



EV315-H-3EB/L-3EC/3EN/3EC/3EF Road Vehicle Fuse

Specification

ZR/YC-0155 B1

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DC 500V 10A-50A

Basics

- Conform to ISO8820, JASO D622, GB/T31465
- Rated Voltage: DC500V
DC/AC500V(EV315-H-3EB)
- Rated Current: 10A-50A
- Protection Category: EV
- Breaking Capacity: DC 20kA(Time Constant: $2\pm0.5\text{ms}$)
AC:20kA,COS $\Phi=0.7-0.8$ (EV315-H-3EB)
- RoHS Compliant

With excellent withstand to temperature shock, mechanical vibration/shock, current shock, chemical load, suitable for road vehicle industry. It can be used as short-circuit and backup protection for EV drive power, power conversion systems, energy storage and power batteries, energy storage capacitors, inverter controllers, chargers, wires and other vehicle devices and equipment.

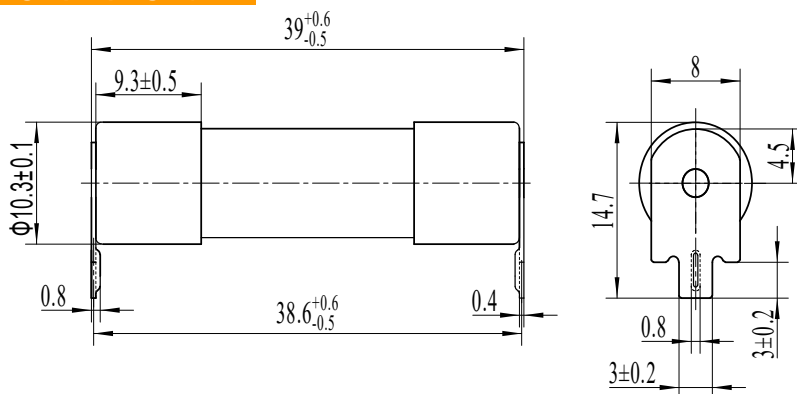
Note: All test data are measured in a DC environment, test parameters and wiring with reference to JASO D622.

	Part Number	Size	Current (A)	I ² t (A ² s)		Loss W	Color	Weight g	Min Package (pcs)	Max Package (pcs)	Mounting
				Prearc	Clearing						
1	EV315-H-3EB10A	H-3EB	10	19	64	2	Red	10.3±1.5	144	288	Single pin plug-in
2	EV315-H-3EB15A		15	47	144	3	Blue				
3	EV315-H-3EB20A		20	83	256	4	Yellow				
4	EV315-H-3EB30A		30	333	1025	6	Green				
5	EV315-H-3EB40A		40	748	2306	8	Orange				
6	EV315-H-3EB50A		50	1330	4100	10	White				
7	EV315-L-3EC10A	L-3EC	10	19	64	2	Red	14.8±1.5	36	576	Lower bolt M6 Torque 6±1N·m
8	EV315-L-3EC15A		15	47	144	3	Blue				
9	EV315-L-3EC20A		20	83	256	4	Yellow				
10	EV315-L-3EC30A		30	333	1025	6	Green				
11	EV315-L-3EC40A		40	748	2306	8	Orange				
12	EV315-L-3EC50A		50	1330	4100	10	White				
13	EV315-3EN10A	3EN	10	19	64	2	Red	13.5±1	64	384	Bolt M4 Torque 2±0.5N·m
14	EV315-3EN15A		15	47	144	3	Blue				
15	EV315-3EN20A		20	83	256	4	Yellow				
16	EV315-3EN30A		30	333	1025	6	Green				
17	EV315-3EN40A		40	748	2306	8	Orange				
18	EV315-3EN50A		50	1330	4100	10	White				
19	EV315-H-3EC30A	H-3EC	30	333	1025	6	Green	10.4±1.5	144	288	Single pin plug-in
20	EV315-H-3EF50A	H-3EF	50	1330	4100	10	White	10.3±1.5	144	288	Single pin plug-in

Note: The I²t data is gained under a condition of DC520V, 20.6kA, L/R=2.63 ms.

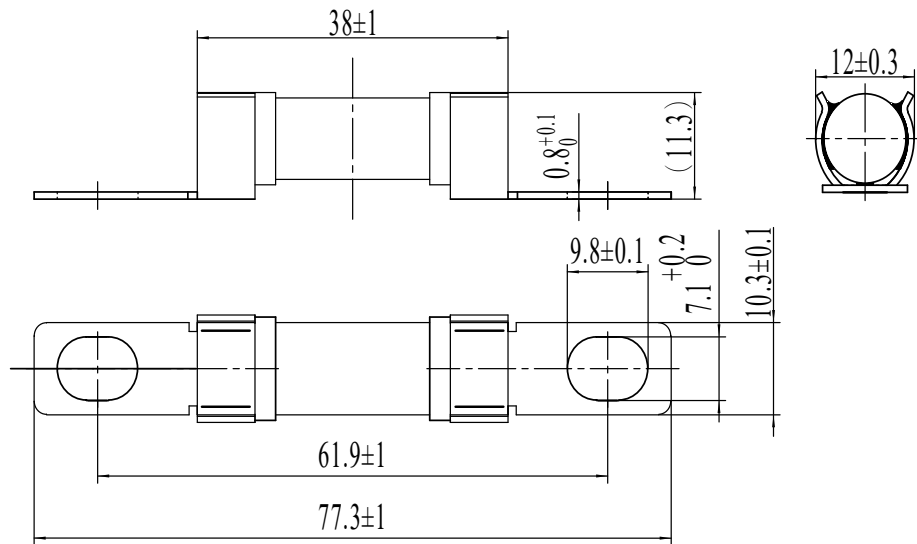
Dimensions (mm)

EV315-H-3EB (Single pin plug-in)

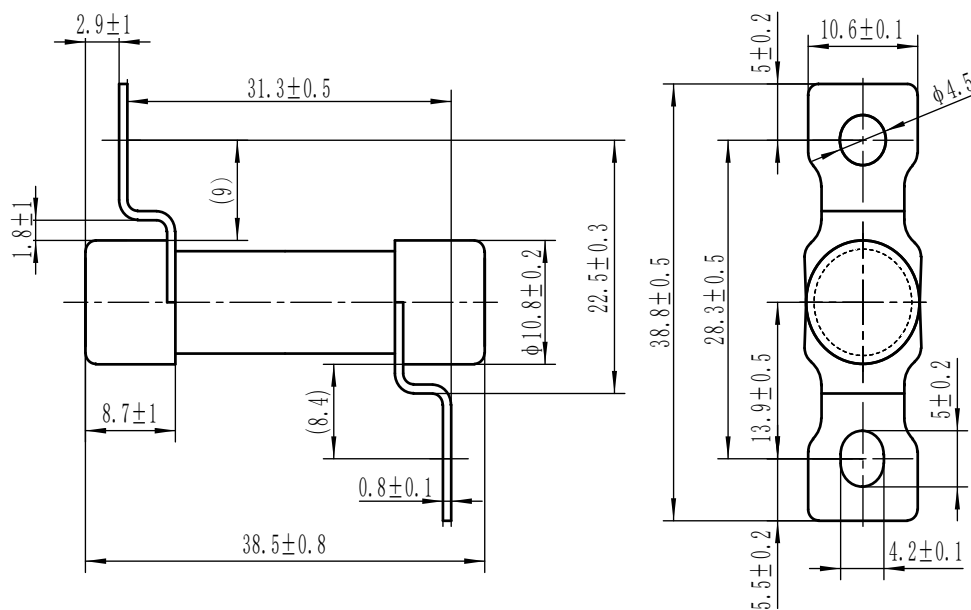


Note: levelness of terminal blades max. 0.4

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EV315-L-3EC (Lower bolt-on)


Note: levelness of terminal blades max. 0.3

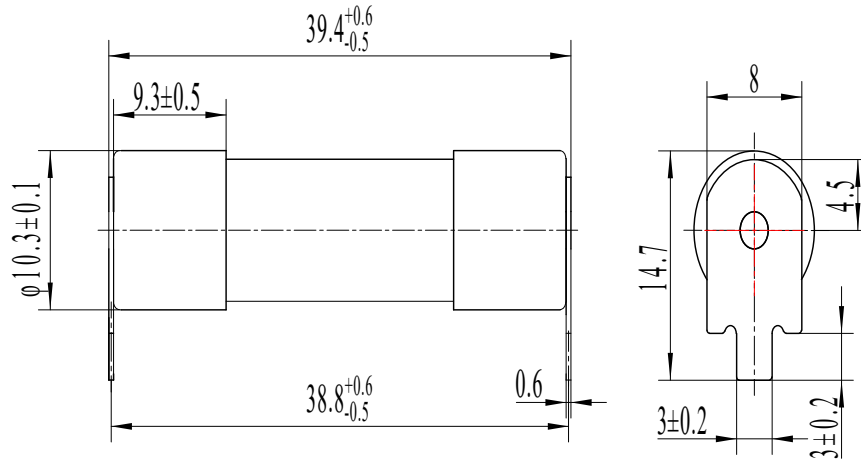
EV315-3EN


Note: levelness of terminal blades max. 0.5

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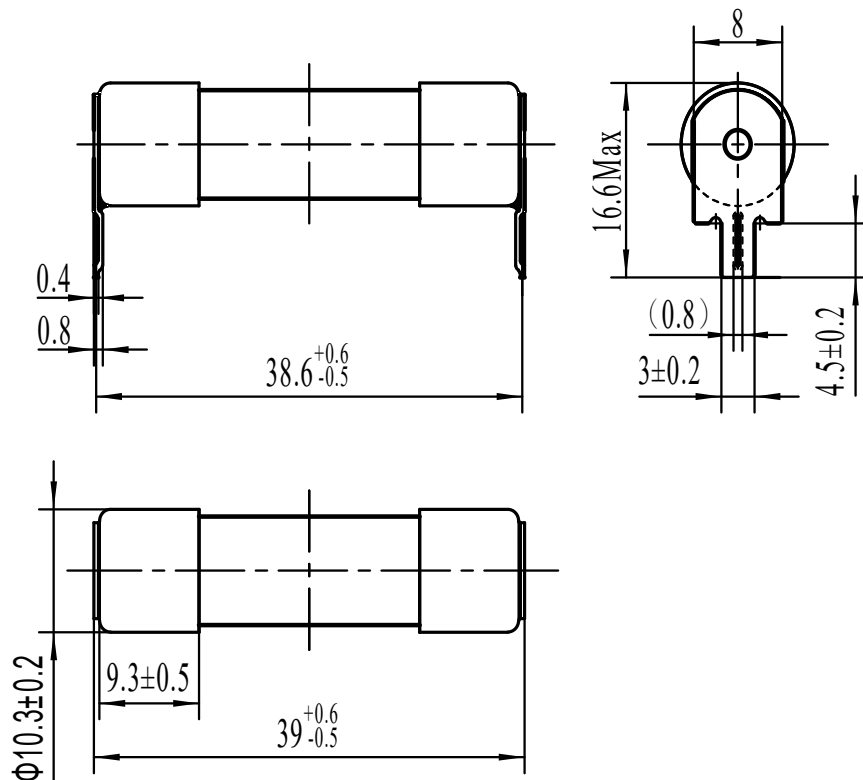
RoHS
COMPLIANT

EV315-H-3EC (Single pin plug-in)



Note: levelness of terminal blades max. 0.4

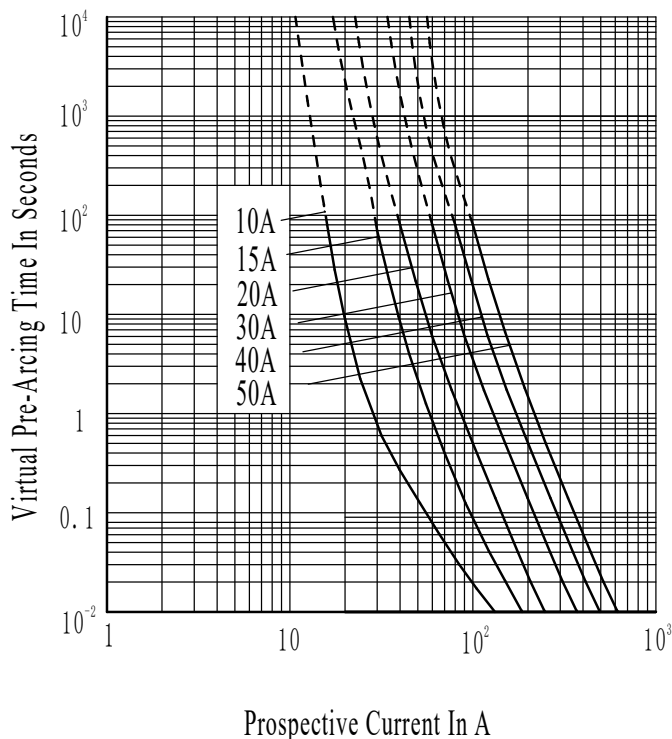
EV315-H-3EF (Single pin plug-in)



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Characteristic Curves

Time Current Curves



- Note: 1) Curves: current tolerance $\pm 15\%$;
 2) Min. breaking current at least $2I_n$;

Transportation& Storage

Transport

Avoid rain/snow or mechanical damage during transportation

Storage

Storage temp: $-40^{\circ}\text{C} \sim 70^{\circ}\text{C}$. Maximum 70% RH at 40°C ; Maximum 80% RH at 30°C ;
 Maximum 90% RH at 20°C ;

Package storage: $-40^{\circ}\text{C} \sim 70^{\circ}\text{C}$, max 90% RH no dewing

Avoid fire and water

Sharp items may cause damage to the fuse

Tolerable free fall height is up to 0.5 m. Contact surface should be flat. Do not impact on corner or edge.

Avoid corrosive ingress

Usage Conditions

Normal Condition

Correction is not required under normal condition

In other tolerable conditions, certain corrections may be required.

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

Current rating of fuse should be larger than actual load current, following principles apply

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e.g. at room temperature, load current should not exceed 50% of rated value, depending on actual condition
 The following conditions should be confirmed by Customer and Sinofuse.

- 1) Whether load current is continuous or impulsive
- 2) Is there presence of large surge current due to switching
- 3) Load current will exist for short time period or long time period

Ambient Temperature

Normal condition

-5°C~40 °C

Tolerable Range

-40°C~125°C

Note: if fuse is used together with TD1065 fuse base, the temperature of base also needed to be concerned

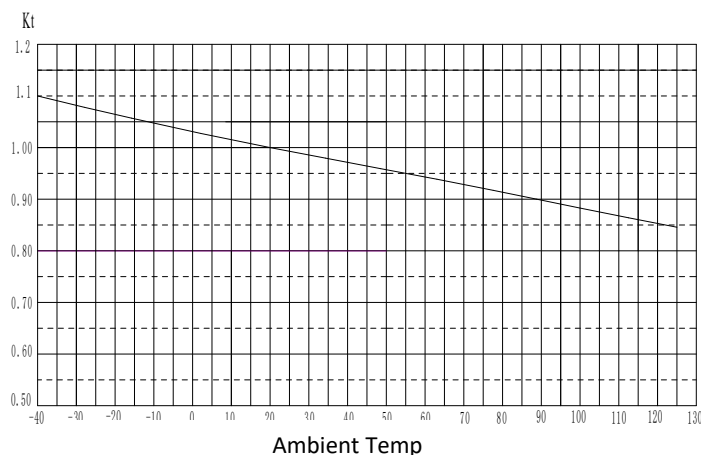
Ambient temperature correction: When operating below -5°C, pre-arcing time at small overcurrent will be prolonged and rated current of fuse will be enlarged slightly

Unless ambient temperature is always below -5°C, it is not recommended to increase rated current

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

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

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



Altitude

Normal Condition

Below 2000m

Tolerable Condition

2000m-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,

If above 40°C, fuse should be derated. For every 1000m, rated current should be derated by 2%-5%

Air Insulation Strength (Breakdown)

- a) Air insulation reduces with higher altitude. For 2000-4500m, decreases by 12-15% for every 1000m.

Data above is obtained from GB/T16935.1. Thus adjustment to insulation space is necessary

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- 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.

Atmospheric Conditions

Normal Conditions

- Clean atmosphere, maximum 50% RH at 40°C
- Higher RH is allowed when temperature is low, e.g. maximum 90% at 20 °C
- Moderate dewing may occur under temperature changes.

Tolerable Conditions

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

Vibration

- This series of fuse conform to rail transport vibration grade II and satisfy vehicle usage condition
- For severe vibration application, please consult our team for evaluation and testing.

Pollution class

- Grade 3 pollution withstand

Mounting Condition

- a) Fuse and fuse-holder should be mounted properly with specified torque and stress.
- 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 cooling

- Forced air cooling can be implemented to improve current carrying capacity of fuse.

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 (eg.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.