

HFV15N

AUTOMOTIVE RELAY

Typical Applications

Horn control, Motor control



Features

- 40A switching capability
- Various mounting terminations available
- 1 Form A (2 x 87) contact arrangement
- RoHS & ELV compliant

CHARACTERISTICS

Contact arrangement	1A
Voltage drop	Typ. 40mV (at 10A)
	Max. initial: 100mV (at 10A)
	Max. after test: 250mV (at 10A)
Max. continuous current ¹⁾⁸⁾	60A continuous (at 23°C),
	40A continuous (at 85°C),
	17A continuous (at 125°C)
Max. switching current ⁸⁾	Make: 150A ²⁾ Break: 40A (Resistive, 13.5VDC)
Min. contact load	1A 12VDC
Electrical endurance	See "CONTACT DATA"
Mechanical endurance	1 x 10 ⁶ OPS (300 OPS/min)
Initial insulation resistance	100MΩ (at 500VDC)
Withstand voltage ³⁾	500VAC
Operate time ⁸⁾	Max.: 10ms (at nomi. vol.)
Release time ⁸⁾	Max.: 10ms ⁴⁾
Ambient temperature	-40°C to 125°C
Vibration resistance ⁵⁾⁸⁾	5Hz to 22.3Hz 10mm DA 22.3Hz to 500Hz 98m/s ²

Shock resistance ⁵⁾⁸⁾	294m/s ²
Flammability ⁶⁾	UL94-HB or better (meets FMVSS 302)
Termination	QC
Construction	Plastic sealed, Dust protected
Unit weight	Approx. 35g
Mechanical data	housing retention (pull & push): 200N min.
	terminal retention (pull & push): 100N min. terminal resistance to bending (front & side): 10N min. ⁷⁾

- 1) Measured when applying 100% rated voltage on coil.
- 2) Inrush peak current under lamp load, at 13.5VDC.
- 3) 1min, leakage current less than 1mA.
- 4) The value is measured when voltage drops suddenly from nominal voltage to 0 VDC and coil is not paralleled with suppression circuit.
- 5) When energized, opening time of NO contacts shall not exceed 100us.
- 6) FMVSS: Federal Motor Vehicle Safety Standard.
- 7) Test point is at 2mm away from terminal end, and after removing testing force, the terminal transfiguration shall not exceed 0.5mm.
- 8) Only for the 12VDC coil voltage type.
- 9) Do NOT knock on relays with hard objects such as rubber rod and rubber hammer during mounting, which might lead to relay damage.

CONTACT DATA ¹⁾

Load voltage	Load type		Load current A	On/Off ratio		Electrical endurance ³⁾ OPS	Contact material	Load wiring diagram ⁴⁾	Ambient temp.
				On s	Off s				
13.5VDC	Resistive	Make	40	2	2	1×10 ⁵	AgSnO ₂	See diagram 1	See Ambient Temp. Curve
		Break	40						
	Lamp	Make	150 ²⁾	2	2	1×10 ⁵	AgSnO ₂	See diagram 2	
		Break	30						
	Inductive	Make	80	2	2	1×10 ⁵	AgSnO ₂	See diagram 3	
		Break	33						
27VDC	Resistive	Make	20	2	2	1×10 ⁵	AgSnO ₂	See diagram 1	23°C
		Break	20						

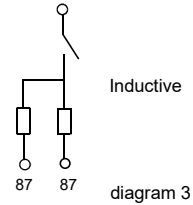
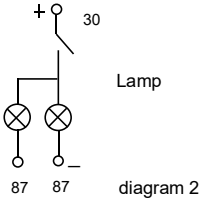
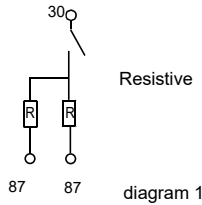


HONGFA RELAY

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

2025 Rev. 1.00

- 1) Loads mentioned in this chart is for relays with no parallel diode or Zener Diode. For those with parallel diode, Zener Diode or other components, please contact Hongfa for more technical supports.
Please also contact Hongfa if the actual application load is different from what mentioned above.
- 2) Corresponds to the peak inrush current on initial actuation (cold filament).
- 3) A low resistive or diode suppression device in parallel to the relay coil increases the release time and reduces the life time caused by increased erosion and / or higher risk of contact welding.
- 4) The contact connection diagrams are listed below :



COIL DATA

at 23°C

Nominal voltage VDC	Pick-up voltage VDC max.	Drop-out voltage VDC min.	Coil resistance	Parallel resistance ¹⁾	Equivalent resistance x(1±10%)Ω	Power consumption W	Max. allowable overdrive voltage ⁽²⁾ VDC	
							23°C	85°C
12	8	1.2	90	—	—	1.6	20.2	15.7
12	8	1.2	90	680	79.5	1.8	20.2	15.7
24	16	2.4	320	—	—	1.8	40.5	31.5
24	16	2.4	320	2700	286	2.0	40.5	31.5

1) Illustrated with the type with parallel resistor (680Ω, 12V) ,(2700Ω,24V);

2) Max. allowable overdrive voltage is stated with no load applied

ORDERING INFORMATION

	HFV15N / 12 -H 1 S T J -R (XXX)
Type	
Coil voltage	12: 12VDC 24: 24VDC
Contact arrangement	H: 1 Form A
Version	1: QC Terminal 4: Plastic Bracket
Construction ¹⁾	S: Plastic sealed Nil: Dust protected
Contact material	T: AgSnO₂
Terminal	J: QC Terminal without hole Nil: QC Terminal with hole, or PCB type
Parallel coil components ²⁾	R: Parallel transient suppression resistors(680Ω, 12V) (2700Ω,24V) R1: Parallel transient suppression resistors(560Ω, 12V) (1200Ω,24V) D: Parallel transient suppression diode, with anode connected to terminal#85 D1: Parallel transient suppression diode, with anode connected to terminal#86 Nil: Without parallel components
Special code ³⁾	XXX: Customer special requirement Nil: Standard

Notes: 1) In environments with high humidity, moisture, or even condensation, and dust, such as relays used in engineering, mining, agriculture and other fields, or relays with mounting brackets installed outside of electrical boxes, It is recommended to use plastic-encapsulated products; in environments containing phosphorus, H₂S, SO₂, NO₂ and other harmful gases, plastic-encapsulated types must be used and tested and confirmed in actual use; in environments containing organic silicon, please avoid using dust-proof covers ;

2) If the switch-off peak voltage of coil is required to be smaller than 100V, R1 shall be used (measured voltage of 12V is 13.5V);

If parallel diode, Zener Diode or other components are required, please contact Hongfa for more technical supports.

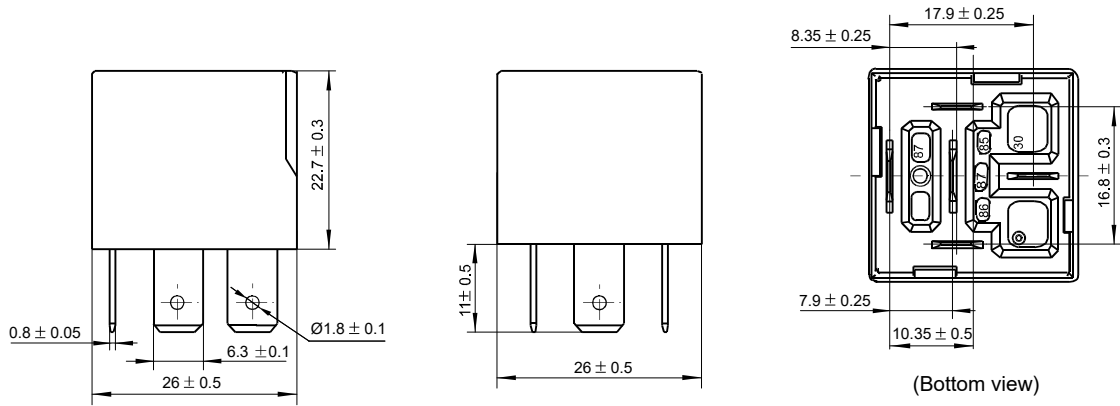
3) The performance parameters of products with characteristic numbers shall be subject to the specific specifications provided by Hongfa.

OUTLINE DIMENSIONS AND WIRING DIAGRAM

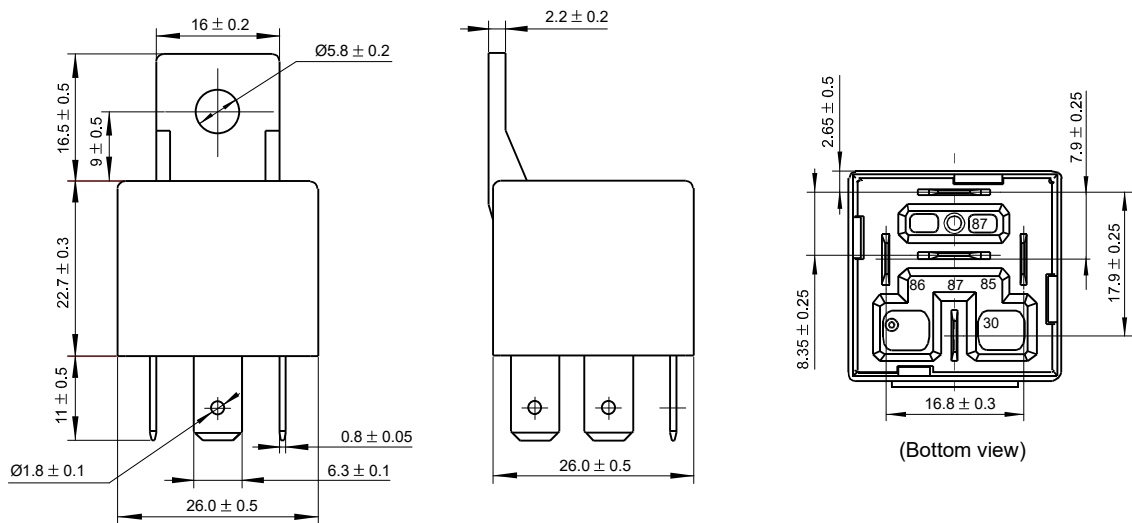
Unit: mm

Outline Dimensions

HFV15N/□□-H1□T□-□(XXX)



HFV15N/□□-H4□T□-□(XXX)

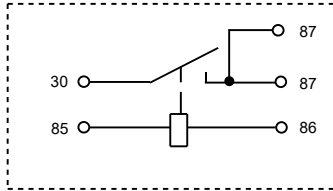


OUTLINE DIMENSIONS AND WIRING DIAGRAM

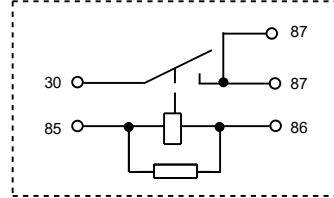
Unit: mm

Wiring Diagram

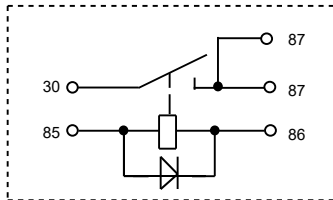
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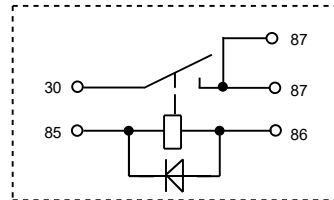
HFV15N/□□-H□□T□-R(XXX)



HFV15N/□□-H□□T□-D(XXX)

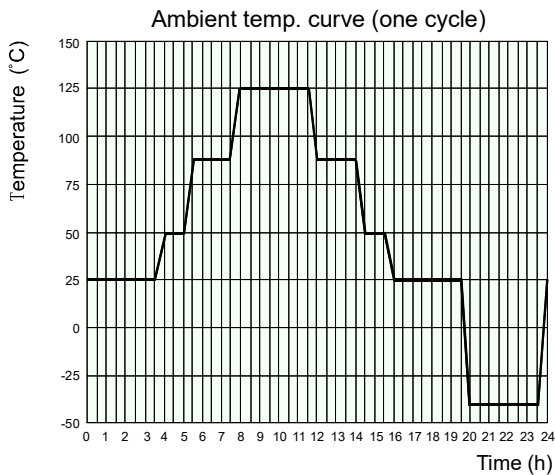


HFV15N/□□-H□□T□-D1(XXX)



CHARACTERISTIC CURVES

1. Ambient temperature curve of the electrical endurance test



- 1) The minimum temperature is -40°C.
- 2) The maximum temperature is 125°C.

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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