Specification

ZR/YC-0030 A2

97 Jinye 2nd Road, Xi'an, Shaanxi 710077 China
Tel: +86 29 68590655 68590656 68590678 (sales)
Fax: +86 29 68590676
info@sinofuse.com
http://www.sinofuse.com

AC/DC1000V 5A-800A

CE RoHS COMPLIANT

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Basics

- Performance Reference：UL248 / IEC60269
- Rated Voltage：AC/DC 1000V
- Rated Current：5A～800A
- Usage category：aR
- Breaking Capacity：AC 100kA、DC 50kA(Time constant≤15ms)
- Certified：5～30A: CE, 35～500A: TUV、CE、UL, 550～800A: TUV、CE
- RoHS Compliant

This product is circular tube type fast fuse, adopting high strength terminals, special performance design for vehicle working conditions. With small size, low fusing I2t value, high breaking capacity, applicable to a wide range of temperatures, can withstand high-intensity vibration and impact, strong current impact, wide temperature impact, strong chemical load, suitable for road vehicle industry applications. It can be used as short circuit overcurrent as well as backup protection for electric vehicle drive power systems, power conversion systems, energy storage and power batteries, energy storage capacitors, inverter controllers, chargers, conductors, and other automotive devices and equipment.

Note: All test data are measured under DC environment, test parameters and wiring according to GB/T13539.

No.	Part Number	Size	Current (A)	I²t（A²s）		Loss (W)		Weight (g)	Min Package (pcs)	Max Package	Mounting
				Pre-arc	Clearing	0.5In	In				
1	RS309-MM-5A	2YA	5	18	110	0.4	1.8	26.5±3	10	160	Bolt M6
2	RS309-MM-10A		10	29	160	0.6	2.6				
3	RS309-MM-15A		15	46	215	0.8	4				
4	RS309-MM-20A		20	69	350	1.4	6.6				
5	RS309-MM-25A		25	81	500	0.8	8.6				
6	RS309-MM-30A		30	105	810	1.8	10.5				
7	RS309-MM-35A	4RC	35	129	922	2.2	11	100±5	8	112	Bolt M8
8	RS309-MM-40A		40	180	1287	2.3	11.5				
9	RS309-MM-50A		50	289	2074	3	15				
10	RS309-MM-60A		60	515	3686	3.2	16				
11	RS309-MM-70A		70	719	5149	3.8	19				
12	RS309-MM-80A		80	804	5760	4.2	21				
13	RS309-MM-90A	5RB	90	997	5960	4.6	23	181±8	6	84	Bolt M8
14	RS309-MM-100A		100	1772	9657	5.4	27				
15	RS309-MM-125A		125	2769	15089	6	30				
16	RS309-MM-150A		150	4680	25500	7.2	36				
17	RS309-MM-175A	6RB	175	8031	33633	8.6	43	280±10	3	42	Bolt M10
18	RS309-MM-200A		200	11217	46975	10	50				
19	RS309-MM-225A		225	14651	61355	11	55				
20	RS309-MM-250A		250	18543	77653	12.2	62				
21	RS309-MM-300A		300	27700	116000	15.1	75.5				
22	RS309-MM-350A	7HA	350	32767	115770	19	95	506±15	3	42	Bolt M10
23	RS309-MM-400A		400	48562	171575	21	103				
24	RS309-MM-450A		450	71604	252986	21.8	109				
25	RS309-MM-500A		500	109264	386045	23	115				
26	RS309-MM-550A	8HA	550	119918	423686	23.5	117	1004±20	2	12	Bolt M12
27	RS309-MM-600A		600	154853	547115	24	120				
28	RS309-MM-700A		700	222989	787846	27.8	139				
29	RS309-MM-800A		800	317000	1120000	36.6	183				

Note: The tightening torque of mounting bolts is according to the tightening torque specification of threaded fasteners for automobile use QC/T518-1999 5.6 level requirements;

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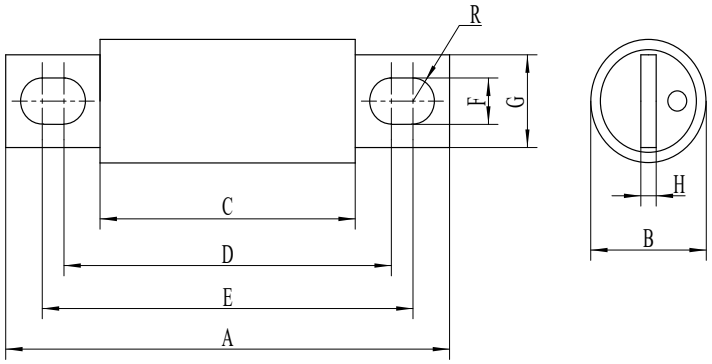
Dimensions (mm)

Outline and Mounting

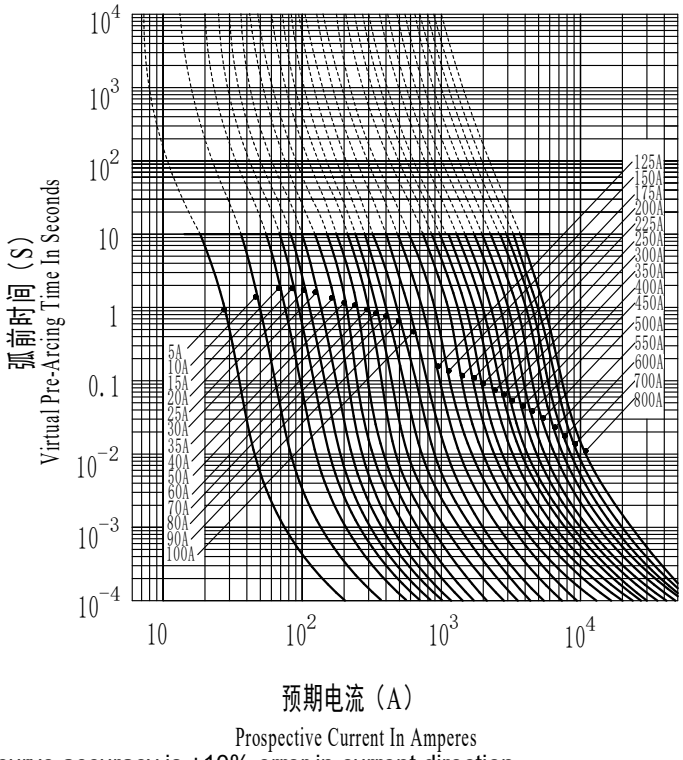


Size Code	A±2	B±0.5	C±1	D±1.5	E±1.5	F±1	G±1	H±0.2
2YA	73.5	14.3	47.6	60.5	63.5	6.5	10.3	1.6
4RC	124	24	78	95	109	9	18	3.2
5RB	124	31	78	95	109	9	22	5
6RB	144	37	82	105	122	10.5	25	6
7HA	144	49	88	105	122	10.5	38	6
8HA	183	62	88	119.5	152	13.5	50	10

Note: The coplanarity of the two contact mounting surfaces is ⩽0.5mm

Characteristics Curves

Time Current Characteristic Curves



Note: 1. Characteristic curve accuracy is ±10% error in current direction.

2. The above curve times below 100ms are equivalent times;

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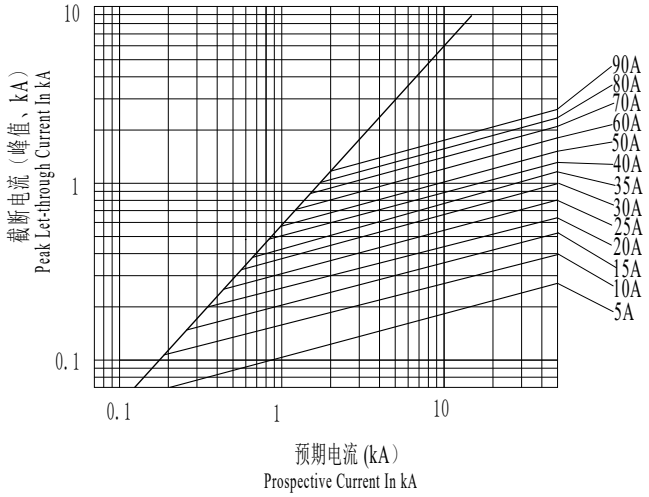
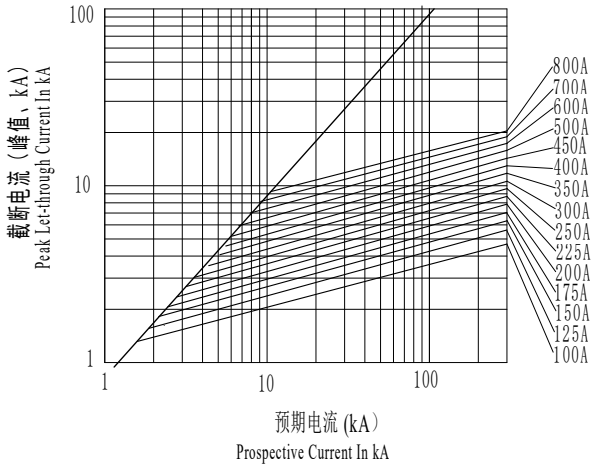
Cut-off current characterist





Transport and Storage

Transport

Avoid rain/snow or mechanical damage during transportation.

Storage

Storage temp: -40°C～120°C, Maximum 90% RH at 40°C, avoid moderate or higher condensation.

Package and Storage temp: -40°C～70°C, RH not exceeding 90%, no dewing.

Normal Condition

Parameter corrections

Correction is not required under normal conditions

For other conditions, if they are within tolerable range, certain correction measures may be required

If conditions are beyond tolerable range, please consult our team for evaluation and testing

The recommended current value for long-term through-current is not more than 80% of the rated current.

Ambient Temperature

Normal Condition

-5°C～40°C

Tolerable Range

-40°C～85°C

Ambient temperature correction: operating below -5°C, resulting longer pre-arc time under small overcurrent and slightly increased rated current. However, unless -5°C or more is not an operating range, increasing the fuse current rating is generally not considered.

If above 40°C, rated current is corrected as per factor -Kt

Note 1: Kt value has considered safety margin of rated current during normal operation

Note 2: ambient temperature should last 1-2 hrs. before it has significant impact on fuse

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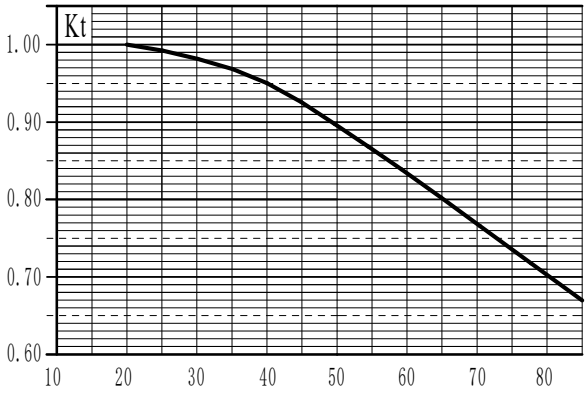

Altitude

Normal Condition

Below 2000m

Tolerable Condition

Below 4500m

Correction: higher altitude would affect insulation and dissipation, also changes air pressure.

a) For every 100m higher, fuse temperature rise increases by 0.1-0.5k.

b) For every 100m higher, ambient temperature drops by 0.5k approximately.

c) Normally for fuses in open environment, altitude condition is negligible.

d) For closed environment, if ambient temperature inside remains almost stable under different altitude. can still reach above 40°C, a derating of the rated current is required. Rated current is reduced by 2-5% for every 1,000 meters of elevation gain.

Note: for any series, larger rated fuse should use higher degrade %, and lower degrade % for smaller one.

Air Insulation Strength (Breakdown)

a) Air insulation reduces with higher altitude. For 2000-4500m, decreases by 12-15% for every 1000m, as per GB/T16935.1. Thus adjust clearing space.

b) Space between fuse terminals is often much larger than specified value in standard (GB/T16935.1).

c) User should consider altitude impact on spacing between fuse and other component, earthing etc.

Atmosphere Condition

Normal Conditions

The air is clean and its relative humidity does not exceed 50% at a maximum temperature of 40°C.
Higher relative humidity is possible at lower temperatures, e.g. up to 90% relative humidity at 20°C.
Under these conditions, moderate condensation may occur occasionally due to temperature variations.

Tolerable Conditions

If dewing is minor, RH could be up to 95%.

Vibration Vibration

The anti-vibration and shock resistance of this series of fuses is suitable for use in road vehicle installations.
For severe vibration application, please consult our team for evaluation and testing.

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Pollution Class

Grade 3 pollution withstand

Mounting

Normal Condition

a) Except for the connecting wires (busbar), there are no other heat-generating or heat-dissipating parts withir

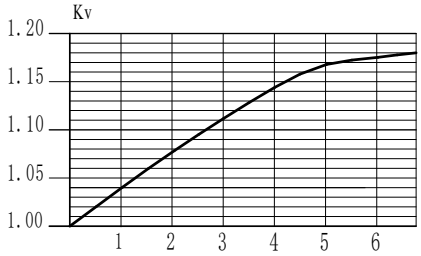
b) Contact of fuses must be securely connected. Contact resistance should not affect operation.

c) Fuse can be mounted in any orientation. If spring compression is adopted,
make sure it is properly mounted to avoid harmful effect due to gravity or vibration.

Forced Air and Liquid Cooling

Using forced air cooling increases the heat dissipation of the fuse and can increase the fuse current rating.

Correction factor for wind speed and rated current-Kv.



Forced Cooling Wind Speed (m/s)

Safety and Maintenance

a) Sufficient space must be ensured between installed fuses. Install insulation if necessary.
This is to avoid possible inter-phase short circuit while replacing fuse.

b) Periodic maintenance of fuses includes removal of oxidation layer and dusts.

c) It is compulsory to replace all mechanically damaged fuses.

d) Unless permissive (e.g.fused load-switch), do not replace fuses while energized.

e) While servicing, fuse will not generate gas, dust, noise or others that may harm the environment.

f) Metallic part of fuse can be recycled. Non-metal part can be crushed and treated as normal industry waste.
It will not cause further pollution to the environment.