HFE80V-40 DIRECT CURRENT RELAY

c UL us
File No.:E133481
RoHS compliant

Features

- Pre-charging and heating relay for new energy automobile.
- Carrying current 40A 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	40A
Mechanical endurance	$2x10^5$ops
Max. switching voltage	750 VDC
Max. breaking current	50A(450 VDC) ≥1op
Max. switching power	27kW
Electrical 1) endurance	Switching:$1×10^3$ ops(450 VDC, 40A)
	Switching:$1×10^4$ ops(450 VDC, 10A)
	Making:$7.5×10^4$ ops(450 VDC, 35A)
Current carrying 2) capacity	40A:Cont.
	60A:1h
	80A:20min
	160A:30s
	240A:10s
	400A: 0.6s

Notes: 1) Unless otherwise specified, the temperature of eletrical 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 10mm² 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/s²
	Destructive	490m/s²
Vibration resistance		10Hz ~ 500Hz 49m/s²
Humidity		5% ~ 85% RH
Ambient temperature		-40°C~ 85°C
Load terminal structure		QC or PCB terminal
Unit weight		Approx.51g
Outline Dimensions		30.1x30.0x29.2mm

Notes: Above is the initial vale in the room temperature

ORDERING INFORMATION

	HFE80	V	-40/	450-	12-	H	T	Q	2	A	J	(XXX)
Type												
Application	**V:** Vehicle											
Contact rating	**20:** 20A											
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:** $AgSnO_2$											
Coil terminal structure	**Q:** QC terminal **P:** PCB terminal											
Load terminal structurel	**2:** QC terminal **Nil:** PCB terminal											
Shell structure	**Nil:** Standard mounting boss **A:** A type mounting flange **B:** B type mounting flange **L:** Ltype mounting flange											
Base structure	**J:** Layout base without mounting boss											
Special code[1)]	**XXX:** Customer special requirement **Nil:** Standard											

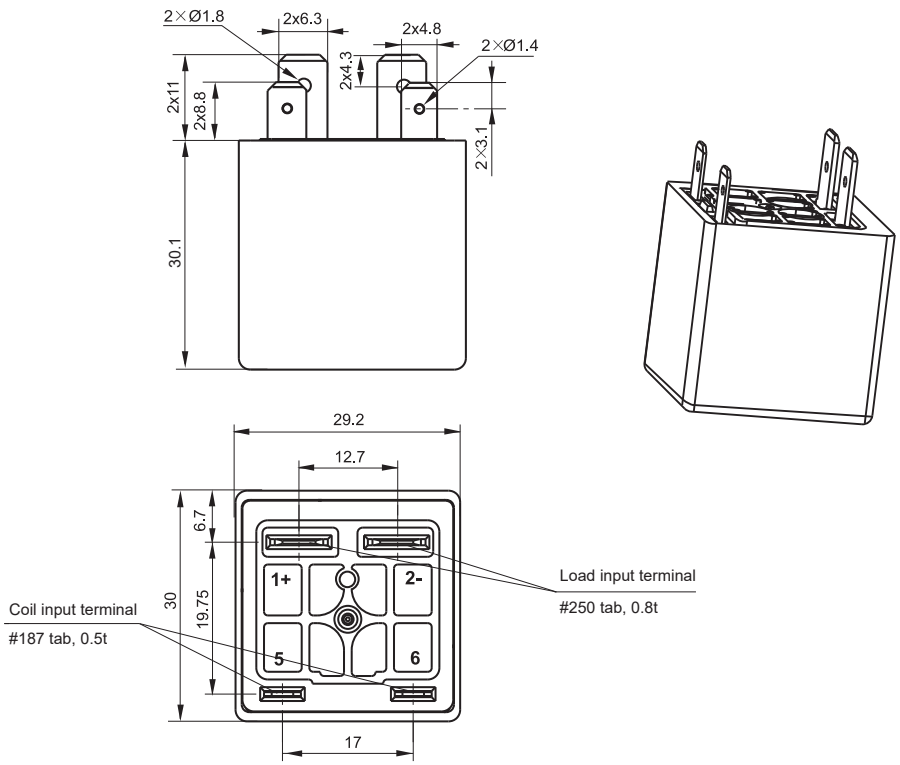
Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT

Unit: mm

Outline Dimensions

HFE80V-40/XXX-XX-HTQ2AJ

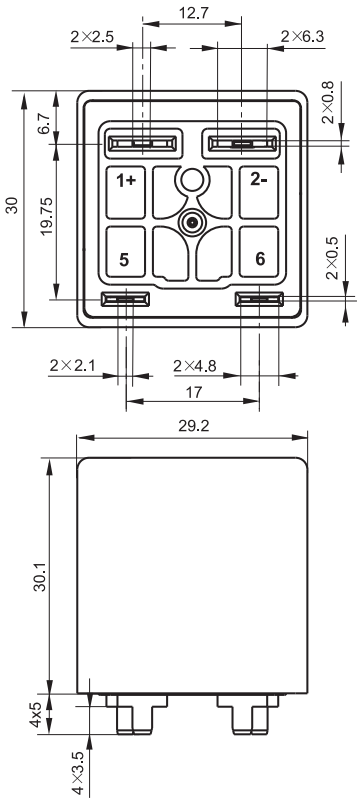


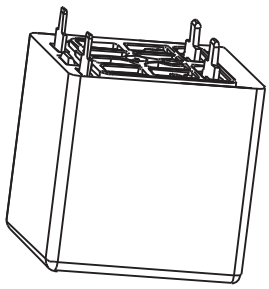
OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT

Unit: mm

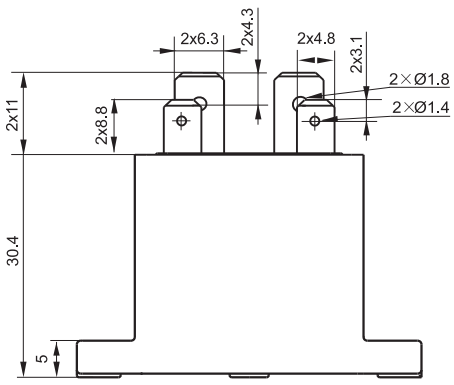
Outline Dimensions

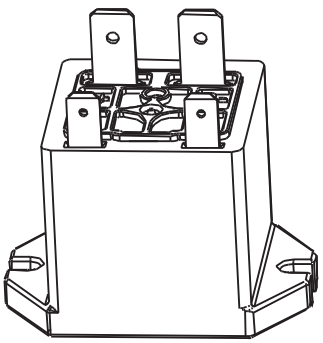
HFE80V-40/XXX-XX-HTPAJ

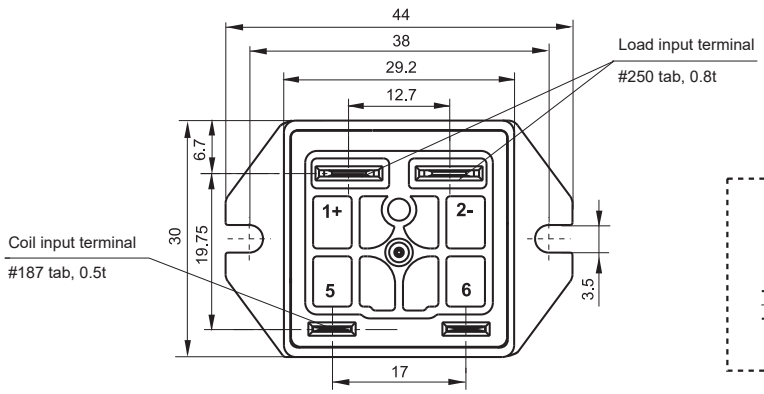




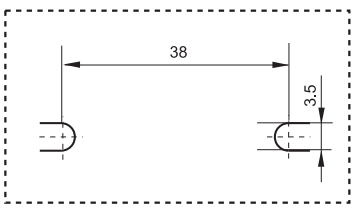
HFE80V-40/XXX-XX-HTQ2J







Mounting Hole

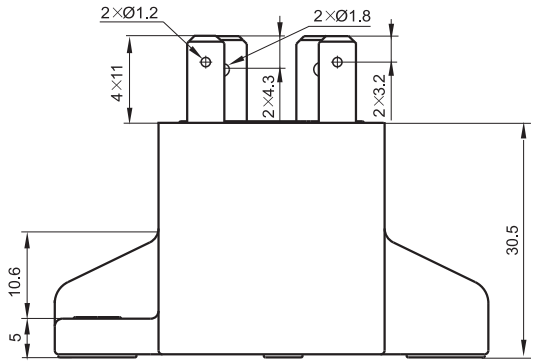


OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT

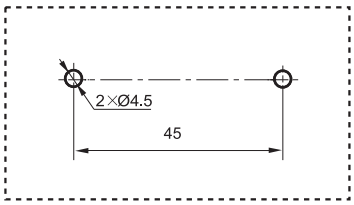
Unit: mm

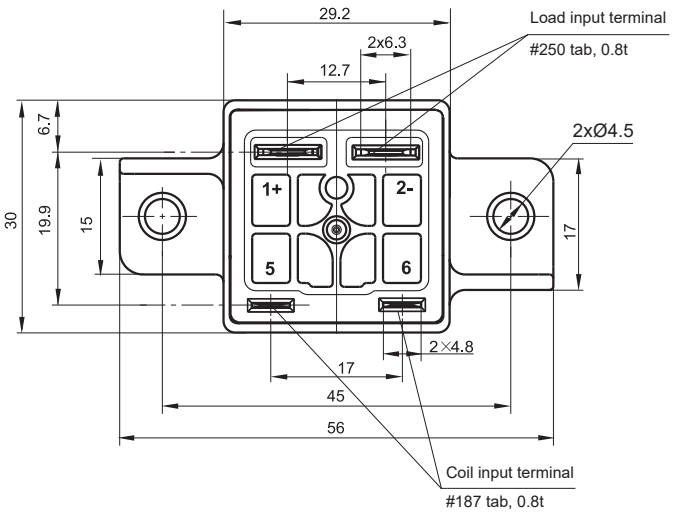
Outline Dimensions

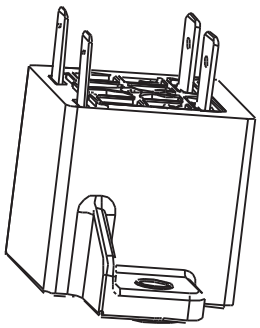
HFE80V-40/XXX-XX-HTQ2BJ



Mounting Hole





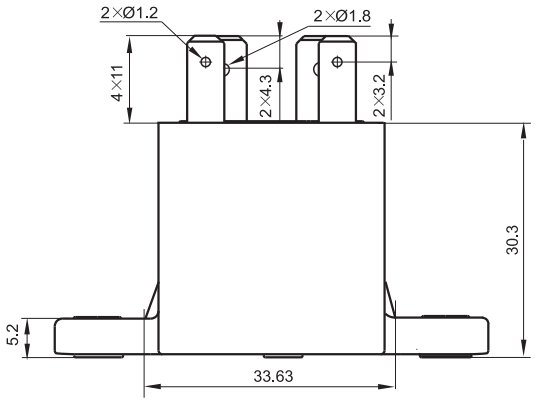


OUTLINE DIMENSIONS, MOUNTING HOLE, TERMINAL ARRANGEMENT

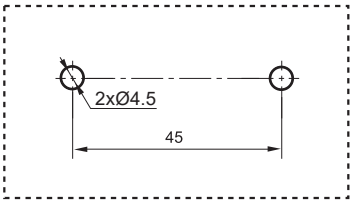
Unit: mm

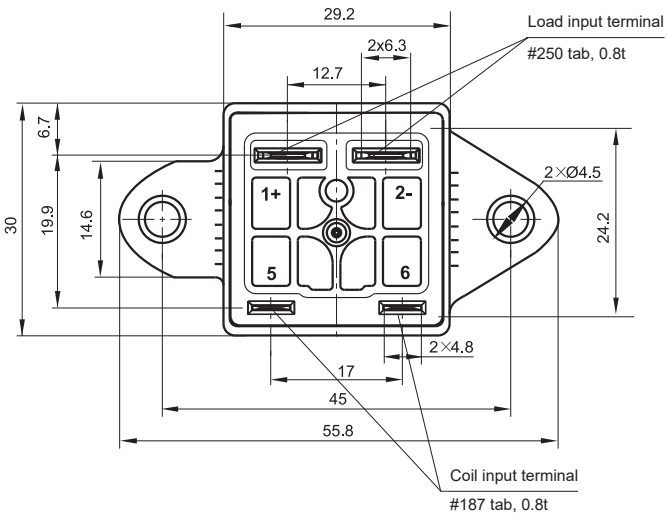
Outline Dimensions

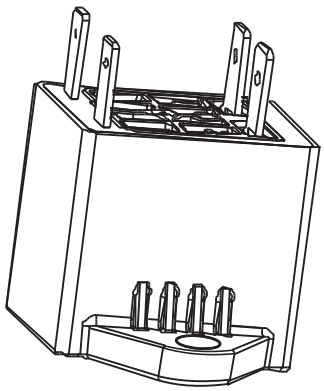
HFE80V-40/XXX-XX-HTQ2LJ



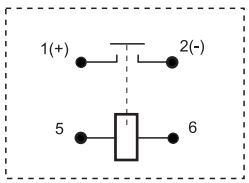
Mounting Hole







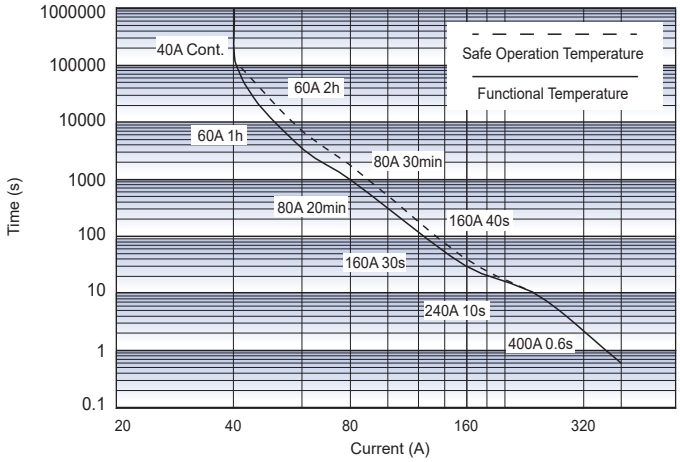
Terminal Arrangement



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

CHARACTERISTIC CURVES

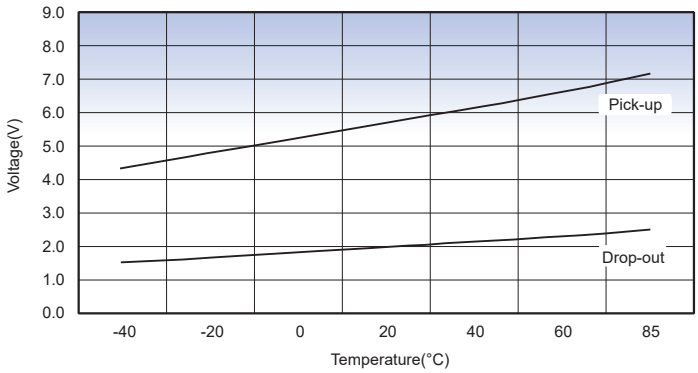
Endurance Capacity Curve



Notes:

1.The upper limit of safe operation temperature and functional temperature are 180℃ and 130℃ respectively.
2.If the product needs to be operated for a long time, the upper temperature limit should not exceed 130℃.
3.The ambient temperature is 85℃, and the cross-sectional area of the wire is ≥10mm^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 washer for relay mounting. The screw tightening torque shall be within 0.8N.m to 1.1N.m for M3 screw, and within 2N.m to 3N.m for M4 screw. 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 10mm^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.