

HFE82V-20

DIRECT CURRENT RELAY



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 20A 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.
- No specific polarity requirements for the connection

CONTACT DATA

Contact arrangement	1 Form A	
Contact resistance ¹⁾	≤4.5mΩ(at 20A)	
Contact rating	20A	
Mechanical endurance	2 x 10 ⁶ ops	
	Type 450V	Type 750V
Max. switching voltage	450 VDC	750 VDC
Max. breaking current	200A (1000 VDC) 1op	200A (1000 VDC) 1op
Max. switching power	18kW	30kW
Electrical endurance ²⁾	Switching: 7.5 x 10 ⁴ ops (450 VDC,20A)	Switching: 5 x 10 ⁴ ops (750 VDC,20A)
	Type 1000V	
Max. switching voltage	1000 VDC	
Max. breaking current	200A (1000 VDC) 1op	
Max. switching power	30kW	
Electrical endurance ²⁾	Switching:3 x 10 ⁴ ops(1000 VDC,20A)	
Current carrying ³⁾ capacity	20A: Cont.	
	30A: 1h	
	40A:20min	
	80A:30s	
	120A:10s	
	200A: 0.6s	

Notes: 1) The above values are the initial values.

2) 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.

3) Ambient temperature is at 85°C and cross section area of wire is 4mm² 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	2.6
24	≤18	≥2	2.6
48	≤36	≥4	2.6

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 ²
	Destructive	490m/s ²
Vibration resistance		10Hz~500Hz 49m/s ²
Humidity		5%~85% RH
Ambient temperature		-40°C~85°C
Load terminal structure		QC terminal
Unit weight		Approx. 140g
Outline Dimensions		78.0 x 39.8 x 46.1mm

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



HONGFA RELAY

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

2022 Rev. 1.00

ORDERING INFORMATION

Type	HFE82	V	-20/	1000-	12 -	H-	Q	2	J	-1	(XXX)
Application	V: Vehicle										
Contact rating	20: 20A										
Load voltage	Nil: 450 VDC 750: 750 VDC 1000: 1000 VDC										
Coil voltage	12: 12 VDC 24: 24 VDC 48: 48 VDC										
Contact arrangement	H: 1 Form A										
Coil terminal structure	Q: QC terminal										
Load terminal structure	2: QC terminal										
Base structure	J: Layout base without mounting boss										
Coil characteristic	1: Single coil										
Special code ¹⁾	XXX: Customer special requirement Nil: Standard										

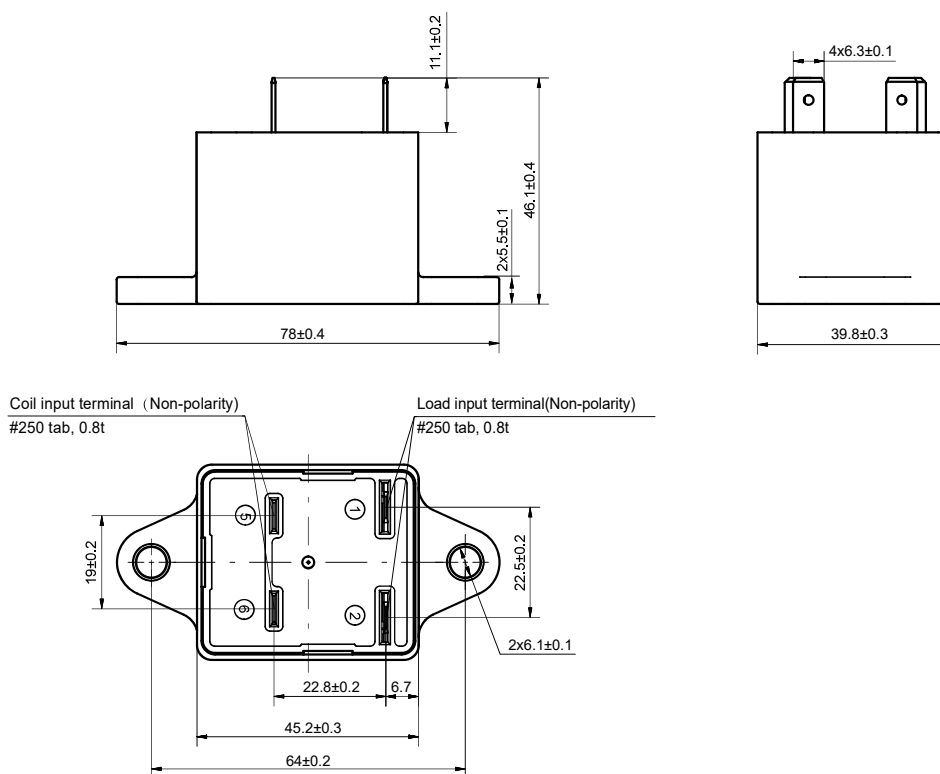
Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT

Unit: mm

Outline Dimensions

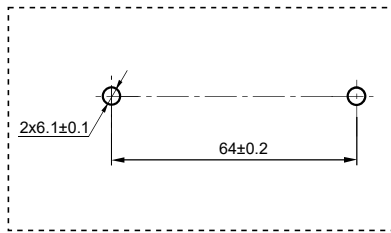
HFE82V-20/XXX-XX-H-Q2J-1



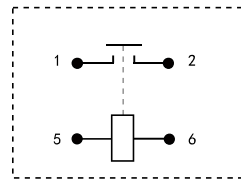
OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT

Unit: mm

Mounting Hole



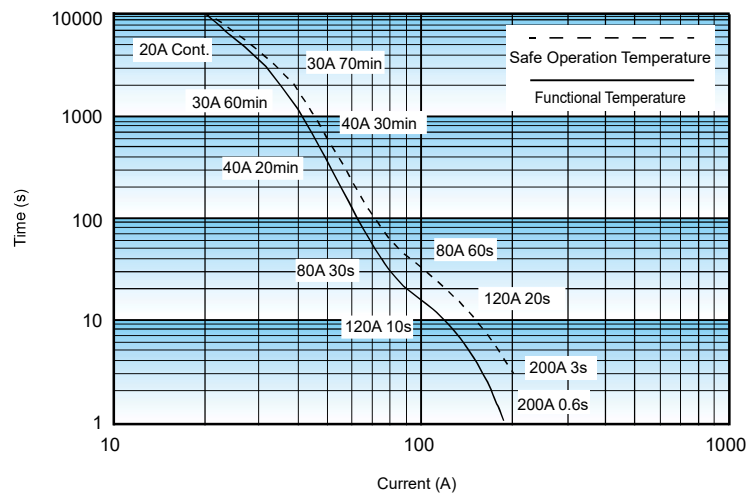
Terminal Arrangement



Note: No polarity on the load and coil sides.

CHARACTERISTIC CURVES

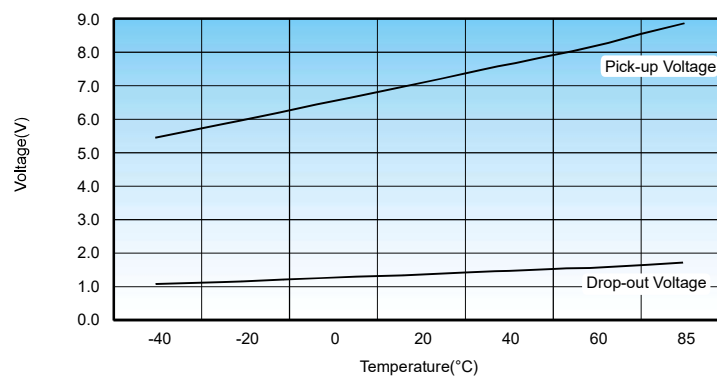
Endurance Capacity Curve



Notes:

1. The upper limit of safe operation temperature and functional temperature are set for 180°C and 130°C respectively.
2. To maintain the maximum long-term operating performance, absolute temperature should not exceed 130°C.
3. The data above is measured at the environment temperature 85°C with cross section area of wire $\geq 4\text{mm}^2$.
4. When the current is $\geq 200\text{A}$, the relay is likely to weld.

Pick-up Voltage / Drop-out Voltage Curve



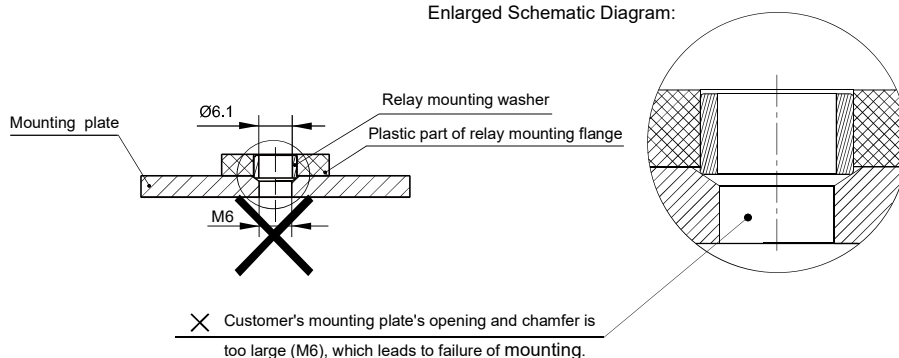
CAUTIONS

1. In case of loosening, please use washer when mount the relay with M5 screw, and the torque within 3N·m to 4N·m, the push and pull force for terminals is 49N for load terminals and 49N for coil terminals. The torque beyond the range may cause damage.
2. 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 4mm², otherwise the terminal parts may have abnormal heating.
3. Cautions of mounting for relay body:

Unrecommended method

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

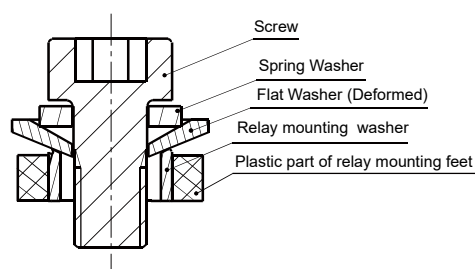
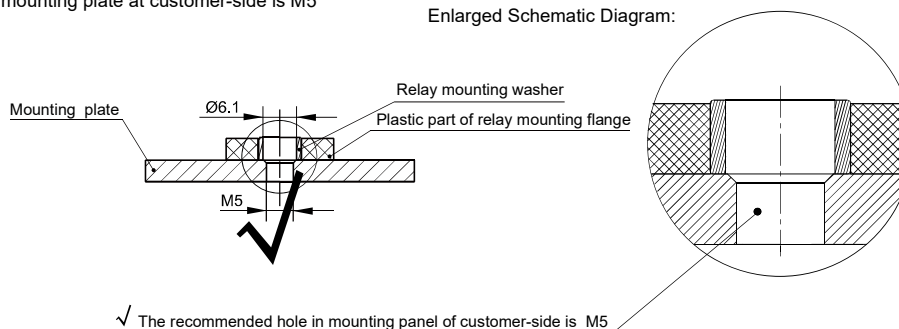
Enlarged Schematic Diagram:



Recommended method

The hole in mounting plate at customer-side is M5

Enlarged Schematic Diagram:



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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