive oil	/	0.5-1.0	B
	Butter	/	0.2-0.5	C
	Margarine	/	0.2-0.5	C
	Soybean Oil	/	0.2-0.5	C

2. Description of the critical point

Critical Stress (%)	Description	Rating
> 1.0	A secondary factor in cracking	A
1.0-0.5	Basically, in stress-concentrated areas, there will be some cracking. Particular attention needs to be paid to the use of chemicals	B
0.5-0.2	There is a risk of cracking, whether static or dynamic stress is present. Particular attention should be paid to avoiding contact with chemicals	C
< 0.2	Exposure to chemicals has a high risk of cracking	D

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Page 13,14 pages in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

Disclaimer of Connectors

Our company will not be liable for any problems and losses caused by any of the following circumstances.

1. Product transportation and storage

1.1 During transportation and storage, products shall not be stored together with relevant chemicals in the "schedule of chemicals resistant", which can pollute these chemicals;

1.2 During the transportation and storage of products, do not put too much pressure on the products, and do not damage the products by impacting or other acts;

1.3 The products shall be stored at normal temperature during transportation and warehouse, and attention shall be paid to protection from light, water and dust to avoid reducing the performance of the products. Special attention shall be paid to the site of the power station.

1.4 The normal storage time of the product is 2 years.

2. Product installation and use environment

2.1 The normal working ambient temperature of the product is - 40 ~ + 85 °C;

2.2 The on-site installation of products shall be carried out in accordance with the "installation instructions" of "Zhongke Anrui";

2.3 The product must wear a dust cap before leaving the factory if the product is used in coastal, desert and other areas with a lot of dust;

2.4 When the product is used on the roof power station, the connector cannot be directly placed on the roof surface.

3. See "schedule of chemical resistance" for the compatibility between products and chemicals.

4. When the connector is not coupled, the product will not meet any IP protection level and cannot be used normally.

4.1 The product meets the requirements of IP68 protection grade after insertion, but it cannot be placed underwater or on the roof for a long time.

4.2 The connector shall not be placed outdoors for a long time without insertion, which may cause corrosion of metal parts and reduce the performance of the connector.

	specification number ZKAR2021005	PV Connector PV-ZKC4 Specification Manual
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4.3 If the connector cannot be inserted in time during outdoor installation and use, please protect the connector, and insert the "dust cap" on the connector port to prevent the connector from being polluted by water and dust, which will affect the product performance.

5. During the installation and use of the connector, the connector shall not be excessively collided or dragged on the grass and ground, etc. Prevent the connector from being polluted before use and reduce the product performance.

6. During the maintenance of the product, only professional maintenance personnel or trained personnel can enter the maintenance within 1.2m distance from the product space.

7. When repairing the product use tools to touch the product, and the minimum distance between the human body and the product must be at least 60mm.

8. Connector mating

8.1 The "Zhongke Anrui" brand connector must be plugged into the positive and negative poles of the "Zhongke Anrui" brand connector, and cannot be plugged into other brand connectors in the market.

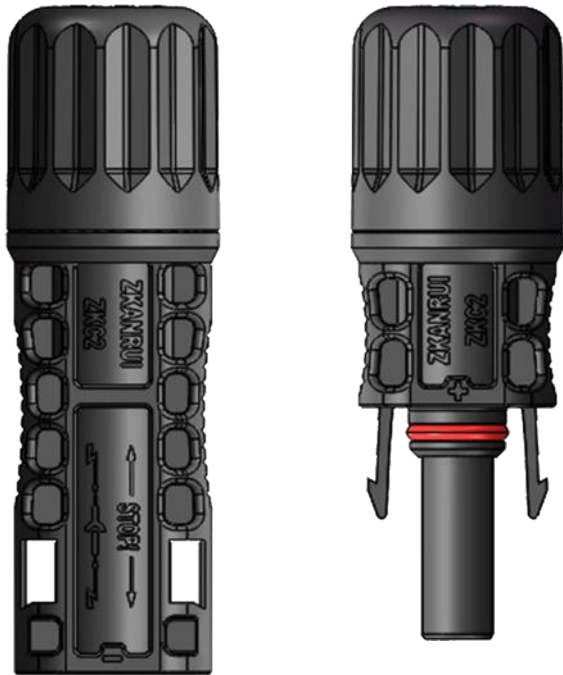
8.2 If the customer wants to plug in the positive and negative terminals of connectors of other brands, please contact us in advance.

The final interpretation right of this exemption clause belongs to "Shanxi Zhongke Anrui Energy Technology Co., Ltd."

Shanxi Zhongke Anrui Energy Technology Co., Ltd. has the right to modify printing errors, or improve and innovate products. When there are any above changes, they will not be notified in advance. If there is any misunderstanding about this description due to different language versions, the Chinese version shall prevail.

ZKANRUI	specification number ZKAR2021006	PV Connector PV-ZKC2 Specification Manual
Page 1,5 pages in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

PV-ZKC2 Connector

The appearance of the product graph

Product overview
PV-ZKC2 is a photovoltaic connector is developed by our company, which composed of metal parts and insulating parts. Passed various environment test with high electrical safety performance, can be widely used solar grid like commercial, industrial and residential roof photovoltaic devices.

ZKANRUI	specification number ZKAR2021006	PV Connector PV-ZKC2 Specification Manual			
Page 3,5 pages in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.			
Main technical specifications					
Project		Performance index		Notes	
Type		PV-ZKC2			
TUV Certificate number		B104602 0005 Rev.00			
Rated voltage (DC)		1500	V	IEC	
Rated current		35	A		
		40	A		
Contact resistance		≤ 0.5	mΩ		
Temperature range		-40℃~+85	℃		
Breaking capacity		≥80	N		
Plug life test		50	times		
Protection level		IP65/IP68 (1m,1h)			
Safety Class		Class II			
Fire rating		UL94 V-0			
BOM List					
NO.	Object	Type	Manufacturer	Quantity	Notes
1	Positive housing	PV40Z	Asahi Kasei Corp.	1 pcs	
2	Negative housing	PV40Z	Asahi Kasei Corp.	1 pcs	
3	Screw Cap	A3X2G5	BASF SE	2 pcs	
4	Cable Clamp	FR370	Ashai Kasei Corporation	2 pcs	
5	Sealing Plug	Silicone rubber	Ningbo Yucheng	2 pcs	
6	O Sealing Ring	Silicone rubber	Ningbo Yucheng	1 pcs	
7	Negative Pin	Copper,tinned	Ningbo Kailing	1 pcs	
8	Positive Socket	Copper,tinned	Ningbo Kailing	1 pcs	

ZKANRUI	specification number ZKAR2021006	PV Connector PV-ZKC2 Specification Manual
Page 4,5 pages in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

Disclaimer of Connectors

Our company will not be liable for any problems and losses caused by any of the following circumstances.

1. Product transportation and storage

1.1 During transportation and storage, products shall not be stored together with relevant chemicals in the "schedule of chemicals resistant", which can pollute these chemicals;

1.2 During the transportation and storage of products, do not put too much pressure on the products, and do not damage the products by impacting or other acts;

1.3 The products shall be stored at normal temperature during transportation and warehouse, and attention shall be paid to protection from light, water and dust to avoid reducing the performance of the products. Special attention shall be paid to the site of the power station.

1.4 The normal storage time of the product is 2 years.

2. Product installation and use environment

2.1 The normal working ambient temperature of the product is - 40 ~ + 85 °C;

2.2 The on-site installation of products shall be carried out in accordance with the "installation instructions" of "Zhongke Anrui";

2.3 The product must wear a dust cap before leaving the factory if the product is used in coastal, desert and other areas with a lot of dust;

2.4 When the product is used on the roof power station, the connector cannot be directly placed on the roof surface.

3. See "schedule of chemical resistance" for the compatibility between products and chemicals.

4. When the connector is not coupled, the product will not meet any IP protection level and cannot be used normally.

4.1 The product meets the requirements of IP68 protection grade after insertion, but it cannot be placed underwater or on the roof for a long time.

4.2 The connector shall not be placed outdoors for a long time without insertion, which may cause corrosion of metal parts and reduce the performance of the connector.

ZKANRUI	specification number ZKAR2021006	PV Connector PV-ZKC2 Specification Manual
Page 5,5 pages in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

4.3 If the connector cannot be inserted in time during outdoor installation and use, please protect the connector, and insert the "dust cap" on the connector port to prevent the connector from being polluted by water and dust, which will affect the product performance.

5. During the installation and use of the connector, the connector shall not be excessively collided or dragged on the grass and ground, etc. Prevent the connector from being polluted before use and reduce the product performance.

6. During the maintenance of the product, only professional maintenance personnel or trained personnel can enter the maintenance within 1.2m distance from the product space.

7. When repairing the product use tools to touch the product, and the minimum distance between the human body and the product must be at least 60mm.

8. Connector mating

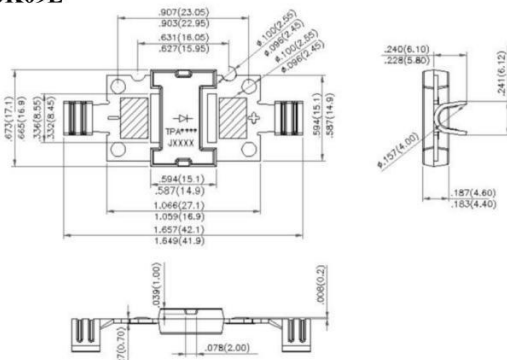
8.1 The "Zhongke Anrui" brand connector must be plugged into the positive and negative poles of the "Zhongke Anrui" brand connector, and cannot be plugged into other brand connectors in the market.

8.2 If the customer wants to plug in the positive and negative terminals of connectors of other brands, please contact us in advance.

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ZKANRUI	Specification number ZKAR2026008	Diode Product Specification
Page1,1pagein total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

GF5045-150T1			
Reverse Voltage - 45 Volts Forward Current - 30 Amperes		Bypass Diode Module For PV	
Features ● Metal of silicon rectifier, majority carrier conduction ● Guard ring for transient protection ● Low power loss, high efficiency ● High current capability, low IR ● High surge capacity ● High temperature reverse characteristic is excellent ● For use in photovoltaic solar cell protection Trench Schottky rectifier Mechanical Data ● Polarity: As marked on Body ● Mounting position: Any		JK09E  Dimensions in inches and (millimeters)	
Maximum Ratings and Electrical Characteristics Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave ,60Hz, resistive or inductive load. For capacitive load ,derate current by 20%			
Characteristics	SYM	GF5045-150T1	Unit
Maximum Recurrent Peak Reverse Voltage	V _{RRM}	45	V
Maximum RMS Voltage	V _{RMS}	31.5	V
Maximum DC Blocking Voltage	V _{DC}	45	V
Maximum Average Forward Rectified Current @Tc=125°C	I (A _V)	30	A
Peak Forward Surge Current 8.3ms single half sine-wave super imposed on rated load (JEDEC Method)	I _{FSM}	400	A
Peak Forward Voltage Per Diode at 30A DC (Note 1)	VF	0.51	V
Maximum DC Reverse Current at Rated @TJ=25°C	I _R	0.1	mA
DC Blocking Voltage Per Diode @Tj=100°C		40	
Typical Thermal Resistance (Note2)	R _{θJC}	1.5	°C/W
Operating Junction Temperature Range	T _J	-55 to +150	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C
Junction Temperature In DC forward current without reverse bias, t ≤ 1 h (Note3)	T _J	≤200	°C
NOTES:1.300us Pulse Width, 2% Duty Cycle.			
2.Thermal Resistance Junction to case (without heatsink)			
3. Meets the Requirements of IEC 61215 bypass diode thermal test			

ZKANRUI	Specification number ZKAR2026009	Diode Product Specification
Page1,1page in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

GF6045-180T1

Photovoltaic Solar Cell Protection Schottky Diode	Bypass Diode for Solar J-Box
Features ● Low power loss, high efficiency ● High current capability, low V_F ● High surge capacity ● Guard ring for trasient protection ● For use in solarJ-box as a bypass diode ● Metal of silicon rectifier, majority carrier conduction Mechanical Data ● Polarity: Color band denotes cathode ● Mounting position: Any	RoHS COMPLIANT Package Outline Dimensions in Inches (Millimeters)

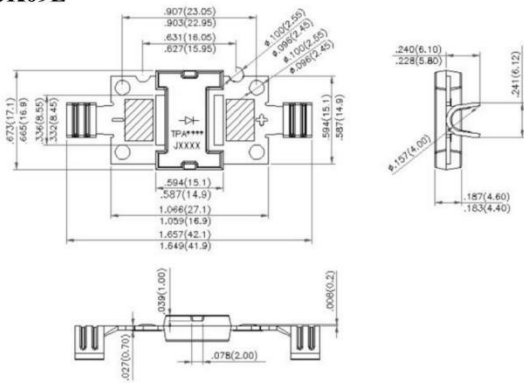
Maximum Ratings and Electrical Characteristics

Rating at 25℃ ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristics	SYM	GF6045-180T1	Unit
Maximum Repetitive Peak Reverse Voltage	VRRM	45	V
Maximum RMS Voltage	VRMS	31.5	V
Maximum DC Blocking Voltage	VDC	45	V
Maximum Average Forward Rectified Current @ Tc=125 °C	I(AV)	45	A
Peak Forward Surge Current, 8.3mS Single Half Sine-Wave, Superimposed on Rated Load (JEDEC Method)	IFSM	500	A
Peak Forward Voltage at 40A DC (Note1)	VF	0.52	V
Maximun DC Reverse Current at Rated DC Blocking Voltage	IR	0.1	mA
@TJ=25℃ @TJ=100℃		10	
Typical Thermal Resistance Junction to Case	RθJC	1	℃/W
Junction Temperature Range	TJ	-55 to+200	℃
Storage Temperature Range	TSTG	-55 to+150	℃

Notes: 1. 300uS pulse width, 2%duty cycle.
2. The typical data above is for reference only.

ZKANRUI	Specification number ZKAR2026010	Diode Product Specification
Page1,1page in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

GF6045-150T2			
Reverse Voltage - 45 Volts Forward Current - 30 Amperes		BypassDiodeModuleForPV	
Features ● Metal of silicon rectifier, majority carrier conduction ● Guard ring for transient protection ● Low power loss, high efficiency ● High current capability, low IR ● High surge capacity ● High temperature reverse characteristic is excellent ● For use in photovoltaic solar cell protection Trench Schottky rectifier	JK09E 		
		Dimensions in inches and (millimeters)	
Maximum Ratings and Electrical Characteristics Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave ,60Hz, resistive or inductive load. For capacitive load ,derate current by 20%			
Characteristics	SYM	GF6045-150T2	Unit
Maximum Recurrent Peak Reverse Voltage	V _{RRM}	45	V
Maximum RMS Voltage	V _{RMS}	31.5	V
Maximum DC Blocking Voltage	V _{DC}	45	V
Maximum Average Forward Rectified Current @Tc=125°C	I (AV)	60	A
Peak Forward Surge Current 8.3ms single half sine-wave super imposed on rated load (JEDEC Method)	I _{FSM}	400	A
Peak Forward Voltage Per Diode at 30A DC (Note 1)	V _F	0.51	V
Maximum DC Reverse Current at Rated @T _J =25°C DC Blocking Voltage Per Diode @T _J =100°C	I _R	0.2 150	mA
Typical Thermal Resistance (Note2)	R _{θJC}	1.5	°C/W
Operating Junction Temperature Range	T _J	-55 to +150	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C
Junction Temperature In DC forward current without reverse bias, t ≤ 1 h (Note3)	T _J	≤200	°C
NOTES:1.300us Pulse Width, 2% Duty Cycle. 2.Thermal Resistance Junction to case (without heatsink) 3. Meets the Requirements of IEC 61215 bypass diode thermal test			

ZKANRUI	Specification number ZKAR2026011	Diode Product Specification
Page1,1page in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

JUM4045-150T1

Photovoltaic Solar Cell Protection
Schottky Diode

Bypass Diode for Solar J-Box
Forward Current - 40 Amperes

Features

- Low power loss, high efficiency
- High current capability, low V_F
- High surge capacity
- Guard ring for transient protection
- For use in solarJ-box as a bypass diode
- Metal of silicon rectifier, majority carrier conduction

Mechanical Data

- Molded plastic body Molding compound
meets UL 94 V-0 flammability rating
- Polarity: Color band denotes cathode
- Mounting position: Any

RoHS COMPLIANT

Package Outline Dimensions in Inches (Millimeters)

Maximum Ratings and Electrical Characteristics

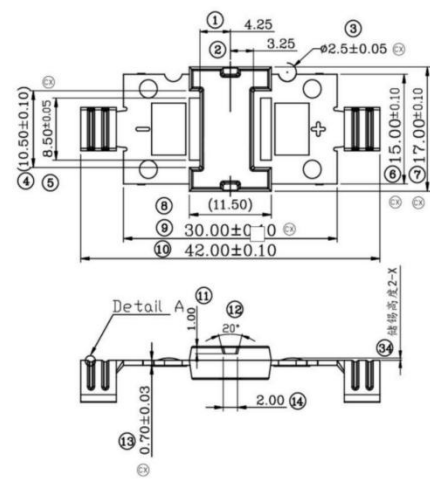
Rating at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristics	SYM	JUM4045-150T1	Unit
Maximum Repetitive Peak Reverse Voltage	VRRM	45	V
Maximum RMS Voltage	VRMS	31.5	V
Maximum DC Blocking Voltage	VDC	45	V
Maximum Average Forward Rectified Current @ Tc=125 °C	I(AV)	40	A
Peak Forward Surge Current, 8.3mS Single Half Sine-Wave, Superimposed on Rated Load (JEDEC Method)	IFSM	450	A
Peak Forward Voltage at 40A DC (Note1)	VF	0.52	V
Maximun DC Reverse Current at Rated DC Blocking Voltage	IR	0.06	mA
		15	
Typical Thermal Resistance Junction to Case	RθJC	1	°C/W
Junction Temperature Range	TJ	-55 to+200	°C
Storage Temperature Range	TSTG	-55 to+150	°C

Notes: 1. 300uS pulse width, 2%duty cycle.
2. The typical data above is for reference only.

ZKANRUI	Specification number ZKAR2026012	Diode Product Specification
Page1,1page in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

JUM5045-180T1

Photovoltaic Solar Cell Protection Schottky Diode	Bypass Diode Module For PV Forward Current - 50 Amperes
Features ● Low power loss, high efficiency ● High surge current capability ● Guardring for overvoltage protection ● High temperature reverse characteristic is excellent ● Trench Schottky Technology ● Metal of silicon rectifier, majority carrier conduction Mechanical Data ● Molded plastic body Molding compound meets UL 94 V-0 flammability rating ● Terminal: Mattle tin plated leads,solderable per JESD22-B102 ● Polarity: As marked on body Typical Applications ● Photovoltaic solar cell protection ● Switching power supplies, converters, freewheeling diodes, and reverse battery protection	  Package Outline Dimensions in Inches (Millimeters)

Maximum Ratings and Electrical Characteristics

Rating at 25℃ ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

Characteristics	SYM	JUM5045-180T1	Unit
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	45	V
Maximum RMS Voltage	V _{RMS}	31.5	V
Maximum DC Blocking Voltage	V _{DC}	45	V
Maximum Average Forward Rectified Current @ T _c =125℃	I _(AV)	50	A
Peak Forward Surge Current, 8.3mS Single Half Sine-Wave, Superimposed on Rated Load (JEDEC Method)	I _{FSM}	500	A
Peak Forward Voltage at DC Current (Note 1)	V _F	30A	V
		40A	
Maximun DC Reverse Current at Rated DC Blocking Voltage	I _R	@T _J =25℃	mA
		@T _J =100℃	
Typical Thermal Resistance Junction to Case	R _{θJC}	1	℃/W
Junction Temperature Range (Note2)	T _J	-55 to+200	℃
Storage Temperature Range	T _{STG}	-55 to+150	℃

Notes: 1. 300uS pulse width, 2%duty cycle.

2. Junction Temperature In DC forward current without reverse bias, ,t≤1 h (Fig.1). Meets the Requirements of IEC 61215 Ed. 2 bypass diode thermal test.

3. The typical data above is for reference only.

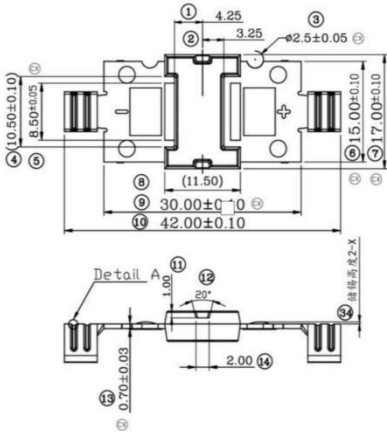
Tel:+86 0355-7199555 Email:ZKANRUI@zkanrui.cn

Corporate Office: Floor 2, Building 5, 5G Smart Innovation Park, 53 Baoyuan Road, Luzhou District, Changzhi City, Shanxi Province, China

Sales Center: Room 1107, 11/F, Guokun Huake Tower, No.345 Yanxin Road, Huishan District, Wuxi City, Jiangsu Province, China

ZKANRUI	Specification number ZKAR2026013	Diode Product Specification
Page1,1page in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

JUM6045-150T2

Photovoltaic Solar Cell Protection Schottky Diode	Bypass Diode for Solar J-Box Forward Current - 60 Amperes
Features - Low power loss, high efficiency - High current capability, low V_F - High surge capacity - Guard ring for transient protection - For use in solarJ-box as a bypass diode - Metal of silicon rectifier, majority carrier conduction Mechanical Data - Molded plastic body Molding compound meets UL 94 V-0 flammability rating - Polarity: Color band denotes cathode - Mounting position: Any	  Package Outline Dimensions in Inches (Millimeters)

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

Characteristics	SYM	JUM6045-150T2	Unit
Maximum Repetitive Peak Reverse Voltage	VRRM	45	V
Maximum RMS Voltage	VRMS	31.5	V
Maximum DC Blocking Voltage	VDC	45	V
Maximum Average Forward Rectified Current @ Tc=125 °C	I(AV)	60	A
Peak Forward Surge Current, 8.3mS Single Half Sine-Wave, Superimposed on Rated Load (JEDEC Method)	IFSM	500	A
Peak Forward Voltage at 40A DC (Note1)	VF	0.53	V
Maximum DC Reverse Current at Rated DC Blocking Voltage	IR	@Tj=25°C 0.12	mA
		@Tj=100°C 30	
Typical Thermal Resistance Junction to Case	RθJC	1	°C/W
Junction Temperature Range	TJ	-55 to+200	°C
Storage Temperature Range	TSTG	-55 to+150	°C

Notes: 1. 300uS pulse width, 2%duty cycle.

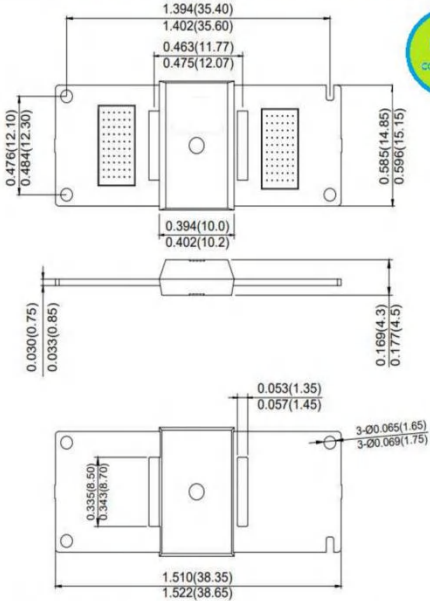
2. The typical data above is for reference only.

Tel:+86 0355-7199555 Email:ZKANRUI@zkanrui.cn

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ZKANRUI	Specification number ZKAR2026014	Diode Product Specification
Page1,1page in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

Photovoltaic Solar Cell Protection Schottky Diode		Bypass Diode Module For PV Forward Current - 60 Amperes	
Features ● Low power loss, high efficiency ● High surge current capability ● Guardring for overvoltage protection ● High temperature reverse characteristic is excellent ● Trench Schottky Technology ● Metal of silicon rectifier, majority carrier conduction Mechanical Data ● Case:QC3Q, Molded plastic body Molding compound meets UL 94 V-0 flammability rating ● Terminal: Mattle tin plated leads,solderable per JESD22-B102 ● Polarity: As marked on body ● Weight: 4.86grams(approximately) Typical Applications ● Photovoltaic solar cell protection ● Switching power supplies, converters, freewheeling diodes, and reverse battery protection		  Package Outline Dimensions in Inches (Millimeters)	
Maximum Ratings and Electrical Characteristics			
Rating at 25℃ ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.			
Characteristics	SYM	MK5045-150T2	Unit
Maximum Repetitive Peak Reverse Voltage	VRRM	45	V
Maximum RMS Voltage	VRMS	31.5	V
Maximum DC Blocking Voltage	VDC	45	V
Maximum Average Forward Rectified Current @ Tc=125℃	I(AV)	60	A
Peak Forward Surge Current, 8.3mS Single Half Sine-Wave, Superimposed on Rated Load (JEDEC Method)	IFSM	500	A
Peak Forward Voltage at 40A DC (Note 1)	VF	0.53	V
Maximun DC Reverse Current at Rated DC Blocking Voltage	IR	0.15	mA
		20	
Typical Thermal Resistance Junction to Case	RθJC	1.5	℃/W
Junction Temperature Range (Note2)	TJ	-55 to+200	℃
Storage Temperature Range	TSTG	-55 to+150	℃
Notes: 1. 300uS pulse width, 2%duty cycle. 2. Junction Temperature In DC forward current without reverse bias, ,t≤1 h (Fig.1). Meets the Requirements of IEC 61215 Ed. 2 bypass diode thermal test. 3. The typical data above is for reference only.			

ZKANRUI	Specification number ZKAR2026015	Diode Product Specification
Page1,1page in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

MK5045

Photovoltaic Solar Cell Protection Schottky Diode

Features

Low power loss, high efficiency

High current capability, low V_F

High surge capacity

Guard ring for trasient protection

For use in solarJ-box as a bypass diode

Metal of silicon rectifier, majority carrier conduction

Mechanical Data

Mounting position: Any

Polarity: Color band denotes cathode

MoldingcompoundmeetsUL94V-0

flammabilityrating

Case:JA005, Moldedplasticbody

MoldingcompoundmeetsUL94V-0 flammabilityrating

Terminals:Tinplatedleads,solderable perJESD22-B102

Polarity:Asmarkedonbody

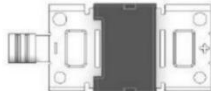
Bypass Diode for Solar J-Box

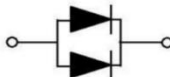
Case外形: JA005

正极产品:



负极产品:





MarkingCode: MK5045

Package Outline Dimensions in Inches (Millimeters)

Maximum Ratings and Electrical Characteristics

Rating at 25℃ ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

Characteristics	SYM	MK5045	Unit
Maximum Repetitive Peak Reverse Voltage	VRRM	45	V
Maximum Average Forward Rectified Current @ Tc=125 °C	I(AV)	50	A
Typical Thermal Resistance Junction to Case	RθJC	1	℃/W
Peak Forward Surge Current, 8.3mS Single Half Sine-Wave, Superimposed on Rated Load (JEDEC Method)	IFSM	700	A
Junction Temperature Range	TJ	-55 to+200	℃
Storage Temperature Range	TSTG	-55 to+200	℃

Notes: 1. 300uS pulse width, 2%duty cycle.

2. The typical data above is for reference only.

ZKANRUI	Specification number ZKAR2026016	Diode Product Specification
Page1,1page in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

40SQ045

Photovoltaic Solar Cell Protection
Schottky Diode

Features

- Low power loss, high efficiency
- High current capability, low V_F
- High surge capacity
- Guard ring for trasient protection
- For use in solarJ-box as a bypass diode
- Metal of silicon rectifier, majority carrier conduction

Mechanical Data

- Polarity: Color band denotes cathode
- Mounting position: Any

Package Outline Dimensions in Inches (Millimeters)

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristics	SYM	40SQ045	Unit
Maximum Repetitive Peak Reverse Voltage	VRRM	45	V
Maximum RMS Voltage	VRMS	31.5	V
Maximum DC Blocking Voltage	VDC	45	V
Maximum Average Forward Rectified Current @ Tc=125 °C	IAV	40	A
Peak Forward Surge Current, 8.3mS Single Half Sine-Wave, Superimposed on Rated Load (JEDEC Method)	IFSM	500	A
Peak Forward Voltage at 40A DC (Note1)	VF	0.5	V
Maximun DC Reverse Current at Rated DC Blocking Voltage	IR	0.1	mA
		20	
Typical Thermal Resistance Junction to Case	RθJC	1.5	°C/W
Junction Temperature Range	TJ	-55 to+200	°C
Storage Temperature Range	TSTG	-55 to+150	°C

Notes: 1. 300uS pulse width, 2%duty cycle.
2. The typical data above is for reference only.

ZKANRUI	Specification number ZKAR2026017	Diode Product Specification
Page1,1page in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

30SQ045

Photovoltaic Solar Cell Protection
Schottky Diode

Bypass Diode for Solar J-Box
Forward Current - 30 Amperes

Features

- Low power loss, high efficiency
- High current capability, low V_F
- High surge capacity
- Guard ring for trasient protection
- For use in solarJ-box as a bypass diode
- Metal of silicon rectifier, majority carrier conduction

Mechanical Data

- Polarity: Color band denotes cathode
- Mounting position: Any

Package Outline Dimensions in Inches (Millimeters)

Maximum Ratings and Electrical Characteristics

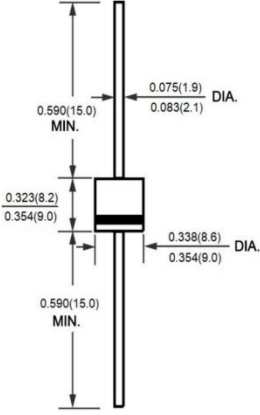
Rating at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristics	SYM	30SQ045-SL	Unit
Maximum Repetitive Peak Reverse Voltage	VRRM	50	V
Maximum RMS Voltage	VRMS	36	V
Maximum DC Blocking Voltage	VDC	50	V
Maximum Average Forward Rectified Current @ Tc=125 °C	I(AV)	30	A
Peak Forward Surge Current, 8.3mS Single Half Sine-Wave, Superimposed on Rated Load (JEDEC Method)	IFSM	300	A
Peak Forward Voltage at 25A DC (Note1)	VF	0.5	V
Maximun DC Reverse Current at Rated DC Blocking Voltage	IR	@50V & TJ=25°C	mA
		@40V & TJ=100°	
Typical Thermal Resistance Junction to Case	RθJC	1.5	°C/W
Junction Temperature Range	TJ	-55 to+200	°C
Storage Temperature Range	TSTG	-55 to+150	°C
ESD	ESD	25	KV

Notes: 1. 300uS pulse width, 2%duty cycle.
2. The typical data above is for reference only.

ZKANRUI	Specification number ZKAR2026018	Diode Product Specification
Page1,1page in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

35SQ045

Photovoltaic Solar Cell Protection Schottky Diode	Bypass Diode for Solar J-Box Forward Current - 35 Amperes
Features - Low power loss, high efficiency - High current capability, low V_F - High surge capacity - Guard ring for transient protection - For use in solarJ-box as a bypass diode - Metal of silicon rectifier, majority carrier conduction Mechanical Data - Polarity: Color band denotes cathode - Mounting position: Any	   Package Outline Dimensions in Inches (Millimeters)

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

Characteristics	SYM	35SQ045	Unit
Maximum Repetitive Peak Reverse Voltage	VRRM	45	V
Maximum RMS Voltage	VRMS	31.5	V
Maximum DC Blocking Voltage	VDC	45	V
Maximum Average Forward Rectified Current @ Tc=125 °C	I(AV)	35	A
Peak Forward Surge Current, 8.3mS Single Half Sine-Wave, Superimposed on Rated Load (JEDEC Method)	IFSM	450	A
Peak Forward Voltage at 35A DC (Note1)	VF	0.5	V
Maximun DC Reverse Current at Rated DC Blocking Voltage	IR	0.08	mA
@Tj=25°C		15	
@Tj=100°C			
Typical Thermal Resistance Junction to Case	RθJC	1.5	°C/W
Junction Temperature Range	TJ	-55 to+200	°C
Storage Temperature Range	TSTG	-55 to+150	°C

Notes: 1. 300uS pulse width, 2%duty cycle.

2. The typical data above is for reference only.

Tel:+86 0355-7199555 Email:ZKANRUI@zkanrui.cn

Corporate Office: Floor 2, Building 5, 5G Smart Innovation Park, 53 Baoyuan Road, Luzhou District, Changzhi City, Shanxi Province, China

Sales Center: Room 1107, 11/F, Guokun Huake Tower, No.345 Yanxin Road, Huishan District, Wuxi City, Jiangsu Province, China

ZKANRUI	specification number ZKAR2026001	Silicone Parts Specification
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Dust Cap

Product Images:



ZKANRUI	specification number ZKAR2026001	Silicone Parts Specification
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ZKANRUI	specification number ZKAR2026001	Silicone Parts Specification
Page 3,3 pages in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

Product Description:

The dust cap provides excellent dustproof and waterproof performance. It is suitable for various types of photovoltaic connectors. It provides sealing function under specified temperature, pressure, and in different liquid and gas media, whether in static or moving conditions. It delivers reliable sealing performance in both static and dynamic environments.

Main technical specifications

Items	Performance Specification
Hardness	70±5
Tensile Strength	≥6.0Mpa
Elongation at Break	≥200%

Note: This product complies with ROHS environmental requirements; and meets UL157 / UL50E certification (Yellow Card No.: MH63781).

Please be sure to follow the storage instructions below. Failure to do so may result in the product not meeting the specified technical requirements, and may also cause potential hazards such as personal injury or product damage.

1. Sealing parts shall be stored in a warehouse at a temperature of -35 °C to 150 °C, with relative humidity not exceeding 80%. The warehouse must be free from any harmful gases, flammable or explosive materials, or corrosive chemicals. The products must be kept away from heat sources.

2. Under compliance with this document, the manufacturer guarantees that the product will meet the application requirements for 5 years from the date of manufacture. Products that have exceeded the storage period shall be reinspected, and may only be shipped after passing the inspection.

Transportation Notice

1. During loading/unloading and transfer storage, proper care shall be taken. If stacking of containers is required, it shall be done in a manner that avoids damage to the containers at the bottom of the stack or the products contained therein due to excessive stacking height or weight.

2. During transportation, the products shall be protected from direct sunlight, rain, and snow. Contact with oils, acids, alkalis, or other chemicals that may degrade product quality is strictly prohibited.

ZKANRUI	specification number ZKAR2026002	Silicone Parts Specification
Page 1,3 pages in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

O Sealing Ring

Product Image :

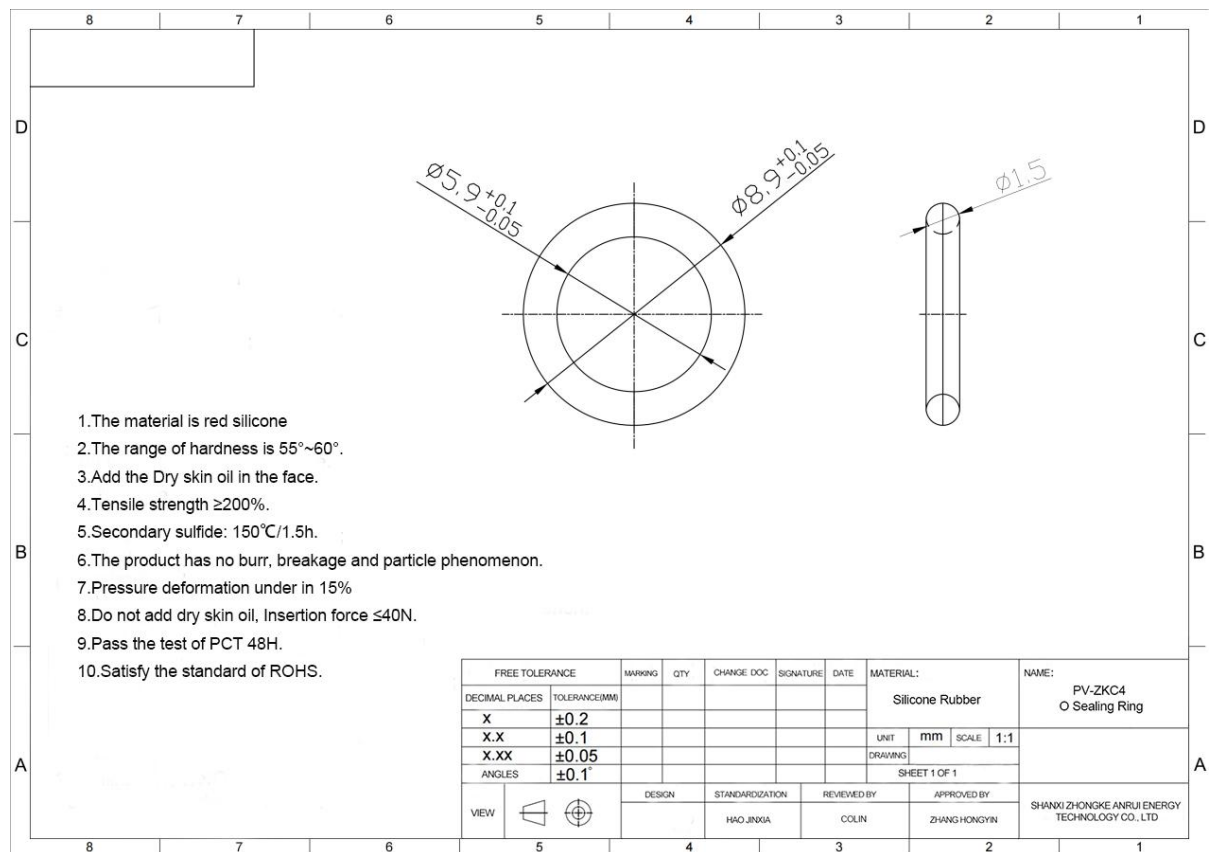


Product Description:

The O sealing ring is suitable for installation on various types of mechanical equipment. It provides sealing function under specified temperature and pressure conditions, as well as in different liquid and gas media, whether in static or moving states. It delivers excellent sealing performance in both static and dynamic environments. It is suitable for static sealing applications, and also excels in dynamic environments where relative motion between components exists.

ZKANRUI	specification number ZKAR2026002	Silicone Parts Specification
Page 2,3 pages in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

Product Dimensional Drawing:



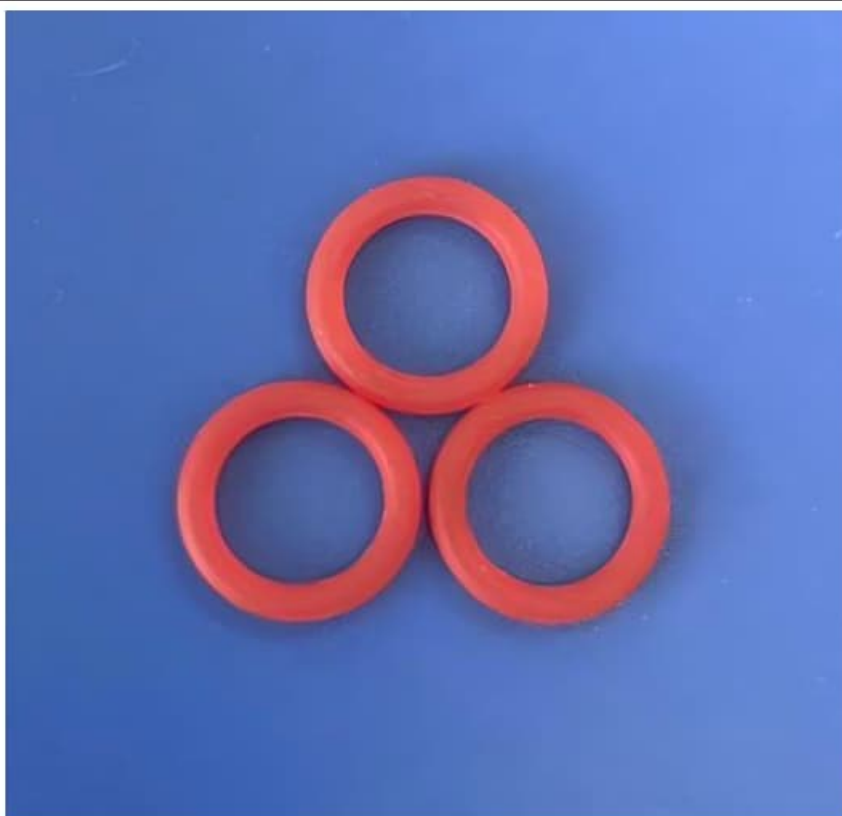
ZKANRUI	specification number ZKAR2026002	Silicone Parts Specification
Page 3,3 pages in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

Main technical specifications	
Items	Performance Specifications
Color	Brown
Material	Silicone Rubber
Hardness	55–60 Shore A
Tensile Strength	≥7Mpa
Elongation at Break	≥300%
Note: This product complies with ROHS environmental requirements and is certified under UL157 / UL50E (Yellow Card No.:MH63781). The following storage conditions must be strictly followed; otherwise, the technical specifications may fail to meet the standard requirements, and potential hazards such as personal injury or product damage may occur. 1.Seals shall be stored in a warehouse at a temperature of -20°C to 50°C, with relative humidity not exceeding 80%. The warehouse must be free from harmful gases, flammable materials, and corrosive chemicals, and shall be kept away from heat sources. 2.Under compliance with this document, the manufacturer guarantees that the product will meet service requirements for 5 years from the date of manufacture. Products exceeding the storage period shall be re-inspected and can only be shipped after passing the inspection. 3.During handling, intermediate storage, and transport, proper care shall be taken. If stacking of containers is required, care shall be taken to avoid damaging containers at the bottom of the stack or the products inside due to excessive stacking height or weight. 4.During transportation, the products shall be protected from direct sunlight, rain, and snow. Contact with oil, acids, alkalis, or any chemical substances that may impair product quality is strictly prohibited.	

ZKANRUI	specification Number ZKAR2026002	Silicone Parts Specification
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O Sealing Ring

Product Image :

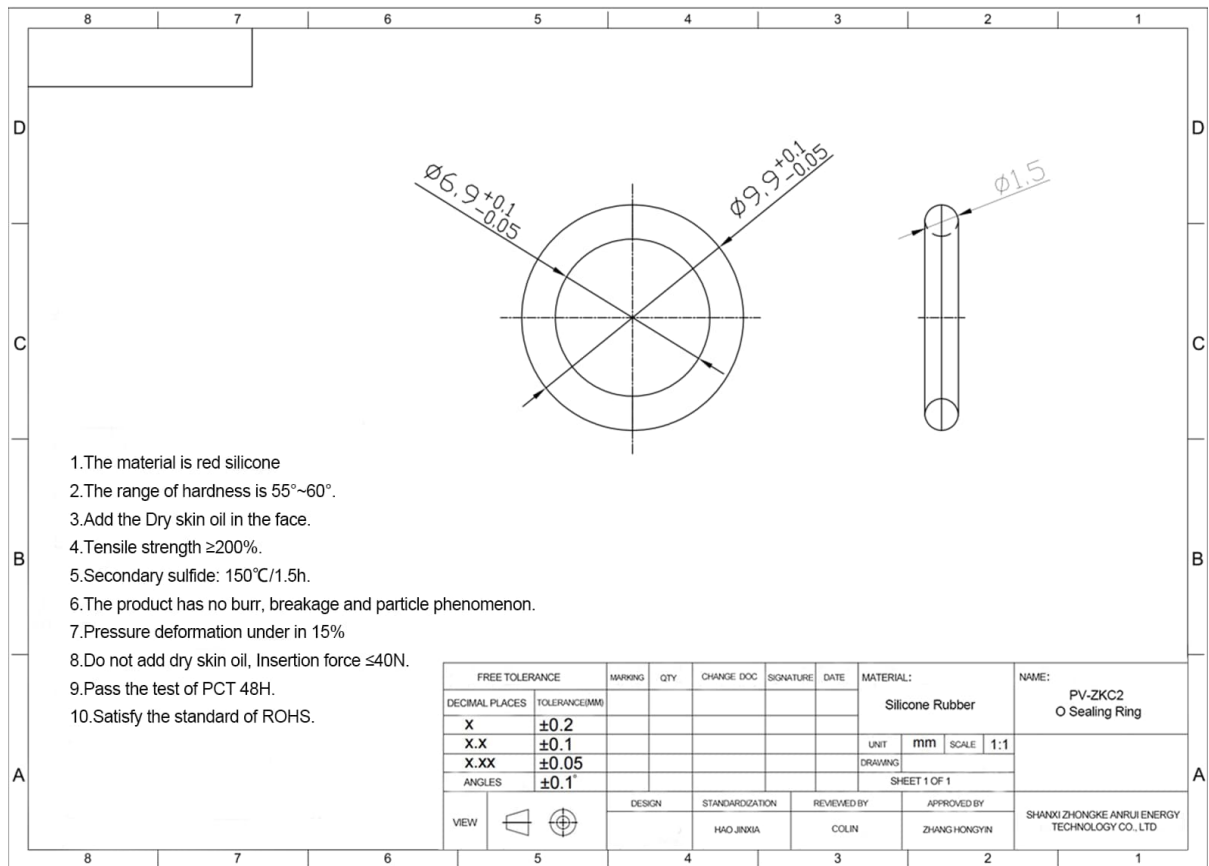


Product Description:

The O sealing ring is suitable for installation on various types of mechanical equipment. It provides sealing function under specified temperature and pressure conditions, as well as in different liquid and gas media, whether in static or moving states. It delivers excellent sealing performance in both static and dynamic environments. It is suitable for static sealing applications, and also excels in dynamic environments where relative motion between components exists.

ZKANRUI	specification number ZKAR2026002	Silicone Parts Specification
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Product Dimensional Drawing:



ZKANRUI	specification number ZKAR2026002	Silicone Parts Specification
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Main technical specifications	
Items	Performance Specifications
Color	Vermilion
Material	Silicone Rubber
Hardness	55–60 Shore A
Tensile Strength	≥7Mpa
Elongation at Break	≥300%
Note: This product complies with ROHS environmental requirements and is certified under UL157 / UL50E (Yellow Card No.:MH63781). The following storage conditions must be strictly followed; otherwise, the technical specifications may fail to meet the standard requirements, and potential hazards such as personal injury or product damage may occur. 1.Seals shall be stored in a warehouse at a temperature of -20°C to 50°C, with relative humidity not exceeding 80%. The warehouse must be free from harmful gases, flammable materials, and corrosive chemicals, and shall be kept away from heat sources. 2.Under compliance with this document, the manufacturer guarantees that the product will meet service requirements for 5 years from the date of manufacture. Products exceeding the storage period shall be re-inspected and can only be shipped after passing the inspection. 3.During handling, intermediate storage, and transport, proper care shall be taken. If stacking of containers is required, care shall be taken to avoid damaging containers at the bottom of the stack or the products inside due to excessive stacking height or weight. 4.During transportation, the products shall be protected from direct sunlight, rain, and snow. Contact with oil, acids, alkalis, or any chemical substances that may impair product quality is strictly prohibited.	

ZKANRUI	specification Number ZKAR2026002	Silicone Parts Specification
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PV-ZKC2 Sealing Plug

Product Image :

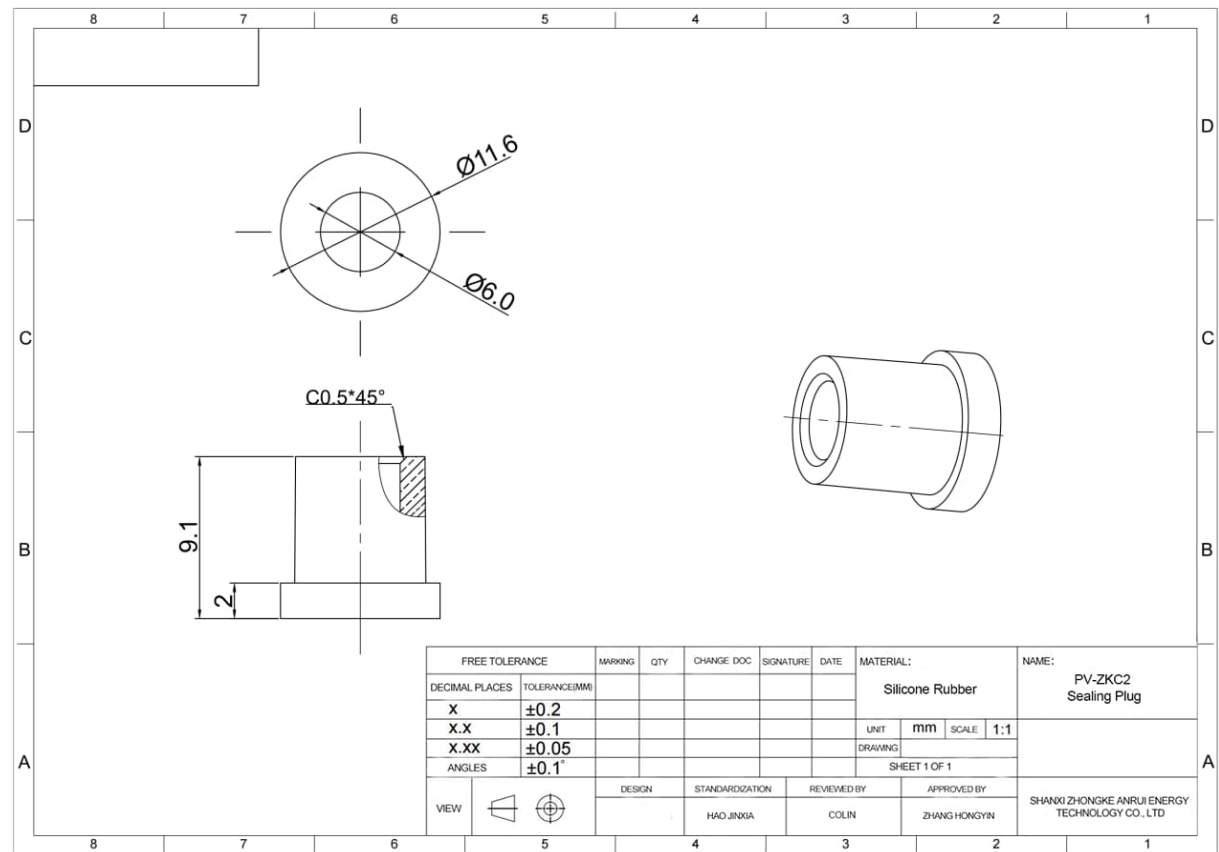


Product Description:

The Sealing Plug is suitable for installation on various types of mechanical equipment. It provides sealing function under specified temperature and pressure conditions, as well as in different liquid and gas media, whether in static or moving states. It delivers excellent sealing performance in both static and dynamic environments. It is suitable for static sealing applications, and also excels in dynamic environments where relative motion between components exists.

ZKANRUI	specification number ZKAR2026002	Silicone Parts Specification
Page 2,3 pages in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

Product Dimensional Drawing:



ZKANRUI	specification number ZKAR2026002	Silicone Parts Specification
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Main technical specifications	
Items	Performance Specifications
Color	Black
Material	Silicone Rubber
Hardness	50–55 Shore A
Tensile Strength	≥7Mpa
Elongation at Break	≥300%
Note: This product complies with ROHS environmental requirements and is certified under UL157 / UL50E (Yellow Card No.:MH63781). The following storage conditions must be strictly followed; otherwise, the technical specifications may fail to meet the standard requirements, and potential hazards such as personal injury or product damage may occur. 1.Seals shall be stored in a warehouse at a temperature of -20°C to 50°C, with relative humidity not exceeding 80%. The warehouse must be free from harmful gases, flammable materials, and corrosive chemicals, and shall be kept away from heat sources. 2.Under compliance with this document, the manufacturer guarantees that the product will meet service requirements for 5 years from the date of manufacture. Products exceeding the storage period shall be re-inspected and can only be shipped after passing the inspection. 3.During handling, intermediate storage, and transport, proper care shall be taken. If stacking of containers is required, care shall be taken to avoid damaging containers at the bottom of the stack or the products inside due to excessive stacking height or weight. 4.During transportation, the products shall be protected from direct sunlight, rain, and snow. Contact with oil, acids, alkalis, or any chemical substances that may impair product quality is strictly prohibited.	

ZKANRUI	specification Number ZKAR2026002	Silicone Parts Specification
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PV-ZKC4 Sealing Plug

Product Image :

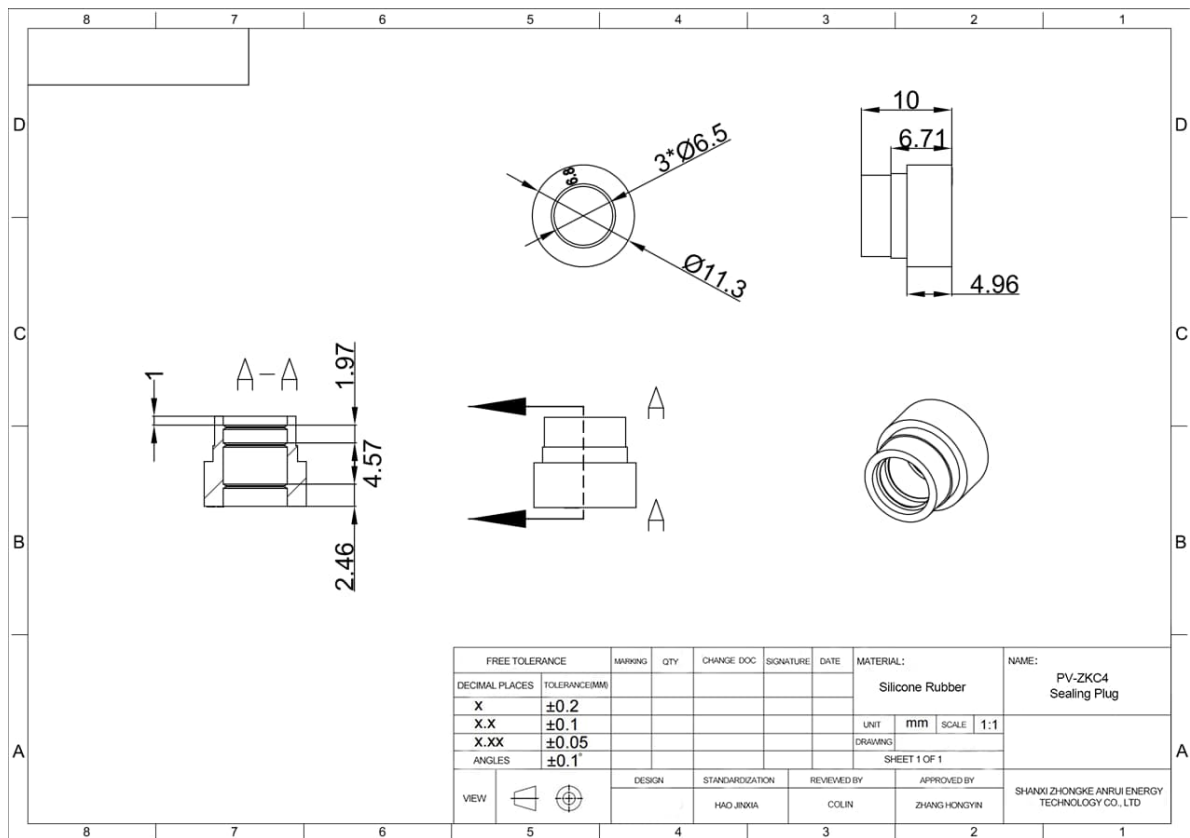


Product Description:

The Sealing Plug is suitable for installation on various types of mechanical equipment. It provides sealing function under specified temperature and pressure conditions, as well as in different liquid and gas media, whether in static or moving states. It delivers excellent sealing performance in both static and dynamic environments. It is suitable for static sealing applications, and also excels in dynamic environments where relative motion between components exists.

ZKANRUI	specification number ZKAR2026002	Silicone Parts Specification
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Product Dimensional Drawing:



ZKANRUI	specification number ZKAR2026002	Silicone Parts Specification
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Main technical specifications	
Items	Performance Specifications
Color	Black
Material	Silicone Rubber
Hardness	50–55 Shore A
Tensile Strength	≥7Mpa
Elongation at Break	≥300%
Note: This product complies with ROHS environmental requirements and is certified under UL157 / UL50E (Yellow Card No.:MH63781). The following storage conditions must be strictly followed; otherwise, the technical specifications may fail to meet the standard requirements, and potential hazards such as personal injury or product damage may occur. 1.Seals shall be stored in a warehouse at a temperature of -20°C to 50°C, with relative humidity not exceeding 80%. The warehouse must be free from harmful gases, flammable materials, and corrosive chemicals, and shall be kept away from heat sources. 2.Under compliance with this document, the manufacturer guarantees that the product will meet service requirements for 5 years from the date of manufacture. Products exceeding the storage period shall be re-inspected and can only be shipped after passing the inspection. 3.During handling, intermediate storage, and transport, proper care shall be taken. If stacking of containers is required, care shall be taken to avoid damaging containers at the bottom of the stack or the products inside due to excessive stacking height or weight. 4.During transportation, the products shall be protected from direct sunlight, rain, and snow. Contact with oil, acids, alkalis, or any chemical substances that may impair product quality is strictly prohibited.	

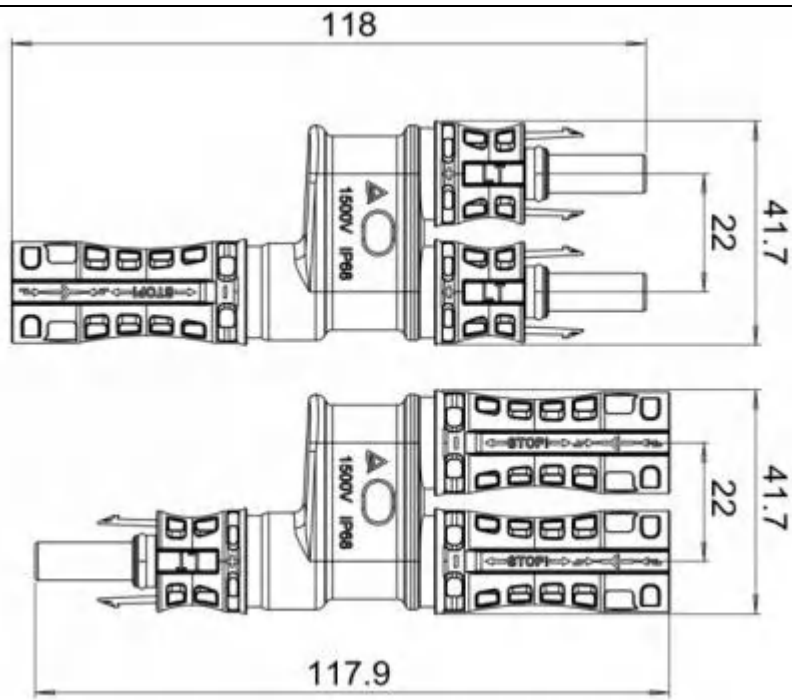
ZKANRUI	specification number ZKAR2026004	Interconnect System Connector Product Specification
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PV-LT2-A

Structural drawing:



Structural dimensions:



ZKANRUI	specification number ZKAR2026004	Interconnect System Connector Product Specification
Page 2,2 page in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.
Main Technical Parameters :		
No.	Performance Item	Performance Parameter / Requirement
1	Insulation Material	PPO
2	Contact Material	Copper, tin-plated
3	Rated Current	50A
4	Rated Voltage	1500V
5	Test Voltage	16KV
6	Contact Resistance	≤0.5mΩ
7	Degree of protection	IP68
8	Operating Temperature	-40℃ ~ +85℃
9	Safety Class	II
10	Flame Retardant Ratin	UL94-V0

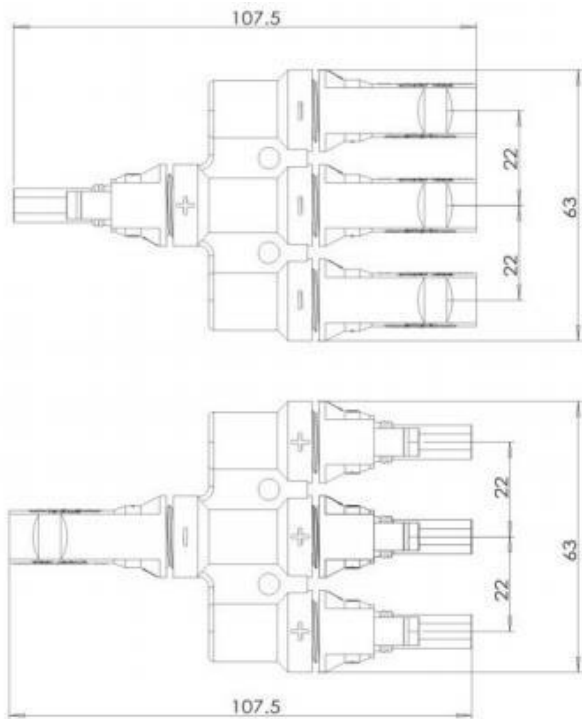
	specification number ZKAR2026005	Interconnect System Connector Product Specification
Page 1,2 page in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

PV-LT3

Structural drawing:



Structural dimensions:



ZKANRUI	specification number ZKAR2026005	Interconnect System Connector Product Specification
Page 2,2 page in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.
Main Technical Parameters:		
No.	Performance Item	Performance Parameter / Requirement
1	Insulation Material	PPO
2	Contact Material	Copper, tin-plated
3	Rated Current	50A
4	Rated Voltage	1500V
5	Test Voltage	16KV
6	Contact Resistance	≤0.5mΩ
7	Degree of protection	IP68
8	Operating Temperature	-40℃ ~ +85℃
9	Safety Class	II
10	Flame Retardant Ratin	UL94-V0

ZKANRUI	specification number ZKAR2026006	Interconnect System Connector Product Specification
Page 1,2 page in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

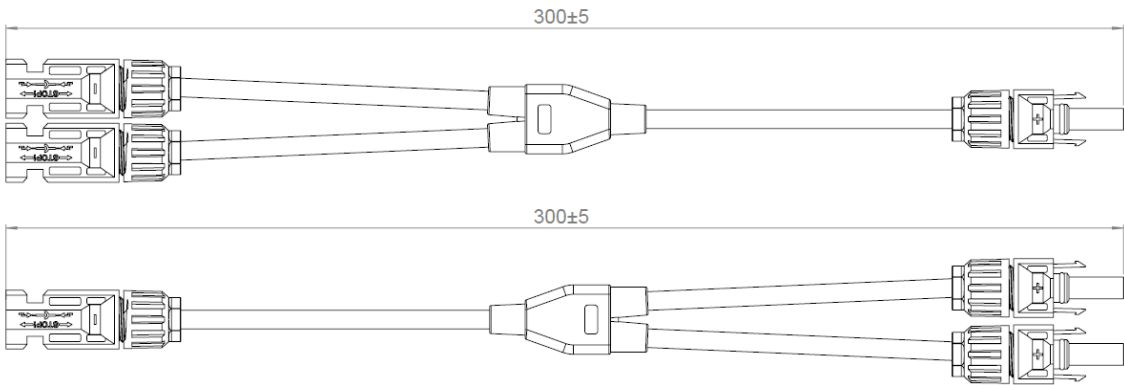
PV-LTY2

Structural drawing:



No.	Item / Spec	Qty	Remarks
1	PV-LTY2-A	1	2 negative, 1 positive
2	PV-LTY2-B	1	2 positive, 1 negative

Structural dimensions:

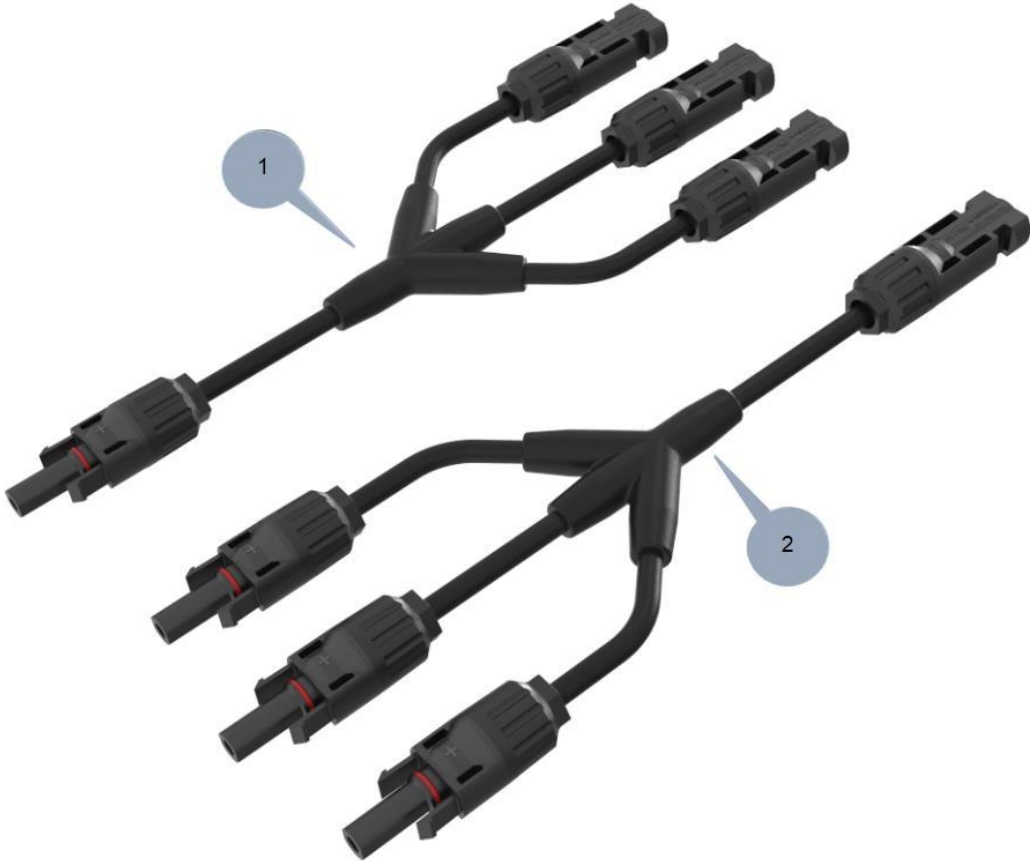


ZKANRUI	specification number ZKAR2026006	Interconnect System Connector Product Specification
Page 2,2 page in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.
Main Technical Parameters :		
No.	Performance Item	Performance Parameter / Requirement
1	Rated Voltage	1500V
2	Rated Current	30A
3	Degree of protection	IP68
4	Safety Class	Class II
5	Application Level	ClassA
6	Operating Temperature	-40°C ~ +85°C
7	Connector Interlocking Force	≥89N
8	Low-Temperature Mechanical Stability	After being subjected to 4 impacts of 1J each on the connector at -40°C± 2°C for 5 hours, the connector shall show no damage.
9	Withstand Voltage	6KV
10	Environmental Test	1)After 1000 hours of damp heat aging test at 85°C and 85% relative humidity, the connector performance shall still meet the requirements. 2)After 200 cycles (total 200 hours) of high and low temperature cycling test between 80°C and -40°C, the connector performance shall still meet the requirements.
11	Connector Mating Cycles	≥ 100 times
12	Connector Contact Resistance	≤0.5mΩ
13	Appearance	Marking: A) Product model B) Output terminal polarity C) Electrical connector certification mark Molding: A) No flash or burrs B) No contamination or oil stains C) No sink marks or deformation

ZKANRUI	specification number ZKAR2026002	Interconnect System Connector Product Specification
Page 1,3 page in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

PV-LTY3

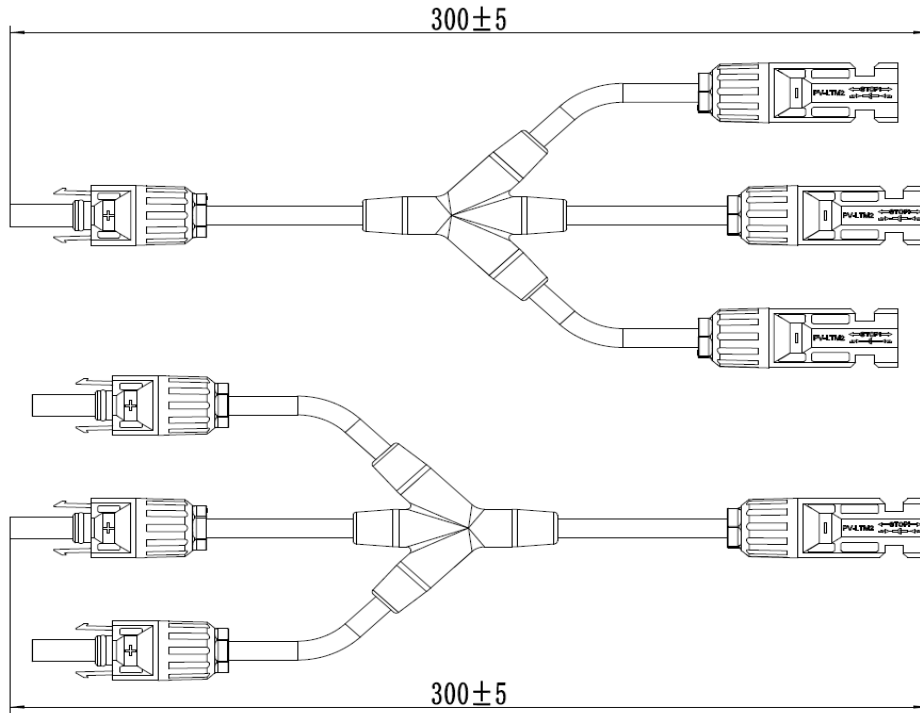
Structural drawing:



No.	Item / Spec	Qty	Remarks
1	PV-LTY3-A	1	3 negative, 1 positive
2	PV-LTY3-B	1	3 positive, 1 negative

ZKANRUI	specification number ZKAR2026002	Interconnect System Connector Product Specification
Page 2,3 page in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.

Structural dimensions:



Main Technical Parameters:		
No.	Performance Item	Performance Parameter / Requirement
1	Rated Voltage	1500V
2	Rated Current	30A
3	Degree of protection	IP68
4	Safety Class	Class II
5	Application Level	ClassA
6	Operating Temperature	-40°C ~ +85°C
7	Connector Interlocking Force	≥89N
8	Low-Temperature Mechanical Stability	After being subjected to 4 impacts of 1J each on the connector at -40°C± 2°C for 5 hours, the connector shall show no damage.
9	Withstand Voltage	6KV

ZKANRUI	specification number ZKAR2026002	Interconnect System Connector Product Specification
Page 3,3 page in total	Revision A0	Shanxi Zhongke Anrui Energy Technology Co., Ltd.
10	Environmental Test	A) After 1000 hours of damp heat aging test at 85°C and 85% relative humidity, the connector performance shall still meet the requirements. B) After 200 cycles (total 200 hours) of high and low temperature cycling test between 80°C and -40°C, the connector performance shall still meet the requirements.
11	Connector Mating Cycles	≥100 times
12	Connector Contact Resistance	≤0.5mΩ
13	Appearance	Marking: A) Product model B) Output terminal polarity C) Electrical connector certification mark Molding: A) No flash or burrs B) No contamination or oil stains C) No sink marks or deformation

AFTER-SALES SERVICE COMMITMENT

Our laboratory is equipped with a comprehensive range of reliability testing and inspection equipment, covering 12 critical reliability test items. Our facilities include Copper Hardness Testers, X-Ray inspection systems, C-SAM (Scanning Acoustic Microscopy), and Hazardous Substance Detectors, ensuring thorough material analysis and product integrity.



Our goal is to provide customers with high-quality products complemented by efficient and attentive after-sales support. To address specific customer needs, we offer responsive service via phone, email, WhatsApp, and LinkedIn. When on-site assistance is required, we deploy our engineers promptly to ensure issues are resolved within the shortest possible time.

I. Training Services

- Product Analysis: Detailed explanation of the product's internal structure, working principles, and technical parameters.
- Operation Procedure Demonstration: Comprehensive demonstration of standard and efficient operation steps, along with practical tips.
- Daily Maintenance Guidance: Instructions on regular cleaning and upkeep to extend the product's service life.

- Fault Identification and Diagnosis: Assistance in recognizing common fault symptoms and guidance on preliminary troubleshooting methods.
- Basic Repair Techniques: Explanation of simple repairs that customers can perform independently, along with instructions on using relevant tools.
- Safety Instructions: Emphasis on safety protocols during product usage and key points for preventing various potential risks.
- Customer Case Studies: Sharing real-life examples to help customers better understand how to handle various issues.
- Q&A Session: Addressing customer questions and facilitating experience sharing and communication among users.

II. After-Sales Service

- Quick Response: Upon receiving a customer complaint or request, we will respond within 2 hours to understand the details of the issue and provide feedback.

III. Warranty Service

- Warranty Period: All provided photovoltaic junction boxes come with a 25-year quality warranty. The warranty period commences from the date of purchase.
- Warranty Coverage: We warrant that under normal usage conditions, the photovoltaic junction boxes shall be free from defects in material and workmanship, ensuring normal and stable operation. The products shall possess good waterproof, dustproof, insulation, and conductive properties, with all specifications conforming to relevant industry standards and the technical requirements agreed upon by both parties.

IV. Value-Added Services

- On the 7th day after product purchase, our sales representative will call you to follow up on the actual usage of the product.
- On the 15th day after product purchase, our sales representative will contact you via online communication tools to address any potential issues you may encounter during use.
- On the 30th day after product purchase, our sales representative will call you again to confirm whether you are completely satisfied with your product experience.
- Thereafter, our sales representative will conduct regular follow-ups every 3 months via phone or online communication tools to provide necessary assistance and support.
- We offer technical consultation and guidance services related to product usage. You can contact us at any time via phone, email, or online communication channels.
- If needed, we will provide free product usage training to help you gain a deeper understanding and proficient use of our products.



**ZKANRUI — Sincerely invite you to cooperate with us to
create the brilliance future.**

ZKANRUI, Your Trusted Partner! ! !

Chairman:

A handwritten signature in black ink, appearing to be 'Jing' or similar, written in a stylized, cursive manner.



ZKANRUI

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