

HFV6-LG

AUTOMOTIVE MAGNETIC RELAY



Features

- Low power consumption, high current carrying capacity
- Small Volume, high load capacity
- High heat resistance, can be installed in front cabin
- With magnetic retention function
- RoHS & ELV compliant

Typical Applications

Suitable for resistance, sensibility and capacitive load control, such as power management, heating control, lamp control, engine start-stop control, EPS.

CHARACTERISTICS

Contact arrangement	1A	
Voltage drop ⁽¹⁾	Typ.150mV(10A) Max.250mV(10A)	
Coil resistance ⁽²⁾	75×(1±10%) Ω/coil	
Max. continuous current ⁽³⁾	30A(23°C),25A(85°C),20A(125°C)	
Max. switching current ⁽⁴⁾	Make: 100A, Breake: 33A	
Max. switching Voltage	16VDC	
Min. contact load	1A 12VDC	
Electrical endurance	See "CONTACT DATA"	
Mechanical endurance	1×10 ⁶ ops	
Initial insulation resistance ⁽⁵⁾	100 MΩ(500VDC)	
Withstand voltage ⁽⁶⁾	500VAC	
Operate time ⁽⁶⁾	10ms max	
Release time	10ms max	
Ambient temperature	-40°C to 125°C	
Vibration resistance ⁽⁷⁾	Functional	10Hz to 100 Hz, 43 m/s ²
	Destructive	10Hz to 500 Hz, 43 m/s ²

Shock resistance ⁽⁷⁾	Functional	100 m/s ²
	Destructive	1000 m/s ²
Flammability	UL94-HB	
Termination	QC ⁽⁸⁾	
Construction	Dust protected	
Unit weight	Approx. 17g	
Mechanical date ⁽⁹⁾	cover retention (pull & push): 200N min. terminal retention (pull & push): 100N min. terminal resistance to bending (front & side): 10N min. ⁽⁹⁾	

- 1) Initial value, equivalent to maximum, initial contact resistance 10mΩ;
- 2) Measured without shunt resistance;
- 3) For NO contacts, measured when applying 100% rated voltage on coil;
- 4) Inrush peak current under lamp load, at 13.5VDC.
- 5) 1min, leakage current less than 1mA.
- 6) The value is measured when voltage drops suddenly from nominal voltage to 0 VDC and coil is not paralleled with suppression circuit.
- 7) When energized, opening time of NO contacts shall not exceed 1ms, when non-energized, opening time of NC contacts shall not exceed 1ms, meantime, NO contacts shall not be closed.
- 8) Do NOT knock on relays with hard objects such as rubber rod and rubber hammer during mounting, which might lead to relay damage.
- 9) Test point is at 2mm away from terminal end, and after removing testing force, the terminal transfiguration shall not exceed 0.5mm.

COIL DATA ¹⁾

Nominal voltage VDC	Set voltage VDC max			Reset voltage VDC max			Coil Resistance ×(1±10%)Ω	Parallel resistance ×(1±5%)Ω	Set equivalent Resistance ×(1±10%)Ω	Reset equivalent Resistance ×(1±10%)Ω	Wiring Diagram
	-40°C	23°C	125°C	-40°C	23°C	125°C					
12	5.4	7.2	10.2	5.4	7.2	10.2	75	—	—	—	See diagram 1
12	5.4	7.2	10.2	5.4	7.2	10.2	75	1200	70.5	70.5	See diagram 2 diagram 3
12	5.4	7.2	10.2	5.4	7.2	10.2	75	—	—	—	See diagram 4



HONGFA RELAY

ISO9001, IATF16949, ISO14001, ISO45001, IECQ QC 080000, ISO/IEC 27001 CERTIFIED

2025 Rev. 1.00

Notes: 1) The pulse width should be between 10ms and 100ms, and the excitation voltage mode should be as shown in the figure below:

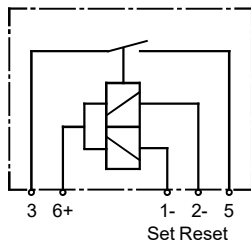


diagram 1

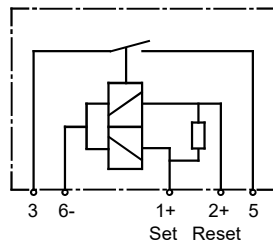


diagram 2

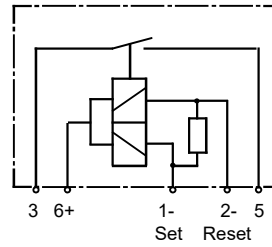


diagram 3

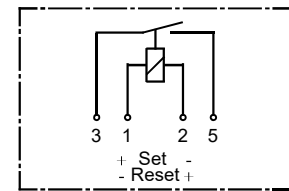


diagram 4

Polarity of set / reset	Set	Reset	Load wiring diagram
Energization	Pin1 (-) ,pin6 (+)	pin2 (-) ,pin6 (+)	See diagram 1,diagram 3
Energization	pin1 (+) ,pin6 (-)	pin2 (+) ,pin6 (-)	See diagram 2
Energization	pin1 (+) ,pin2 (-)	pin1 (-) ,pin2 (+)	See diagram 4

CONTACT DATA¹⁾

Load voltage	Load type		Load current A	On/Off ratio		Electrical endurance ops	Contact material	Load wiring diagram
			1A	On	Off			
			NO	s	s			
14 VDC	Resistive	Make	30	2	2	1×10^5	AgSnO ₂	See diagram 5
		Break	30					
	Lamp L=0.5mH	Make	80	2	2	1×10^5	AgSnO ₂	See diagram 6
		Break	33					
	Inductive	Make	100	2	2	1×10^5	AgSnO ₂	See diagram 7
		Break	20					

Notes: 1) Please also contact Hongfa if the actual application load is different from what mentioned above.

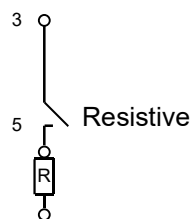


diagram 5

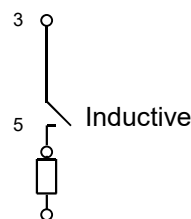


diagram 6

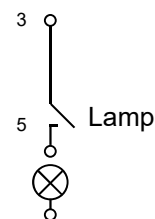


diagram 7

ORDERING INFORMATION

Type	HFV6	-LG	/12	-H	L1	T	G	J	-R	(XXX)
Extension code	L: Normal load LG: High load									
Coil voltage	12: 12VDC									
Contact arrangement	H: 1 Form A									
Coil characteristics	L1: Single coil L2: Double coil									
Contact material	T: AgSnO ₂									
Contacts plating	G: Gold plated contact					Nil: Uncoated				
Terminal	J: QC Terminal without hole Nil: QC Terminal with hole									
Parallel coil components	R: Parallel transient suppression resistors Nil: Without parallel components									
Special code ⁽¹⁾	079: Set/Reset voltage ≤ 6V 539: the 6 pins of the coil signal are + Nil: Standard									

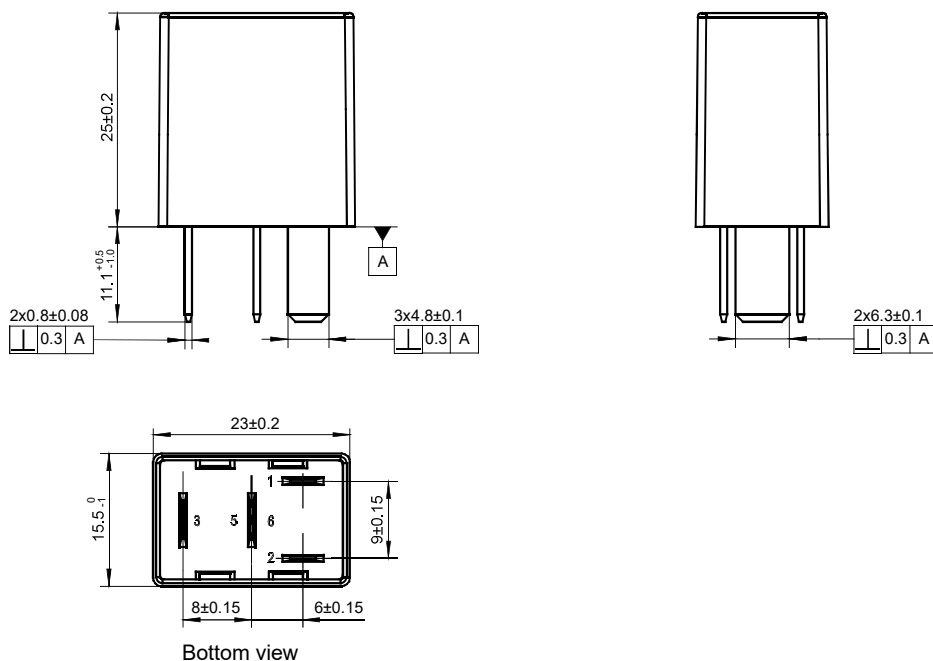
Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.
e.g.(539) stands for the 6 pins of the coil signal are +.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND TERMINAL FUNCTION DEFINITION

Unit: mm

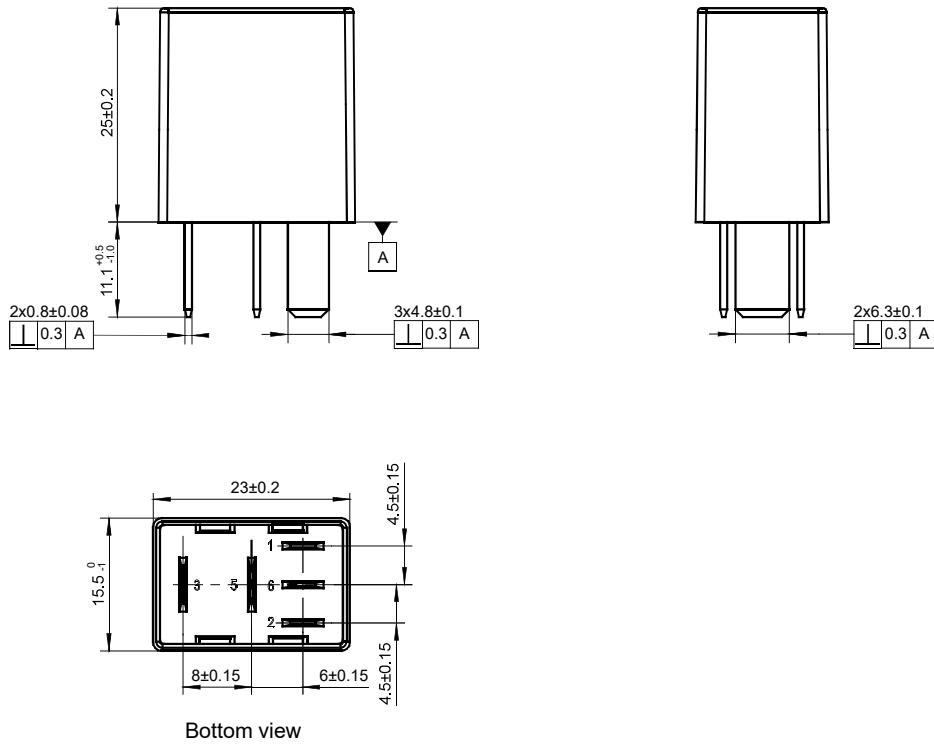
Outline Dimensions

HFV6-LG/12-HL1TGJ



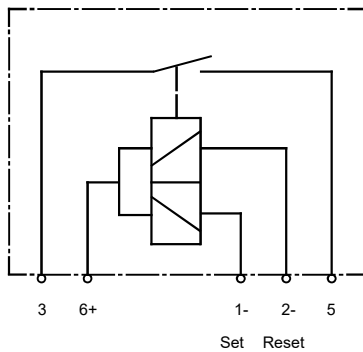
Outline Dimensions

HFV6-□/□-HL2TJ-□(XXX)(XXX)

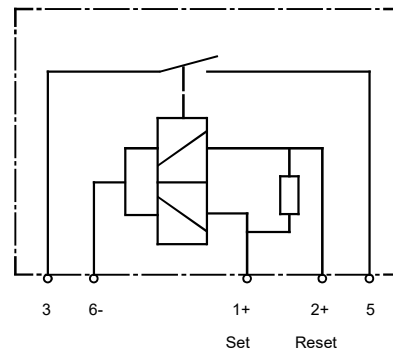


Wiring Diagram

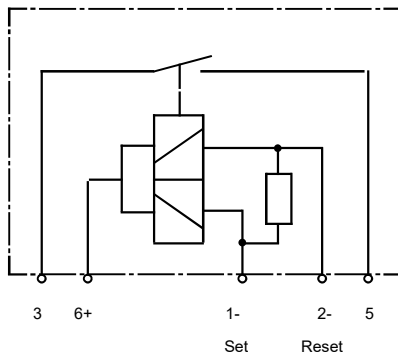
HFV6-LG/12-HL2TJ(079)(539)



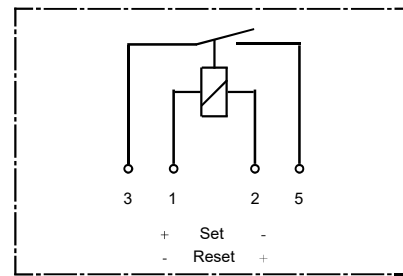
HFV6-LG/12-HL2TJ-R



HFV6-LG/12-HL2TJ-R(539)



HFV6-LG/12-HL1TGJ



Notice:

- 1) Bistable relays are delivered in the reset position. Due to mechanical impacts while transportation, we advise to check the contact status after the incoming.
- 2) Keep the product away from strong magnetic field during transportation, storage and application, to avoid change of set or reset voltage.

Disclaimer

The specification is for reference only. See to "Terminology and Guidelines" for more information. Specifications subject to change without notice. In case there is specific criterion (such as mission profile, technical specification, PPAP etc.) checked and agreed by and between customer and Hongfa, this specific criterion should be taken as standard regarding any requirement on Hongfa product. 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.