



RoHS compliant

### Features

- Ceramic brazing sealed technology guarantees no risk of arc leaking and ensures no fire or explosion.
- Filled with gas ( mostly hydrogen) to effectively prevent the oxidation burnt when exposed to electricity; the contact resistance is low and stable, and the parts exposed to electricity can meet IP67 protection level.
- Carrying current 150A continuously at 85°C.
- Insulation resistance is 1000MΩ(1000 VDC), and dielectric strength between the coil and contacts is 4kV, which meets the requirements of IEC 60664-1.

### CONTACT DATA

Contact arrangement	1 Form A	
Contact resistance	≤0.5mΩ(at 150A)	
Contact rating	150A	
Mechanical endurance	2x10 <sup>6</sup> ops	
	<b>Type 450V</b>	<b>Type 750V</b>
Max. switching voltage	450 VDC	750 VDC
Max. breaking current	1200A(300 VDC) 1op	1200A(300 VDC) 1op
Max. switching power	135kW	225kW
Electrical endurance 1)	Making:2.5x10 <sup>4</sup> ops (22.5 VDC, τ =1ms, Inrush400A, Steady150A)	Making:1x10 <sup>4</sup> ops (37.5 VDC, τ =1ms, Inrush400A, Steady150A)
	Switching:1x10 <sup>3</sup> ops (450 VDC, 150A)	Switching:100ops ( 750 VDC,150A)
	Switching:3x10 <sup>3</sup> ops (200 VDC, 120A)	
	Switching:500ops (450 VDC, -150A)	
	Switching:1ops (300 VDC, 1200A)	
Current carrying 2) capacity	150A:Cont.	
	180A:2h	
	225A:15min	
	320A:2min	
	400A:60s	
	600A:20s	
	900A:8s	

Notes: 1) Unless otherwise specified, the temperature of electrical endurance is at 23°C and the on-off ratio is 0.6s:5.4s.

The coil was not connected to the surge suppression device during the test. Please note that the use of a well-connected diode will greatly increase the release time of the relay, resulting in a reduced lifetime.

2) Ambient temperature is at 85°C and cross section area of wire is 50mm<sup>2</sup> min. See Fig. Endurance Capacity Curve for more information.

### COIL

23°C

Rated Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Coil power W
12	≤9	≥1	5.5
24	≤18	≥2	5.5

### CHARACTERISTICS

Insulation resistance	1000MΩ (1000 VDC)	
Dielectric strength	Between coil & contacts	4000 VAC 1min
	Between open contacts	3000 VAC 1min
Operate time (at rated volt.)	≤30ms	
Release time (at rated volt.)	≤10ms	
Shock resistance	Functional	196m/s <sup>2</sup>
	Destructive	490m/s <sup>2</sup>
Vibration resistance	10Hz ~ 500Hz 49m/s <sup>2</sup>	
Humidity	5% ~ 85% RH	
Ambient temperature	-40°C ~ 85°C	
Load terminal structure	Screw terminal female Copper bus bar terminal	
Unit weight	Approx.280g	
Outline Dimensions	76.0x36.0x66.8mm	

Notes:The above values are the initial values measured at room temperature.



HONGFA RELAY

ISO9001、ISO/TS16949、ISO14001、OHSAS18001、IECQ QC 080000 CERTIFIED

2021 Rev. 1.00

## ORDERING INFORMATION

Type	HFE82 V -150 D/ 750- 12- H -L 6 (XXX)									
Application	V: Vehicle									
Contact rating	150: 150A									
Series breakdown	D: D series									
Load voltage	Nil: 450 VDC 750: 750 VDC									
Coil voltage	12: 12 VDC 24: 24 VDC									
Contact arrangement	H: 1 Form A									
Coil terminal structure	L: Lead wire C: Connector									
Load terminal structure	5: Screw terminal female 6: Screw terminal female and copper bus bar terminal									
Special code <sup>1)</sup>	XXX: Customer special requirement Nil: Standard									

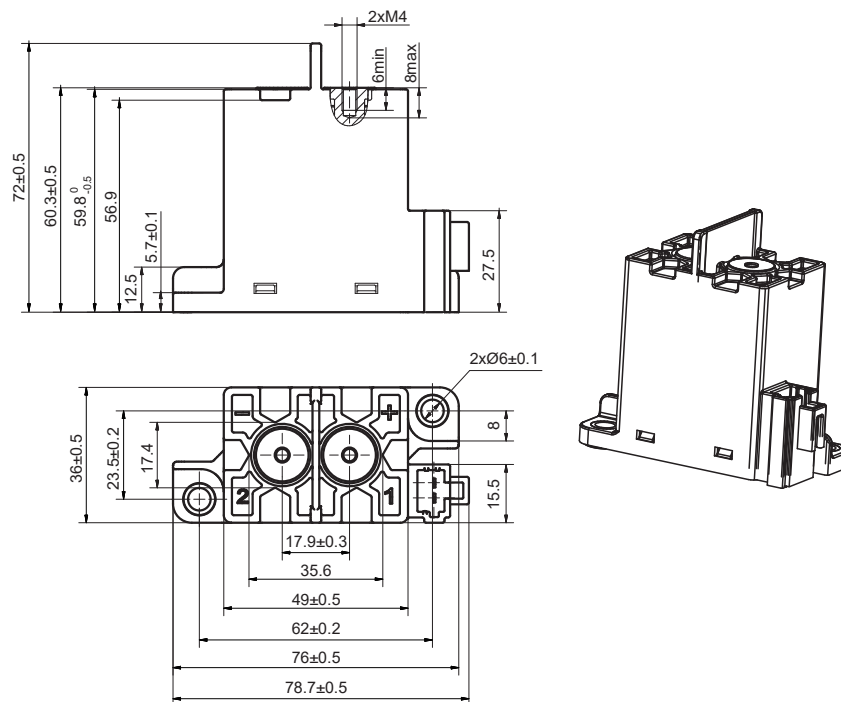
Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

## OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT

Unit: mm

### Outline Dimensions

HFE82V-150D/XXX-XX-HC5

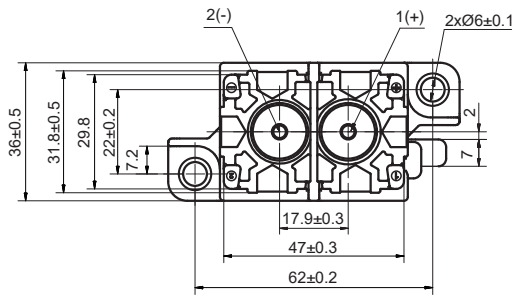
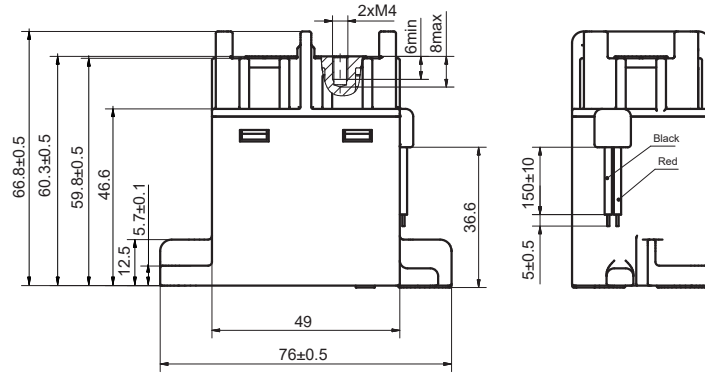


# OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT

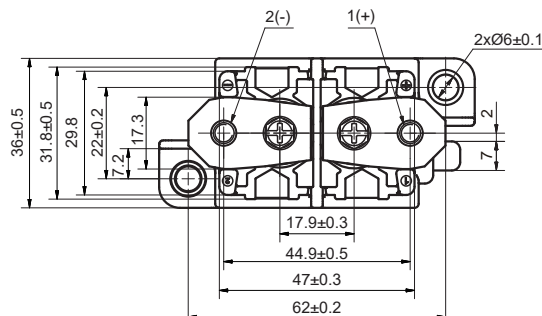
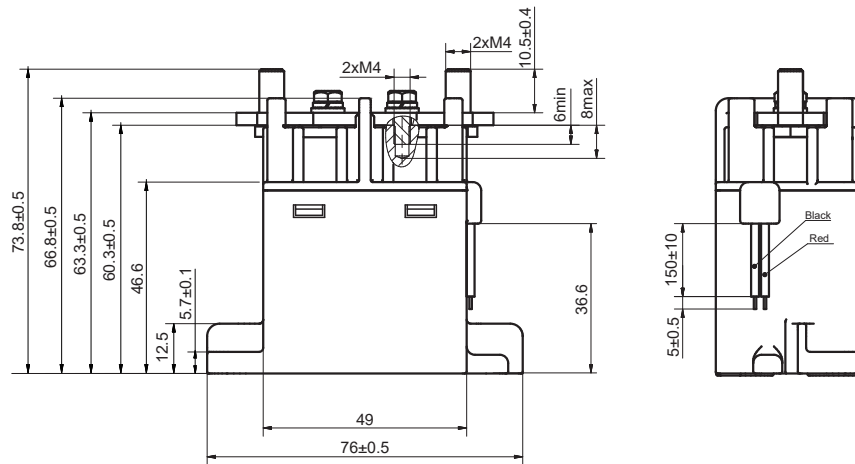
Unit: mm

## Outline Dimensions

HFE82V-150D/XXX-XX-HL5



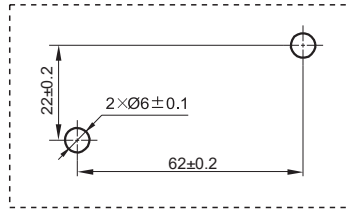
HFE82V-150D/XXX-XX-HL6



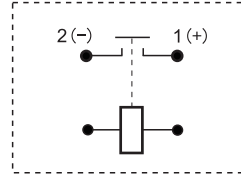
# OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT

Unit: mm

### Mounting Hole



### Terminal Arrangement



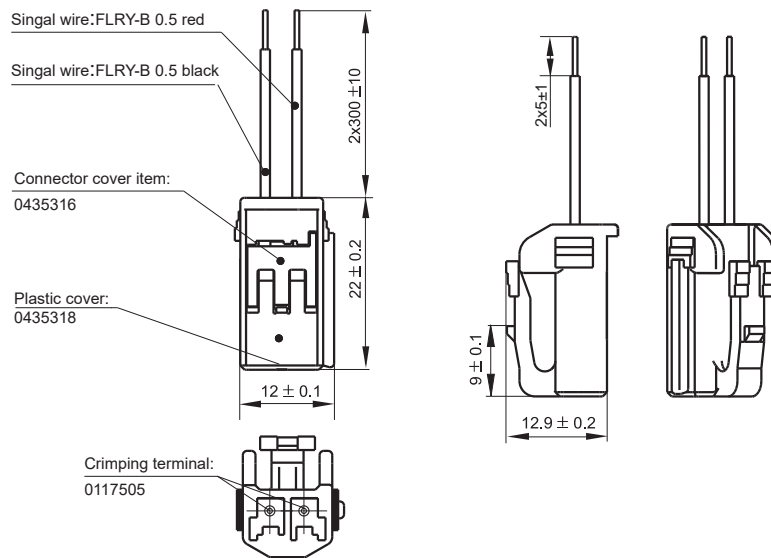
Note: The load side has polarity.  
No polarity on the coil side.

# WIRING DIAGRAM

Unit: mm

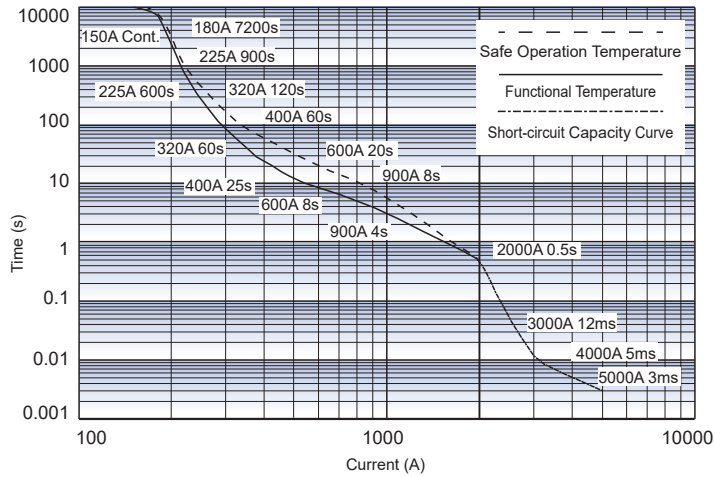
## C:Connector

(Configured by customers: Tianhai 0435 series, Yazaki 7283-1020)



# CHARACTERISTIC CURVES

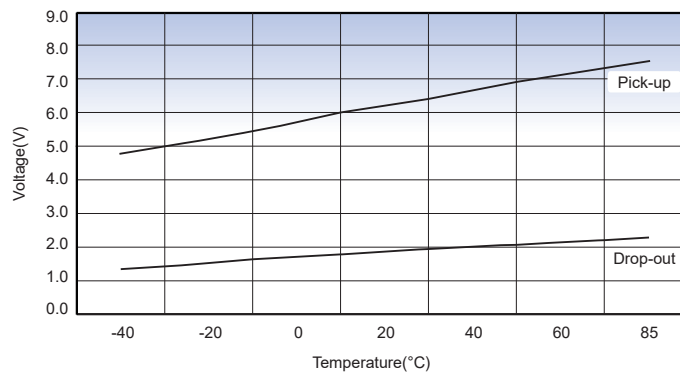
## Endurance Capacity Curve



### Notes:

1. The upper limit of safe operation temperature and functional temperature are set for 180°C and 130°C respectively.
2. If the product needs to be operated for a long time, the upper temperature limit should not exceed 130°C; If the safe operation temperature of 180°C is exceeded, the relay may also catch fire;
3. The data above is measured at the environment temperature 85°C, with cross section area of wire  $\geq 50\text{mm}^2$ .
4. When the relay is operated under current  $\cong 2000\text{A}$  for a long-term, it may weld without fire or explosion.
5. The dash-dotted line refers to the short-circuit capacity curve of the relay without fire or explosion; when the short-circuit current is  $\cong 3000\text{A}$ , the contact may open.

## Pick-up Voltage / Drop-out Voltage Curve



## CAUTIONS

- In case of loosening, please use washer when install the relay with M5 screw, and the torque within 3N·m to 4N·m, The torque beyond the range may cause damage.

HFE82V-150D/XXX-XX-HL5

Mounting for load terminal				Relay mounting	
Mounting way	Torque requirement	Hole dia. of copper bus bar	Thickness of copper bus bar	Mounting way	Torque requirement
M4 Screw	2N·m~3N·m	Ø4.0mm~Ø4.5mm	3mm	M5 Screw	3N·m ~ 4N·m

HFE82V-150D/XXX-XX-HL6

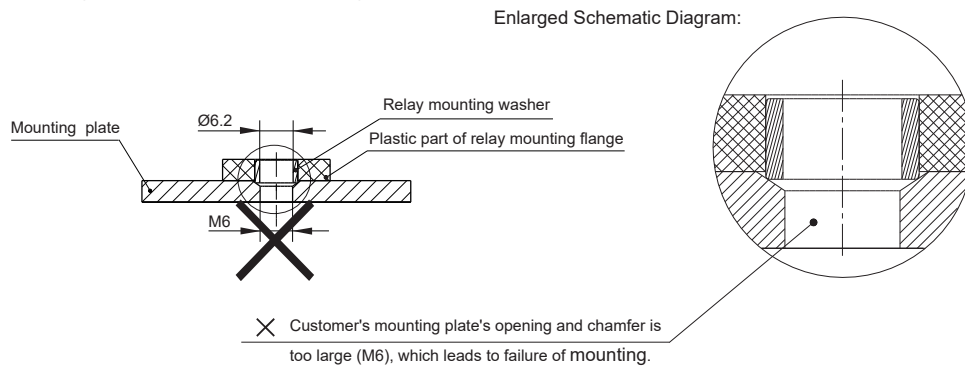
Mounting for load terminal				Relay mounting	
Mounting way	Torque requirement	Hole dia. of copper bus bar	Thickness of copper bus bar	Mounting way	Torque requirement
M6 Screw	6N·m~8N·m	Ø6.0mm~Ø6.5mm	2~3mm	M5 Screw	3N·m ~ 4N·m

- Be careful that oils and foreign matter do not stick to the main terminal part and please use the wire with min. cross section area 50mm<sup>2</sup>, otherwise the terminal parts may have abnormal heating.

- Caution of relay mounting:

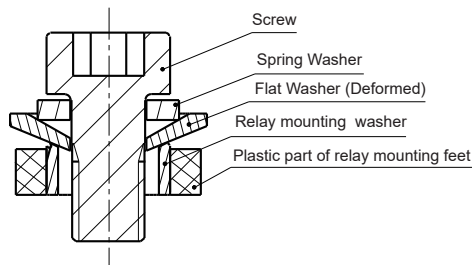
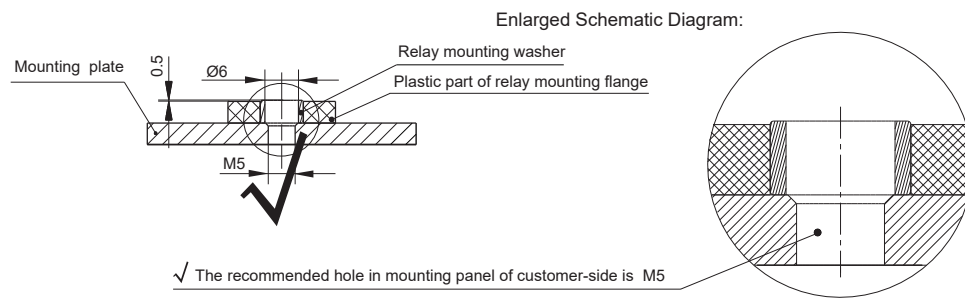
### Unrecommended method

The hole of mounting plate at customer-side is too large.



### Recommended method

The hole in mounting plate at customer-side is M5



When use M5 screw, the thickness and strength of the washer needs to be guaranteed or it may deform and burst the cover.

## Disclaimer

The specification is for reference only. See to "Terminology and Guidelines" for more information. Specifications subject to change without notice. We could not evaluate all the performance and all the parameters for every possible application. Thus the user should be in a right position to choose the suitable product for their own application. If there is any query, please contact Hongfa for the technical service. However, it is the user's responsibility to determine which product should be used only.

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