

# HFE80V-20C

# DIRECT CURRENT RELAY



RoHS compliant

### Features

- Pre-charging relay for new energy automobile.
- Carrying current 20A continuously at 85°C.
- The electricity safety meets the requirements of IEC 60664-1.

### CONTACT DATA

Contact arrangement	1 Form A
Contact resistance	≤5mΩ(at 1A)
Contact rating	20A
Mechanical endurance	2x10 <sup>5</sup> ops
Max. switching voltage	750 VDC
Max. breaking current	30A(450 VDC) 5ops
Max. switching power	18kW
Electrical <sup>1)</sup> endurance	Switching:3×10 <sup>3</sup> ops(450 VDC 20A)
	Switching:1×10 <sup>4</sup> ops(450 VDC 10A)
	Making:7.5×10 <sup>4</sup> ops(450 VDC 20A)
Current carrying <sup>2)</sup> capacity	20A:Cont.
	30A:1h
	40A:20min
	80A:30s
	120A:10s
	200A: 0.6s

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 4mm<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	3
24	≤18	≥2	3
48	≤36	≥4	3

### CHARACTERISTICS

Insulation resistance		1000MΩ(500 VDC)
Dielectric strength	Between coil & contacts	3000 VAC 1min
	Between open contacts	2000 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		QC or PCB terminal
Unit weight		Approx.50g
Outline Dimensions		30.1x30.0x29.2mm

Notes: Above is the initial value in the room temperature



HONGFA RELAY

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

2021 Rev. 1.00

## ORDERING INFORMATION

Type	HFE80 V -20 C/ 450- 12- H T Q 2 A J (XXX)										
Application	V: Vehicle										
Contact rating	20: 20A										
Series breakdown	C: C series										
Load voltage	450: 450 VDC										
Coil voltage	12: 12 VDC 24: 24 VDC 48: 48 VDC										
Contact arrangement	H: 1 Form A										
Contact material	T: AgSnO <sub>2</sub>										
Coil terminal structure	Q: QC terminal P: PCB terminal										
Load terminal structure	2: QC terminal Nil: PCB terminal										
Shell structure	Nil: Standard mounting boss A: A type mounting flange B: B type mounting flange L: L type mounting flange										
Base structure	J: Layout base without mounting boss										
Special code <sup>1)</sup>	XXX: Customer special requirement Nil: Standard										

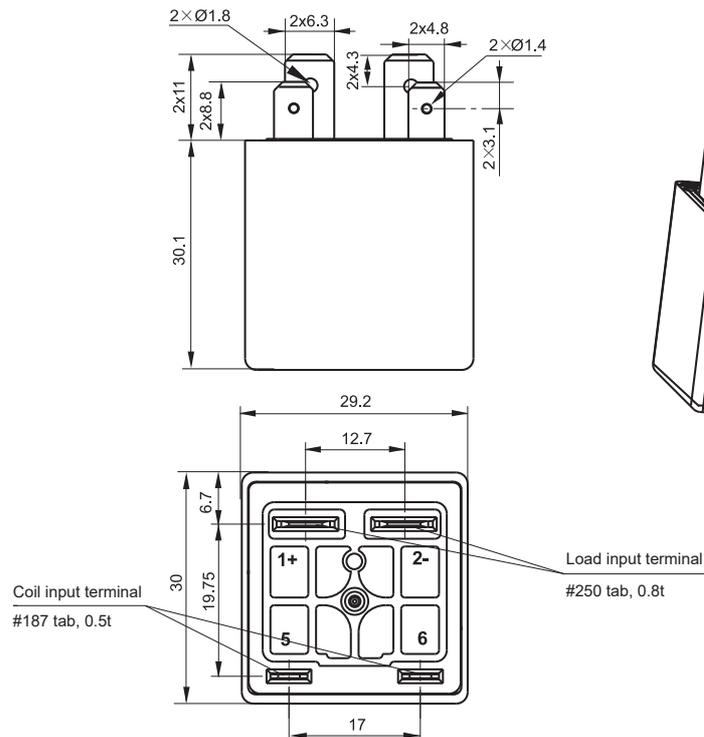
Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

## OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT

Unit: mm

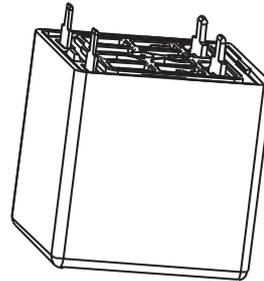
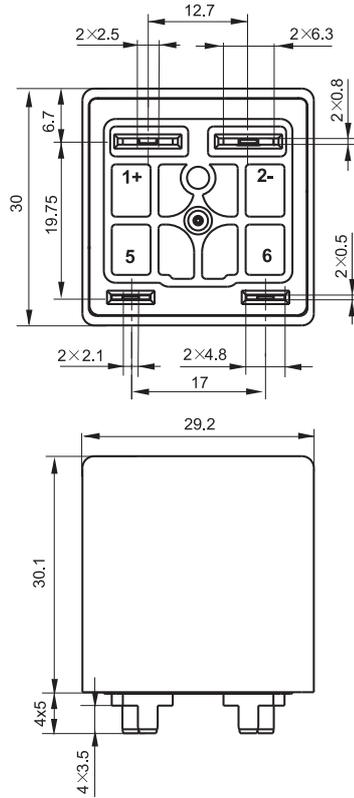
### Outline Dimensions

HFE80V-20C/XXX-XX-HTQ2AJ

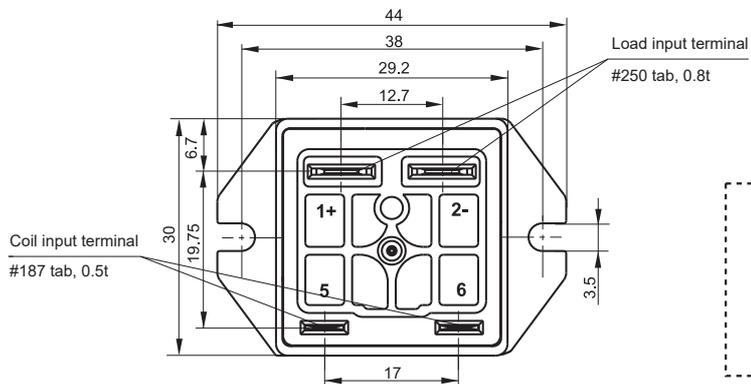
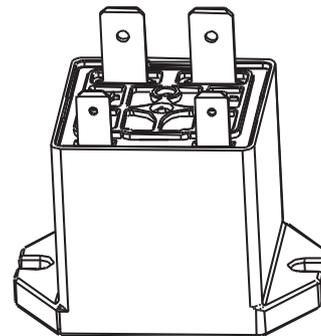
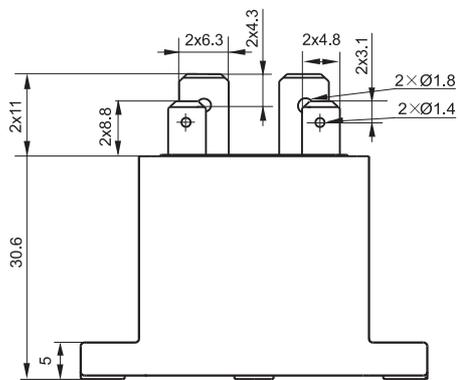


Outline Dimensions

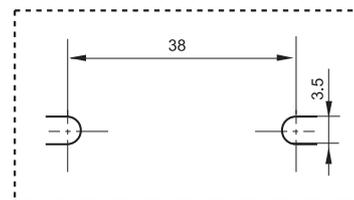
HFE80V-20C/XXX-XX-HTPAJ



HFE80V-20C/XXX-XX-HTQ2J



Mounting Hole



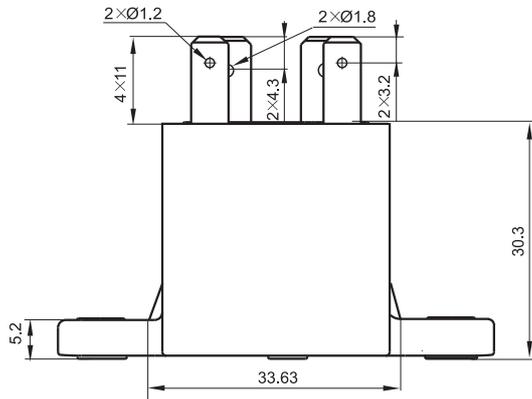


# OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT

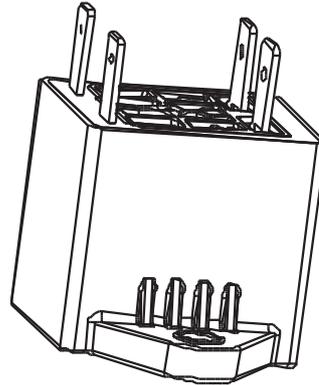
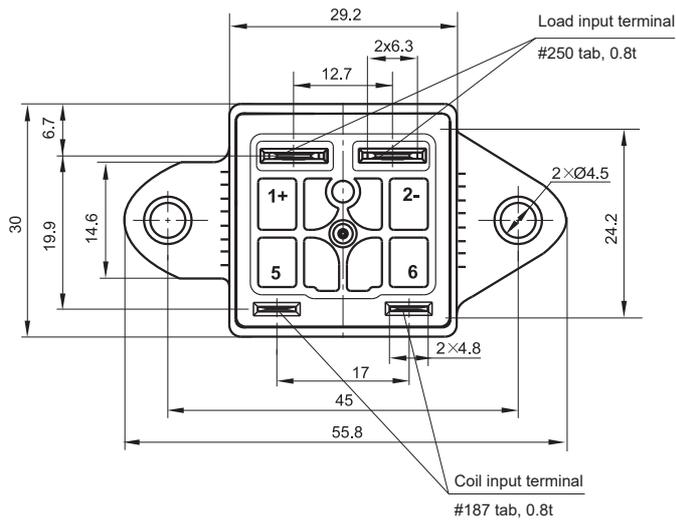
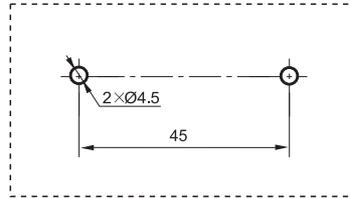
Unit: mm

## Outline Dimensions

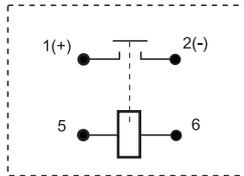
HFE80V-20C/XXX-XX-HTQ2LJ



### Mounting Hole



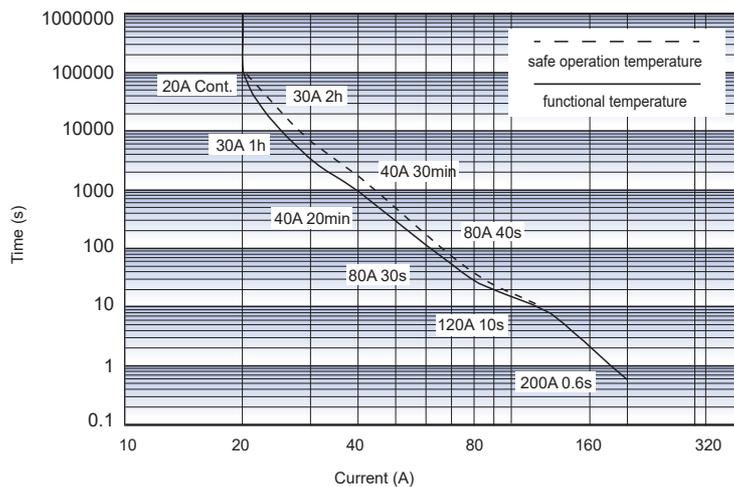
### Terminal Arrangement



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

## CHARACTERISTIC CURVES

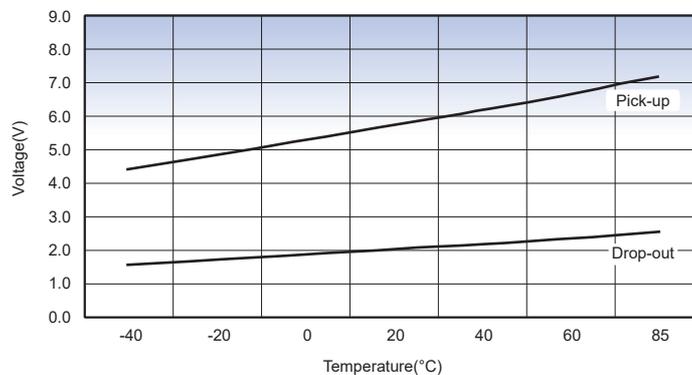
Endurance Capacity Curve



Notes:

1. The upper limit of safe operation temperature and functional temperature are 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.
3. The ambient temperature is 85°C, and the cross-sectional area of the wire is  $\geq 4\text{mm}^2$ .
4. The energized voltage of coil refers to the rated coil voltage.

Pick-up Voltage / Drop-out Voltage Curve



## CAUTIONS

1. In case of loosening, please use M4 screw for HTQ2BJ terminal mounting, and the screw tightening torque shall be within 2N.m to 3N.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  $4\text{mm}^2$ , otherwise the terminal parts may have abnormal heating.

## 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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