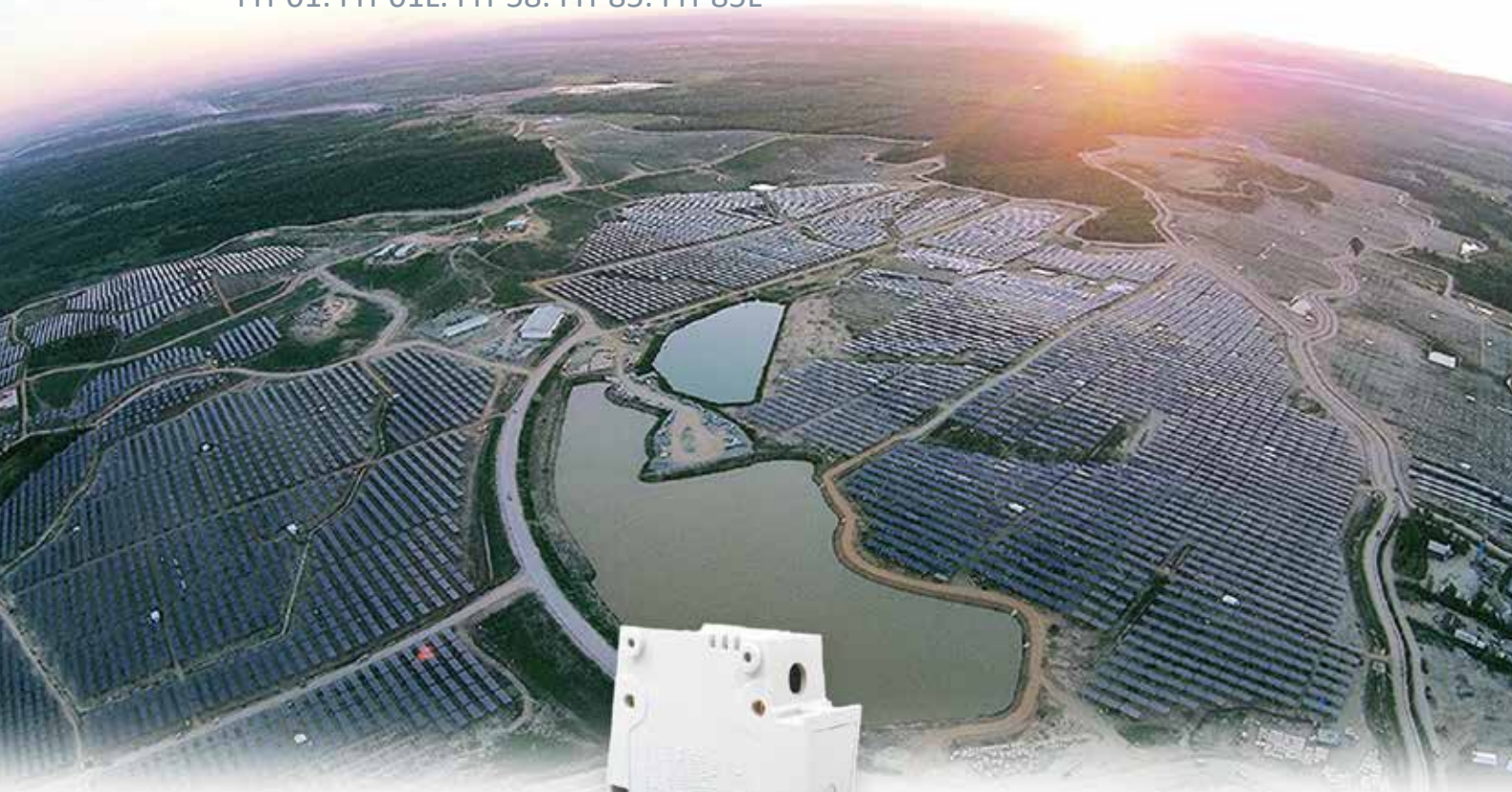




gPV fuse & holder

gPV-38. gPV-38H. gPV-58. gPV-85. gPV-85D.gPV-85 barrel type
FH-01. FH-01L. FH-58. FH-85. FH-85L



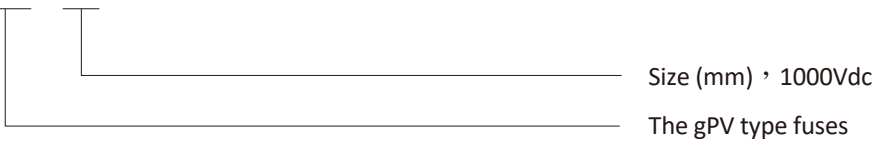
note: subject to change without any notice, JDA pay no responsibility



gPV-38

Select Code

gPV - 38



Application

The gPV type fuses are suitable for lines with rated DC voltage up to 1000V/1100V and rated current up to 32A. It's provide short-circuit protection for

- connected in series and parallel with photovoltaic panels and batteries
- the charging and converter system
- photovoltaic power plants, inverter and rectifier systems
- photovoltaic power generation system surge current

rated breaking capacity up to 33kA.

It's comply with China national standard IEC60269-6.

Normal working conditions

- The effect of current

The upper limit of ambient air temperature should not exceed 90°C ; the lower limit of ambient air temperature should not be lower than -50°C ; the altitude of the installation site should not exceed 2000m (if you want to exceed this 2000m, you need to indicate the requirements, and the company can design and develop according to customer requirements).

PV fuse link derating table for installation

Installation altitude (m)	Percentage of current derating (A)	Percentage of Insulation performance derating (V)
2000	100%	100%
3000	95%	90%
4000	90%	80%
5000	85%	70%

For example : the rated current is 18A and the installation site altitude is 5000m, the actual selection is $18 \times 85\% \approx 15.3A$.

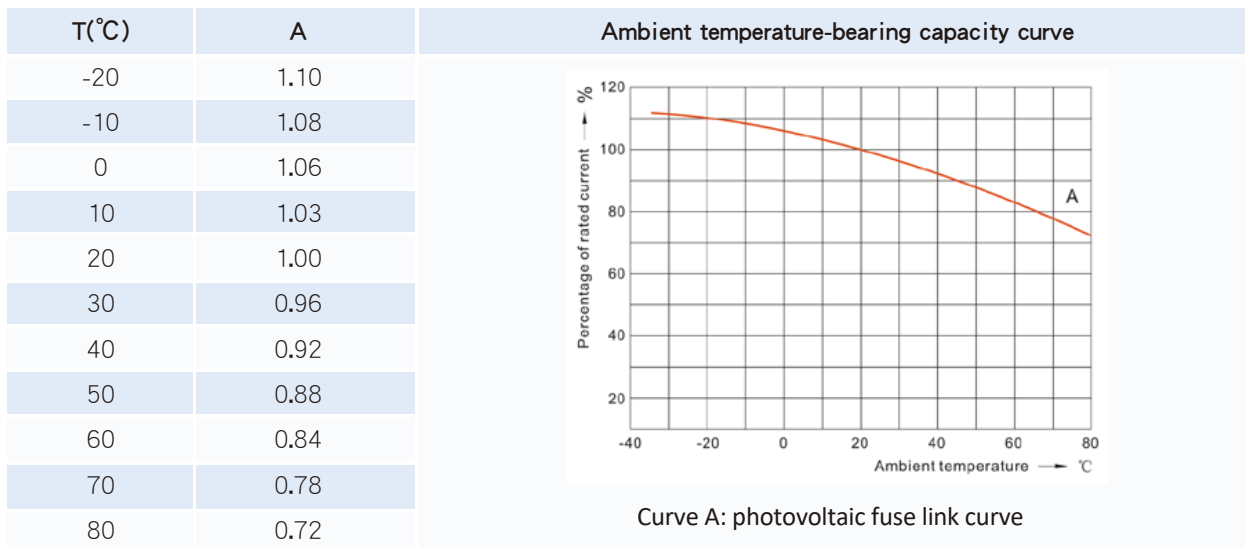
- The effect of Voltage

The rated voltage of photovoltaic fuses does not need to be derated for installation altitudes not exceeding 5000m, but it is affected by air pressure on the power frequency withstand voltage and insulation performance to a certain extent. The test voltage of DC 1001-1500V is 3820V, and Our products reach at least 6000V, so here is no need to consider.



● The effect of temperature

The following figure shows a typical curve of the influence of ambient temperature on current carrying capacity:



For example : In some applications, the ambient temperature is 20°C, and the rated current of the photovoltaic (gPV type) fuse is selected as 63A. Now, the above-mentioned fuse is often used in a high temperature environment of 70°C , then the fuse must be derated. The environmental bearing capacity curve A in the figure shows that the percentage of the rated operating value at 70°C is 0.78, that is to say, the rated current value of the fuse should be reselected:

$$I'_N = \frac{63A}{0.78} = 80.77A$$

Choose 80A according to the standard current level of the fuse

Use category

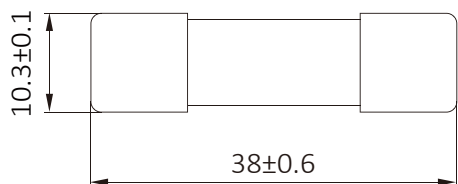
"gPV" refers to a DC fuse with a full range of breaking capacity for overcurrent protection of solar photovoltaic systems.

Structural features

The variable cross-section melt made of silver flakes is encapsulated in a high-strength melt tube. The melt tube is filled with chemically treated high-purity quartz sand and special treatment chemicals as the arc extinguishing medium. The welding and the contacts are firmly electrically connected.

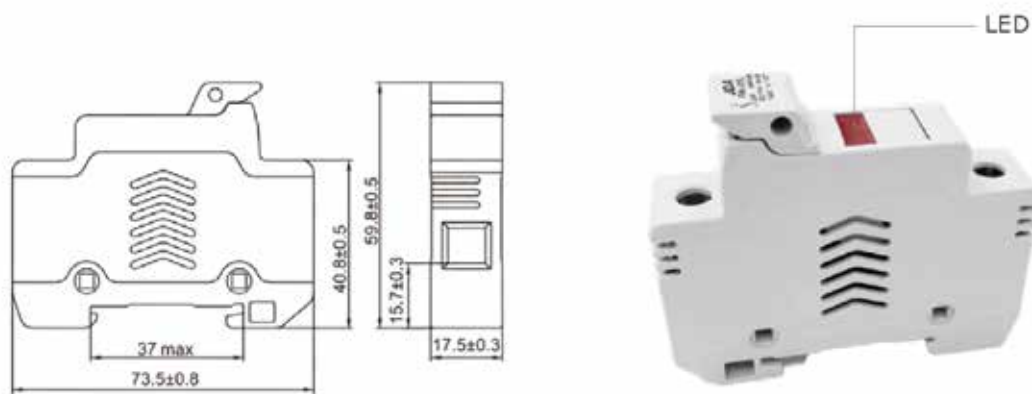


The main technical parameters



▲ figure 1

Fuse type	Rated Voltage (V)	Rated Current (A)	Dimensions/Size (mm)		Dissipated power (W)
			Figure No.	D X L	
gPV					
gPV-38	DC1000V DC1100V	1、2、3、4、5、6、8、10、 12、15、16、20、25、30、32	1	10×38	≤4.5



▲ figure 2

Fuse base model No.	Equipped with fuse size	Rated Voltage	Rated Current	Figure no.	Dimensions/Size (mm)	Dissipated power(W)
FH-01	10×38	1000Vdc 1100Vdc	32A	2	figure 2 (without LED)	4.5W
FH-01L	10×38	1000Vdc 1100Vdc	32A	2	figure 2	4.5W



Fuse cold resistance and power dissipation

Serial number	Rated current (A)	Pre-arcing I ² t	Total I ² t	1In (W)
1	1	1.1	3.9	1.30
2	2	1.5	5.2	1.36
3	3	2.4	8.6	1.42
4	4	2.9	11.4	1.58
5	5	6.7	25.7	1.83
6	6	10.5	40	1.84
7	8	15.2	57	1.86
8	10	20	92	2.08
9	12	30.4	143	2.62
10	15	45.6	205	2.95
11	16	49.8	220	3.06
12	20	79.8	366	3.12
13	25	114	599	3.46
14	30	143	713	3.78
15	32	148	722	3.95

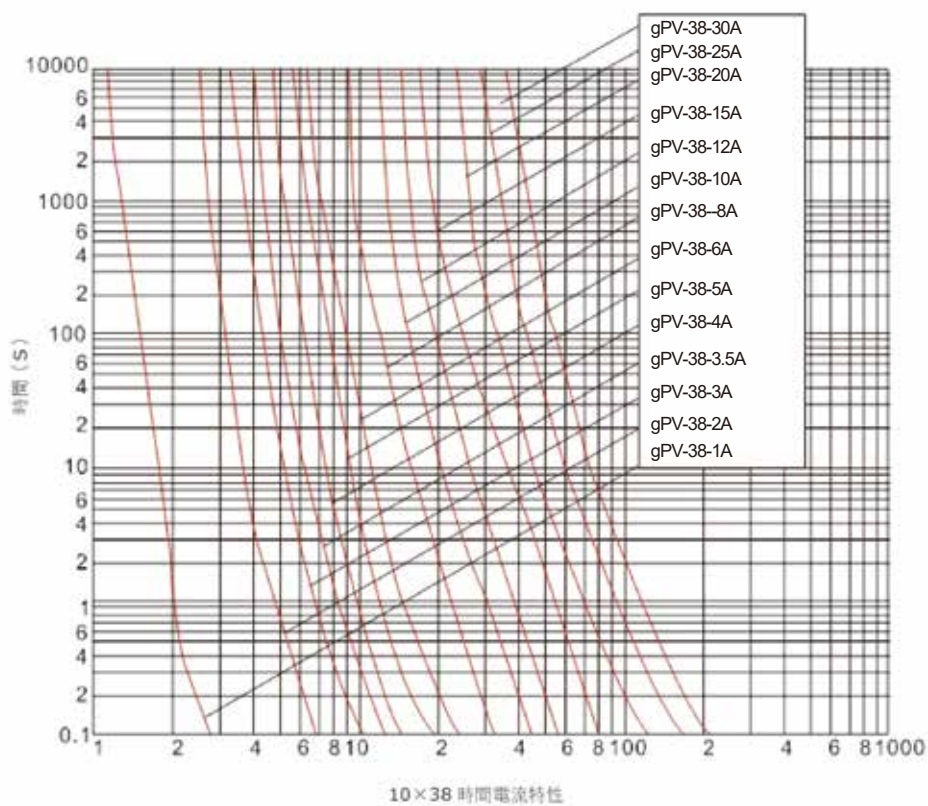
Test method

Assigned time, Assigned current

“gPV” Fuse assigned time with current

“gPV” Fuse rated current A	Assigned time h	Assigned Current	
		Inf	If
$I_n \leq 63$	1	1.13I _n	1.45I _n
$60 < I_n \leq 160$	2		
$160 < I_n \leq 400$	3		
$I_n > 400$	4		

Melting characteristic curve

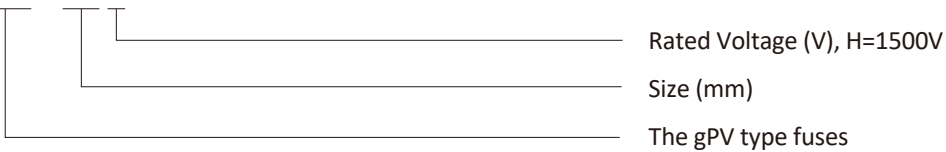




gPV-38H

Select Code

gPV - 38 H



Application

The gPV type fuses are suitable for lines with rated DC voltage up to 1500V and rated current up to 32A. It's provide short-circuit protection for

- connected in series and parallel with photovoltaic panels and batteries
- the charging and converter system
- photovoltaic power plants, inverter and rectifier systems
- photovoltaic power generation system surge current

rated breaking capacity up to 32kA.

It's comply with China national standard IEC60269-6.

Normal working conditions

- The effect of current

The upper limit of ambient air temperature should not exceed 90°C ; the lower limit of ambient air temperature should not be lower than -50°C ; the altitude of the installation site should not exceed 2000m (if you want to exceed this 2000m, you need to indicate the requirements, and the company can design and develop according to customer requirements).

PV fuse link derating table for installation

Installation altitude (m)	Percentage of current derating (A)	Percentage of Insulation performance derating (V)
2000	100%	100%
3000	95%	90%
4000	90%	80%
5000	85%	70%

For example : the rated current is 18A and the installation site altitude is 5000m, the actual selection is $18 \times 85\% \approx 15.3A$.

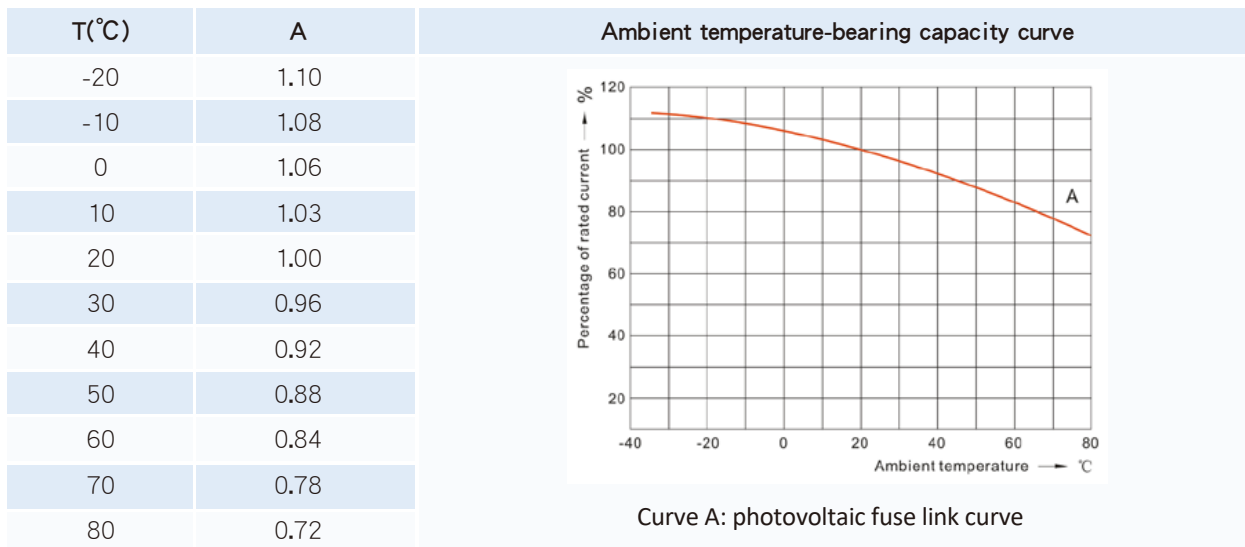
- The effect of Voltage

The rated voltage of photovoltaic fuses does not need to be derated for installation altitudes not exceeding 5000m, but it is affected by air pressure on the power frequency withstand voltage and insulation performance to a certain extent. The test voltage of DC 1001-1500V is 3820V, and Our products reach at least 6000V, so here is no need to consider.



● The effect of temperature

The following figure shows a typical curve of the influence of ambient temperature on current carrying capacity:



For example : In some applications, the ambient temperature is 20°C, and the rated current of the photovoltaic (gPV type) fuse is selected as 63A. Now, the above-mentioned fuse is often used in a high temperature environment of 70°C , then the fuse must be derated. The environmental bearing capacity curve A in the figure shows that the percentage of the rated operating value at 70°C is 0.78, that is to say, the rated current value of the fuse should be reselected:

$$I'_N = \frac{63A}{0.78} = 80.77A$$

Choose 80A according to the standard current level of the fuse

Use category

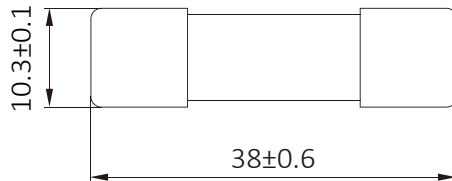
"gPV" refers to a DC fuse with a full range of breaking capacity for overcurrent protection of solar photovoltaic systems.

Structural features

The variable cross-section melt made of silver flakes is encapsulated in a high-strength melt tube. The melt tube is filled with chemically treated high-purity quartz sand and special treatment chemicals as the arc extinguishing medium. The welding and the contacts are firmly electrically connected.



The main technical parameters



▲ figure 1

Fuse type	Rated Voltage (V)	Rated Current (A)	Dimensions/Size (mm)		Dissipated power (W)
			Figure No.	D X L	
gPV					
gPV-38H	DC1500V	1、2、3、4、5、6、8、10、12、15、16、20、25、30、32	1	10×38	≤4.5

Fuse cold resistance and power dissipation

Serial number	Rated current (A)	Pre-arcing I ² t	Total I ² t	1In (W)
1	1	1.1	3.9	1.30
2	2	1.5	5.2	1.36
3	3	2.4	8.6	1.42
4	4	2.9	11.4	1.58
5	5	6.7	25.7	1.83
6	6	10.5	40	1.84
7	8	15.2	57	1.86
8	10	20	92	2.08
9	12	30.4	143	2.62
10	15	45.6	205	2.95
11	16	49.8	220	3.06
12	20	79.8	366	3.12
13	25	114	599	3.46
14	30	143	713	3.78
15	32	148	722	3.95



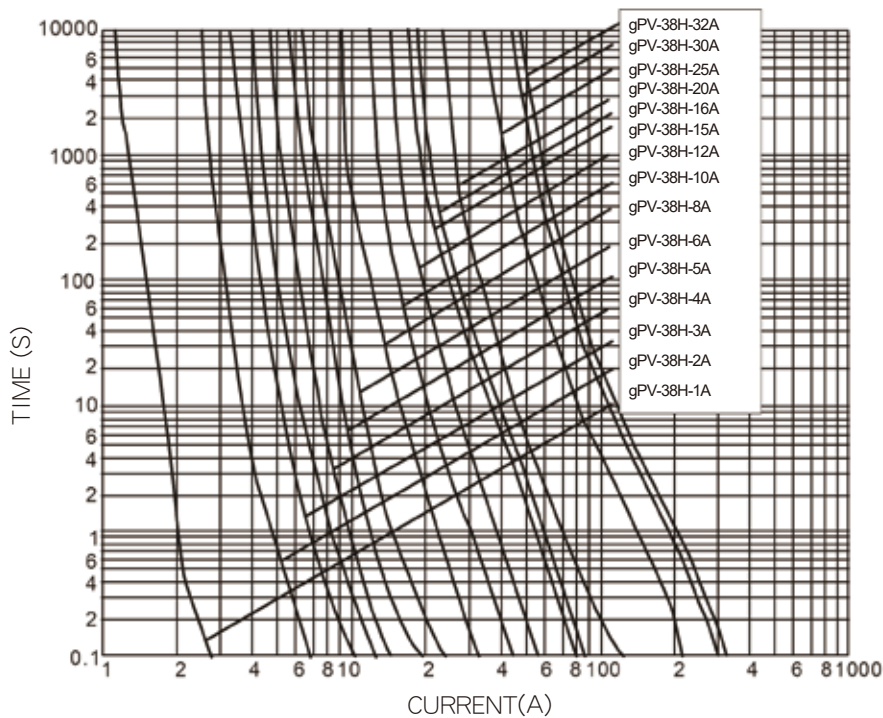
Test method

Assigned time, Assigned current

“gPV”Fuse assigned time with current

“gPV”Fuse rated current A	Assigned time h	Assigned Current	
		Inf	If
$I_n \leq 63$	1	1.13I _n	1.45I _n
$60 < I_n \leq 160$	2		
$160 < I_n \leq 400$	3		
$I_n > 400$	4		

Melting characteristic curve



gPV-58

Select Code

gPV- 58



Application

The gPV type fuses are suitable for lines with rated DC voltage up to 1500V and rated current up to 80A.

It's provide short-circuit protection for

- connected in series and parallel with photovoltaic panels and batteries
- the charging and converter system
- photovoltaic power plants, inverter and rectifier systems
- photovoltaic power generation system surge current

rated breaking capacity up to 50kA.

It's comply with China national standard IEC60269-6.

Normal working conditions

- The effect of current

The upper limit of ambient air temperature should not exceed 90°C ; the lower limit of ambient air

temperature should not be lower than -50°C ; the altitude of the installation site should not exceed

2000m (if you want to exceed this 2000m, you need to indicate the

requirements, and the company can design and develop according to customer requirements).

PV fuse link derating table for installation

Installation altitude (m)	Percentage of current derating (A)	Percentage of Insulation performance derating (V)
2000	100%	100%
3000	95%	90%
4000	90%	80%
5000	85%	70%

For example : the rated current is 18A and the installation site altitude is 5000m, the actual selection is $18 \times 85\% \approx 15.3A$.

- The effect of Voltage

The rated voltage of photovoltaic fuses does not need to be derated for installation altitudes not exceeding 5000m, but

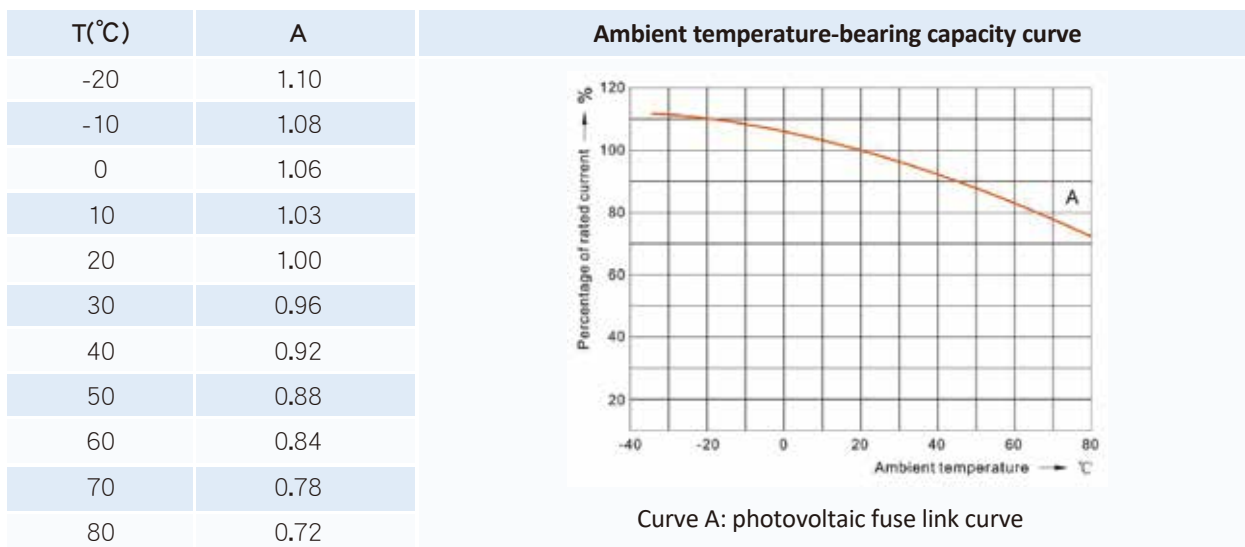
it is affected by air pressure on the power frequency withstand voltage and insulation performance to a certain extent.

The test voltage of DC 1001-1500V is 3820V, and Our products reach at least 6000V, so here is no need to consider.



● The effect of temperature

The following figure shows a typical curve of the influence of ambient temperature on current carrying capacity:



For example : In some applications, the ambient temperature is 20°C, and the rated current of the photovoltaic (gPV type) fuse is selected as 63A. Now, the above-mentioned fuse is often used in a high temperature environment of 70°C , then the fuse must be derated. The environmental bearing capacity curve A in the figure shows that the percentage of the rated operating value at 70°C is 0.78, that is to say, the rated current value of the fuse should be reselected:

$$I'_N = \frac{63A}{0.78} = 80.77A$$

Choose 80A according to the standard current level of the fuse

Use category

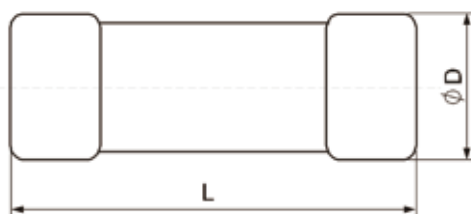
"gPV" refers to a DC fuse with a full range of breaking capacity for overcurrent protection of solar photovoltaic systems.

Structural features

The variable cross-section melt made of silver flakes is encapsulated in a high-strength melt tube. The melt tube is filled with chemically treated high-purity quartz sand and special treatment chemicals as the arc extinguishing medium. The welding and the contacts are firmly electrically connected.

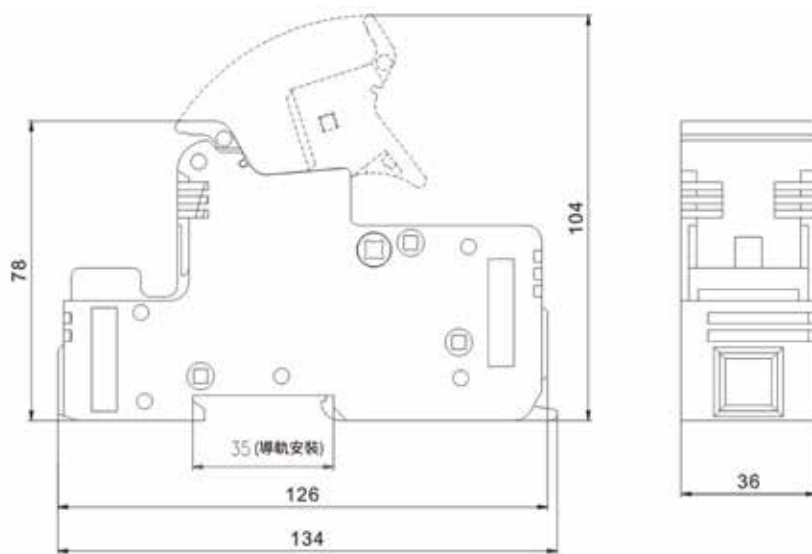


The main technical parameters



▲ figure 1

Fuse type	Rated Voltage (V)	Rated Current (A)	Dimensions/Size (mm)		Dissipated power (W)
			Figure No.	D X L	
gPV					
gPV-58	DC1500V	20、25、32、35、40、45、50、55、60、65、70、75、80	1	22x58	≤15



▲ figure 2

Fuse base model No.	Equipped with fuse size	Rated Voltage	Rated Current	Figure no.	Dimensions/Size (mm)	Dissipated power(W)
FH-58	22x58	1500Vdc	80A	2	figure 2	≥15W



Fuse cold resistance and power dissipation

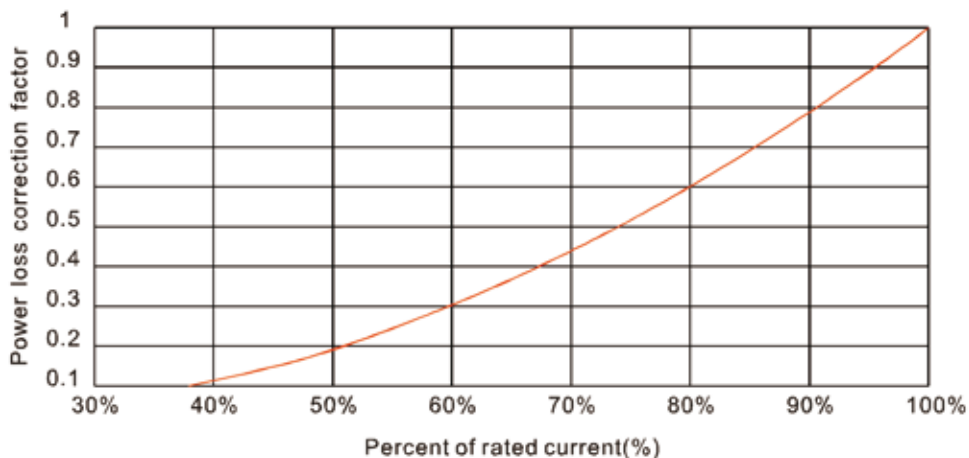
Serial number	Rated current (A)	Pre-arcing I ² t	Total I ² t	1In (W)
1	32	325	2370	6.2
2	35	390	2844	7.5
3	40	450	3300	7.9
4	45	510	3700	8.2
5	50	570	4200	9.0
6	55	630	4600	10.0
7	60	690	5100	11.0
8	65	720	5300	12.0
9	70	800	5900	13.0
10	75	850	6500	14.0
11	80	950	6720	15.0

the power loss as per percentage load of 50 % ,60%,80%,90% 100%

Serial number	Rated current (A)	0.5In (W)	0.6In (W)	0.8In (W)	0.9In (W)	1In (W)
1	32	1.55	2.24	3.97	5.03	6.2
2	35	1.88	2.40	4.80	6.08	7.5
3	40	1.98	2.50	5.06	6.40	7.9
4	45	2.05	2.55	5.25	6.65	8.2
5	50	2.25	2.60	5.76	7.29	9
6	55	2.50	3.6	6.40	8.10	10
7	60	2.75	3.90	7.10	8.95	11
8	65	3.0	4.30	7.70	9.85	12
9	70	3.25	4.70	8.30	10.50	13
10	75	3.50	5.00	8.95	11.40	14
11	80	3.75	5.40	9.60	12.20	15



Power Loss Correction Factor Curve



Test method

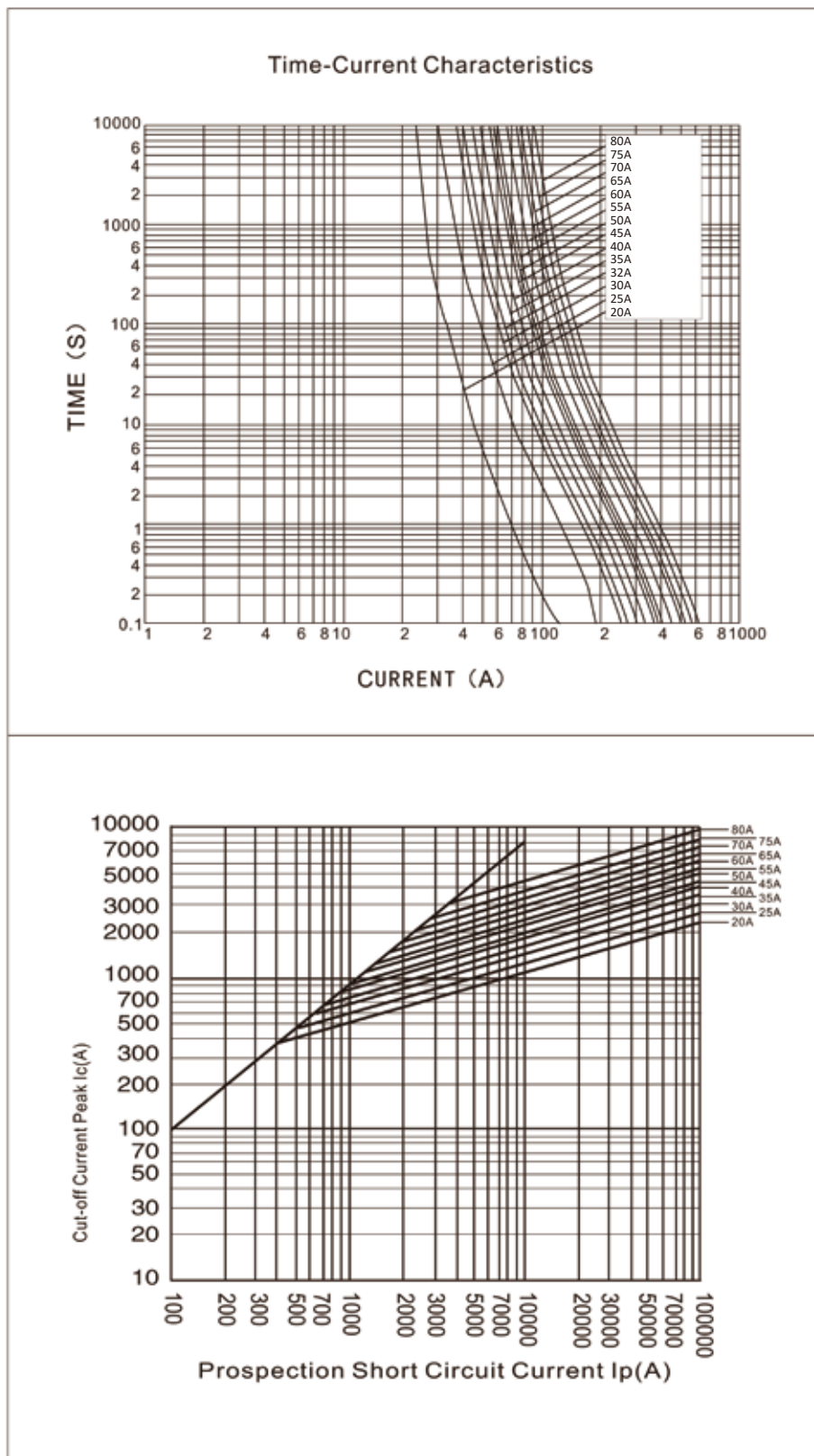
Assigned time, Assigned current

“gPV” Fuse assigned time with current

“gPV” Fuse rated current A	Assigned time h	Assigned Current	
		Inf	If
$I_n \leq 63$	1	$1.05I_n$	$1.35I_n$
$60 < I_n \leq 160$	2	$1.13I_n$	$1.45I_n$
$160 < I_n \leq 400$	3		
$I_n > 400$	4		



Melting characteristic curve

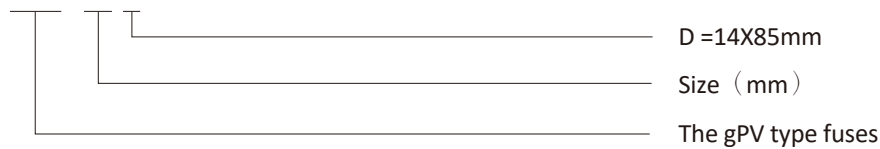




gPV-85 gPV-85D

Select Code

gPV- 85 D



Application

The gPV type fuses are suitable for lines with rated DC voltage up to 1500V and rated current up to 50A.

It's provide short-circuit protection for

- connected in series and parallel with photovoltaic panels and batteries
- the charging and converter system
- photovoltaic power plants, inverter and rectifier systems
- photovoltaic power generation system surge current

rated breaking capacity up to 50kA.

It's comply with International Electrotechnical Commission standard IEC60269-6, and UL248-19

Normal working conditions

- The effect of current

The upper limit of ambient air temperature should not exceed 90°C ; the lower limit of ambient air temperature should not be lower than -50°C ; the altitude of the installation site should not exceed 2000m (if you want to exceed this 2000m, you need to indicate the requirements, and the company can design and develop according to customer requirements).

PV fuse link derating table for installation

Installation altitude (m)	Percentage of current derating (A)	Percentage of Insulation performance derating (V)
2000	100%	100%
3000	95%	90%
4000	90%	80%
5000	85%	70%

For example : the rated current is 18A and the installation site altitude is 5000m, the actual selection is $18 \times 85\% \approx 15.3A$.

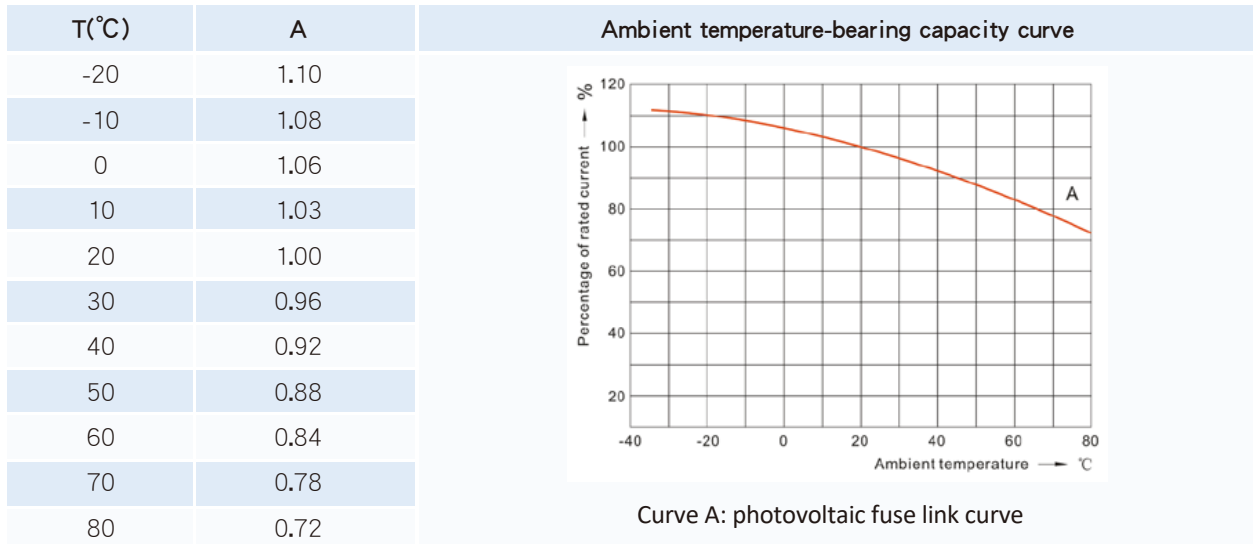
- The effect of Voltage

The rated voltage of photovoltaic fuses does not need to be derated for installation altitudes not exceeding 5000m, but it is affected by air pressure on the power frequency withstand voltage and insulation performance to a certain extent. The test voltage of DC 1001-1500V is 3820V, and Our products reach at least 6000V, so here is no need to consider.



● The effect of temperature

The following figure shows a typical curve of the influence of ambient temperature on current carrying capacity:



For example : In some applications, the ambient temperature is 20°C, and the rated current of the photovoltaic (gPV type) fuse is selected as 63A. Now, the above-mentioned fuse is often used in a high temperature environment of 70°C , then the fuse must be derated. The environmental bearing capacity curve A in the figure shows that the percentage of the rated operating value at 70°C is 0.78, that is to say, the rated current value of the fuse should be reselected:

$$I'_N = \frac{63A}{0.78} = 80.77A$$

Choose 80A according to the standard current level of the fuse

Use category

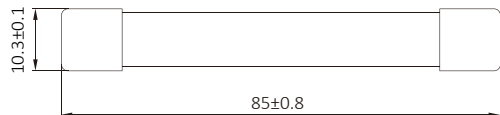
"gPV" refers to a DC fuse with a full range of breaking capacity for overcurrent protection of solar photovoltaic systems.

Structural features

The variable cross-section melt made of silver flakes is encapsulated in a high-strength melt tube. The melt tube is filled with chemically treated high-purity quartz sand and special treatment chemicals as the arc extinguishing medium. The welding and the contacts are firmly electrically connected.



The main technical parameters



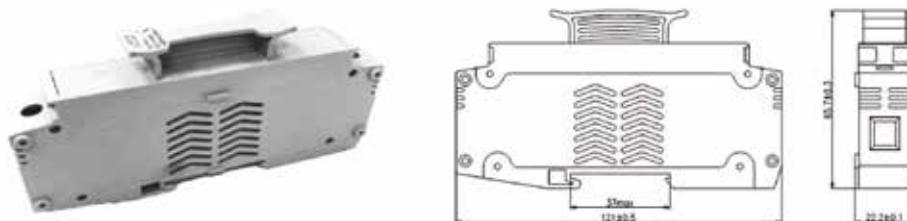
▲ figure1

Fuse type	Rated Voltage (V)	Rated Current (A)	Dimensions/Size (mm)		Dissipated power (W)
			Figure No.	D X L	
gPV					
gPV-85	DC1500V	1、2、3、4、5、6、8、10、 12、15、16、20、25、30、32、35	1	10×85	≤7



▲ figure2

Fuse type	Rated Voltage (V)	Rated Current (A)	Dimensions/Size (mm)		Dissipated power (W)
			Figure No.	D X L	
gPV					
gPV-85D	DC1500V	5、16、20、25、30、32、35、 40、45、50	2	14×85	≤12



▲ figure3

Fuse base model No.	Equipped with fuse size	Rated Voltage	Rated Current	Figure no.	Dimensions/Size (mm)	Dissipated power(W)
FH-85	10/14×85	1500Vdc	50A	3	figure 2 (without LED)	12W
FH-85L	10/14×85	1500Vdc	50A	3	figure 2	12W



Fuse cold resistance and power dissipation

Serial number	Rated current (A)	Pre-arcing I ² t	Total I ² t	1In (W)
1	1	2.3	3.1	2.1
2	2	7.4	10	2.3
3	3	13	18	2.5
4	4	27	37	2.5
5	5	41	56	2.5
6	6	58	79	2.6
7	8	11	82	2.8
8	10	19	144	3.0
9	12	33	246	3.1
10	15	59	432	3.5
11	16	63	460	4.0
12	20	112	822	4.5
13	25	197	1440	4.6
14	30	304	2220	5.4
15	32	325	2370	6.2
16	35	390	2844	7.5
17	40	450	3300	8.6
18	50	570	4200	11.0

Test method

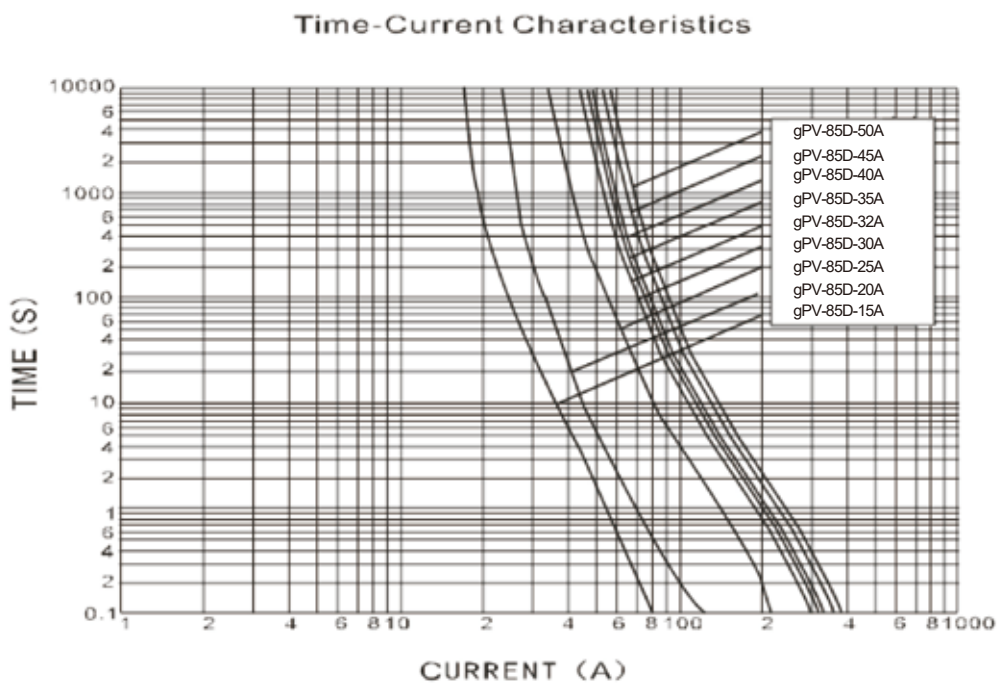
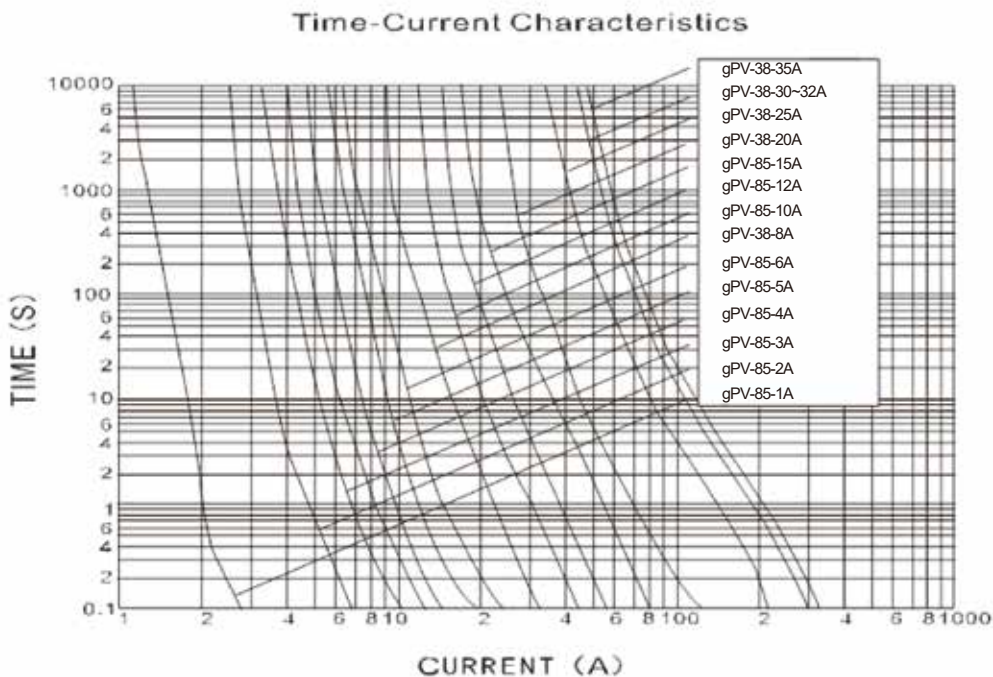
Assigned time, Assigned current

“gPV”Fuse assigned time with current

“gPV”Fuse rated current A	Assigned time h	Assigned current	
		Inf	If
$I_n \leq 63$	1	1.13I _n	1.45I _n
$63 < I_n \leq 160$	2		
$160 < I_n \leq 400$	3		
$I_n > 400$	4		



Melting characteristic curve





Advantage description

- This series of fuses have applied for TUV certificates;
- This series of fuses meet the flame retardant test conditions of UL94-V0 (1.6mm);
- The fusion tube of this series of fuse-links adopts melamine tube, which has a more significant effect on the 2In breaking capacity, and there will be no fusion tube explosion phenomenon;
- This series of fuse melt adopts the forced DC arc extinguishing function, so that the breaking capacity can reach 50kA, and some companies can only achieve 20kA, or less than 50kA, etc.;
- The terminal part of the base of this series of fuse has been quenched, and the torque is far greater than the national standard 2.5Nm;
- This series of fuse base adopts multiple ventilation and heat dissipation structures, thereby effectively reducing the temperature rise and power consumption of the product;
- The fuse base of this series adopts a plastic-free push plate installation method. The push plate material market uses polyoxymethylene, which cannot meet the flame-retardant conditions. During use, it may have a combustion-supporting effect, so there is no plastic push plate installation method. It is completely possible to avoid such incidents;
- The rated current of JDA-32L-DC1500V (10*85) in this series of fuses reaches 35A, which fully meets the needs of current market development;

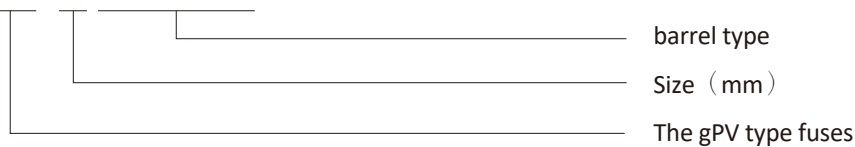
With the development and demand of the market, the current of the fuse designed by the combiner box has gradually increased, from the original 15A to the current 35A, and the voltage is also gradually increasing, from the original 1000VDC to the current 1500VDC, each inverter this year Enterprises, as well as three key components such as IGBTs, connectors, circuit breakers, fuses, sensors, capacitors, cables, etc., organized a seminar on "Technical Requirements and Standard Status of 2000V Photovoltaic Grid-connected Inverters and Their Components", and future development The trend voltage will reach



gPV-85 barrel type

Select Code

gPV- 85 barrel type



Application

The gPV type fuses are suitable for lines with rated DC voltage up to 1500V and rated current up to 35A. It's provide short-circuit protection for

- connected in series and parallel with photovoltaic panels and batteries
- the charging and converter system
- photovoltaic power plants, inverter and rectifier systems
- photovoltaic power generation system surge current

rated breaking capacity up to 50kA.

It's comply with China national standard IEC60269-6.

Normal working conditions

- The effect of current

The upper limit of ambient air temperature should not exceed 90°C ; the lower limit of ambient air temperature should not be lower than -50°C ; the altitude of the installation site should not exceed 2000m (if you want to exceed this 2000m, you need to indicate the requirements, and the company can design and develop according to customer requirements).

PV fuse link derating table for installation

Installation altitude (m)	Percentage of current derating (A)	Percentage of Insulation performance derating (V)
2000	100%	100%
3000	95%	90%
4000	90%	80%
5000	85%	70%

For example : the rated current is 18A and the installation site altitude is 5000m, the actual selection is $18 \times 85\% \approx 15.3A$.

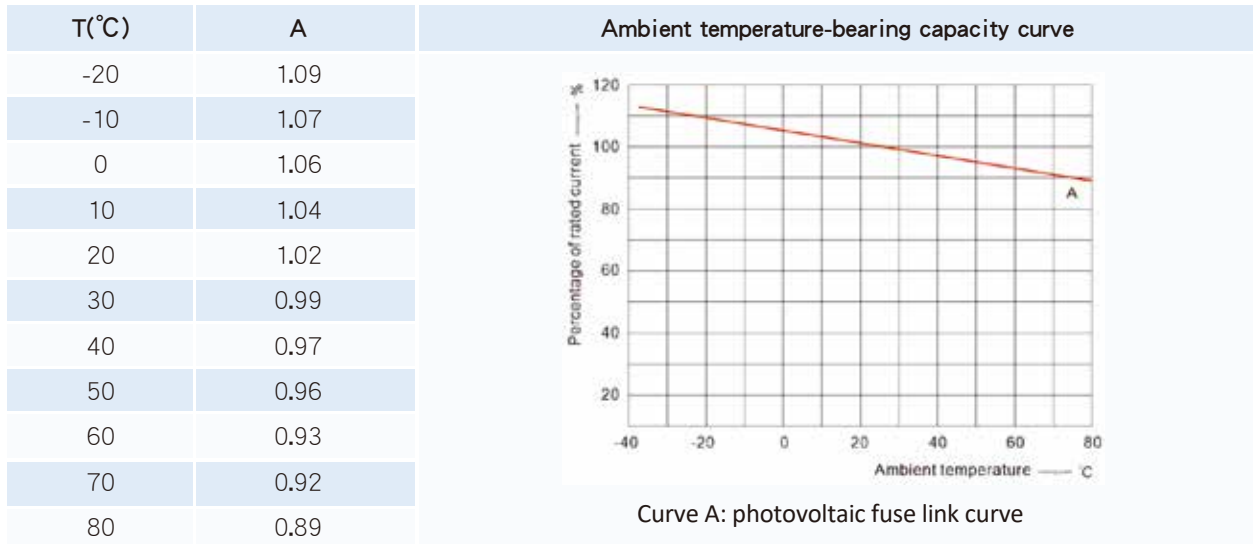
- The effect of Voltage

The rated voltage of photovoltaic fuses does not need to be derated for installation altitudes not exceeding 5000m, but it is affected by air pressure on the power frequency withstand voltage and insulation performance to a certain extent. The test voltage of DC 1001-1500V is 3820V, and Our products reach at least 6000V, so here is no need to consider.



● The effect of temperature

The following figure shows a typical curve of the influence of ambient temperature on current carrying capacity:



For example: In some applications, the ambient temperature is 25°C, and the rated current of the photovoltaic (gPV type) fuse is selected as 25A. Now, the above-mentioned fuse is often used in a high temperature environment of 50°C, then the fuse must be derated. The environmental bearing capacity curve A in the figure shows that the percentage of the rated operating value at 25°C is 0.96, that is to say, the rated current value of the fuse should be reselected:

$$I'_N = \frac{25A}{0.96} = 26.04$$

If you need derating capacity , please contact us to customized the fuse.

Use category

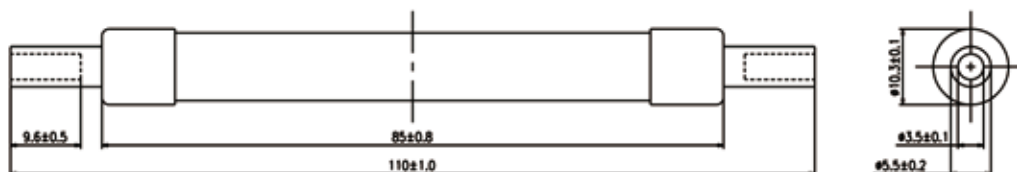
"gPV" refers to a DC fuse with a full range of breaking capacity for overcurrent protection of solar photovoltaic systems.

Structural features

The variable cross-section melt made of silver flakes is encapsulated in a high-strength melt tube. The melt tube is filled with chemically treated high-purity quartz sand and special treatment chemicals as the arc extinguishing medium. The welding and the contacts are firmly electrically connected.



The main technical parameters



▲ figure 1

Fuse type	Rated Voltage (V)	Rated Current (A)	Dimensions/Size (mm)		Dissipated power (W)
			Figure No.	D X L	
gPV					
gPV-85 barrel type	DC1500V	1、2、3、4、5、6、8、10、12、15、16、20、25、30、32、35	1	10×85	≤7.5

Fuse cold resistance and power dissipation

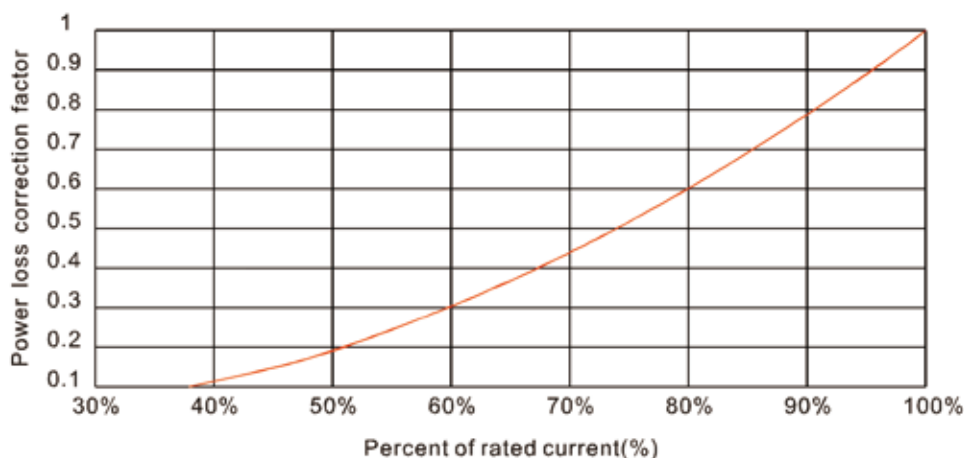
Serial number	Rated current (A)	Pre-arcing I ² t	Total I ² t	1In (W)
1	0.5	5	26	0.9
2	1	10	52	1.1
3	2	19	104	1.3
4	3	29	156	1.5
5	4	38	208	1.8
6	5	47	260	2.1
7	6	57	312	2.5
8	8	75	415	2.8
9	10	105	580	3.0
10	12	134	746	3.1
11	15	167	932	3.5
12	16	178	995	4.0
13	20	223	1243	4.5
14	25	279	1550	4.6
15	30	304	2220	5.4
16	32	325	2370	6.2
17	35	390	2844	7.5



the power loss as per percentage load of 50 % ,60%,80%,90% 100%

Serial number	Rated current (A)	0.5In (W)	0.6In (W)	0.8In (W)	0.9In (W)	1In (W)
1	0.5	0.23	0.33	0.58	0.73	0.9
2	1	0.28	0.40	0.71	0.90	1.1
3	2	0.33	0.47	0.84	1.10	1.3
4	3	0.38	0.54	0.96	1.22	1.5
5	4	0.45	0.65	1.16	1.46	1.8
6	5	0.53	0.76	1.35	1.71	2.1
7	6	0.63	0.9	1.60	2.03	2.5
8	8	0.70	1.01	1.80	2.27	2.8
9	10	0.75	1.08	1.92	2.43	3.0
10	12	0.80	1.12	1.99	2.52	3.1
11	15	0.88	1.23	2.24	2.84	3.5
12	16	1.00	1.44	2.56	3.24	4.0
13	20	1.13	1.62	2.88	3.65	4.5
14	25	1.15	1.66	2.95	3.73	4.6
15	30	1.35	1.95	3.46	4.38	5.4
16	32	1.55	2.24	3.97	5.03	6.2
17	35	1.88	2.40	4.80	6.08	7.5

Power Loss Correction Factor Curve



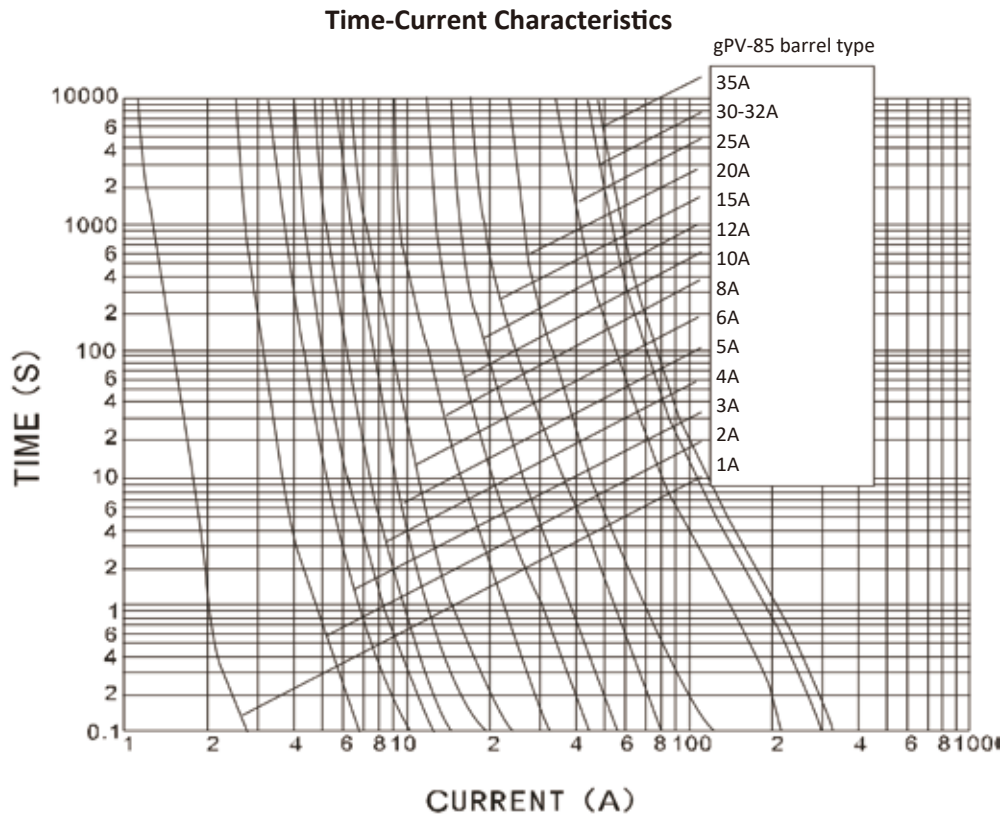
Test method

Assigned time, Assigned current

“gPV” Fuse assigned time with current

“gPV” Fuse rated current A	Assigned time h	Assigned Current	
		Inf	If
$I_n \leq 63$	1	$1.05I_n(UL)/1.13I_n(IEC)$	$1.35I_n(UL)/1.45I_n(IEC)$
$60 < I_n \leq 160$	2	1.13I _n	1.45I _n
$160 < I_n \leq 400$	3		
$I_n > 400$	4		


Melting characteristic curve





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