HFV15N AUTOMOTIVE RELAY

Features

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

Typical Applications

Horn control,Motor control

CHARACTERISTICS

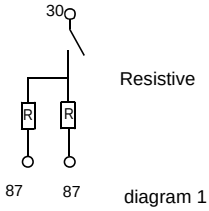
Contact arrangement	1A
Voltage drop	Typ.40mV(at 10A) Max. initial:100mV (at 10A) Max.after test:250mV (at 10A)
Max. continuous current [1) 8)]	60A continuous(at 23˚C), 40A continuous(at 85˚C), 17A continuous(at 125˚C)
Max. switching current [8)]	Make: 150A [2)] Break : 40A (Resistive, 13.5VDC)
Min. contact load	1A 6VDC
Electrical endurance	See "CONTACT DATA"
Mechanical endurance	1 x 10^6OPS (300OPS/min)
Initial insulation resistance	100MΩ (at 500VDC)
Dielectric strength [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 resisitance to bending (front & side): 10N min. [7)]

1) Measured when applying 100% rated votage 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 1ms, when non-energized, NO contacts shall not be closed.
6) FMVSS: Federal Motor Vehicle Safety Standard.
7)Test point is at 2mm away from teminal end, and after removing testing force, the terminal transfiguration shall not exceed 0.5mm.
8) Only for the 12VDC coil voltage type.

CONTACT DATA[1)]

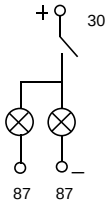
Load voltage	Load type		Load current A	On/Off ratio On s	On/Off ratio Off s	Electrical endurance [3)] OPS	Contact material	Load wiring diagram [4)]	Ambient temp.
13.5VDC	Resistive	Make	40	2	2	1×10^5	$AgSnO_2$	See diagram 1	See Ambient Temp. Curve
		Break	40						
	Lamp	Make	150 [2)]	2	2	1×10^5	$AgSnO_2$	See diagram 2	
		Break	30						
	Inductive	Make	80	2	2	1×10^5	$AgSnO_2$	See diagram 3	
		Break	33						

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 diffrent from what mentioned aboved.
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 :



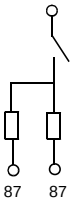
Resistive

diagram 1



Lamp

diagram 2



Inductive

diagram 3

COIL DATA

at 23˚C

Nominal voltage VDC	Pick-up voltage VDC	Drop-out voltage VDC	Coil resistance x(1±10%)Ω	Parallel resistance 1) x(1±10%)Ω	Equivalent resistance x(1±10%)Ω	Power consumption W
12	⩽8	⩾1.2	90	---	---	1.6
12	⩽8	⩾1.2	90	680	79.5	1.8

1) Illustrated with the type with parallel resistor (680Ω, 12V) .

ORDERING INFORMATION

	HFV15N /	12	-H	1	S	T	J	-R	(XXX)

Type

Coil voltage **12**: 12VDC

Contact arrangement **H**: 1 Form A

Version
1: QC Terminal
4: Plastic Bracket

Construction 1) **S**: Plastic sealed **Nil**: Dust protected

Contact material **T**: $AgSnO_2$

Terminal
J: QC Terminal without hole
Nil: QC Terminal with hole, or PCB type

Parallel coil components 2)
R: Parallel transient supression resistors(680Ω, 12V) (2700Ω,24V)
R1: Parallel transient supression resistors(560Ω, 12V) (1200Ω,24V)
D: Parallel transient supression diode, with anode connected to terminal#85
D1: Parallel transient supression diode, with anode connected to terminal#86
Nil: Without parallel components

Special code 3) **XXX:** Customer special requirement **Nil:** Standard

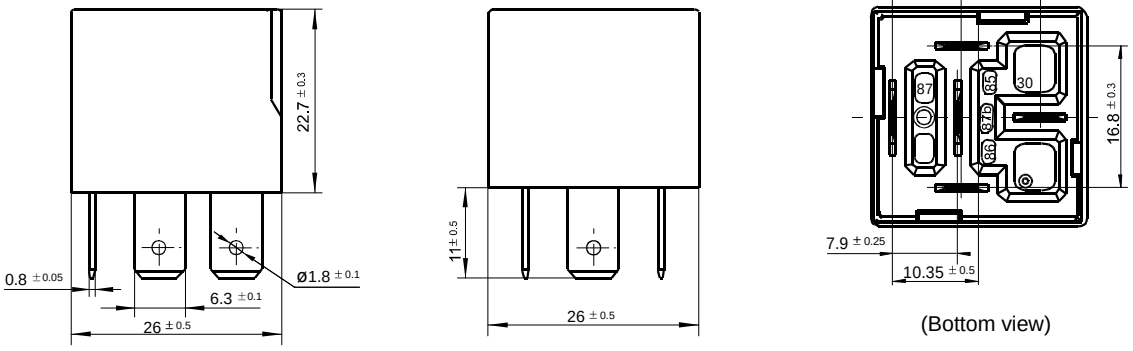
Notes: 1) Dust protected version is recommended.
2) If the switch-off peak voltage of coil is required to be smaller than 100V, R1 shall be used (measured voltage of 12V is 13.5V);
If parallel diode, Zener Diode or other components are required, please contact Hongfa for more technical supports.
3) The customer special requirement express as special code after evaluating by Hongfa. e.g. (170) stands for flasher load.

OUTLINE DIMENSIONS AND WIRING DIAGRAM

Unit: mm

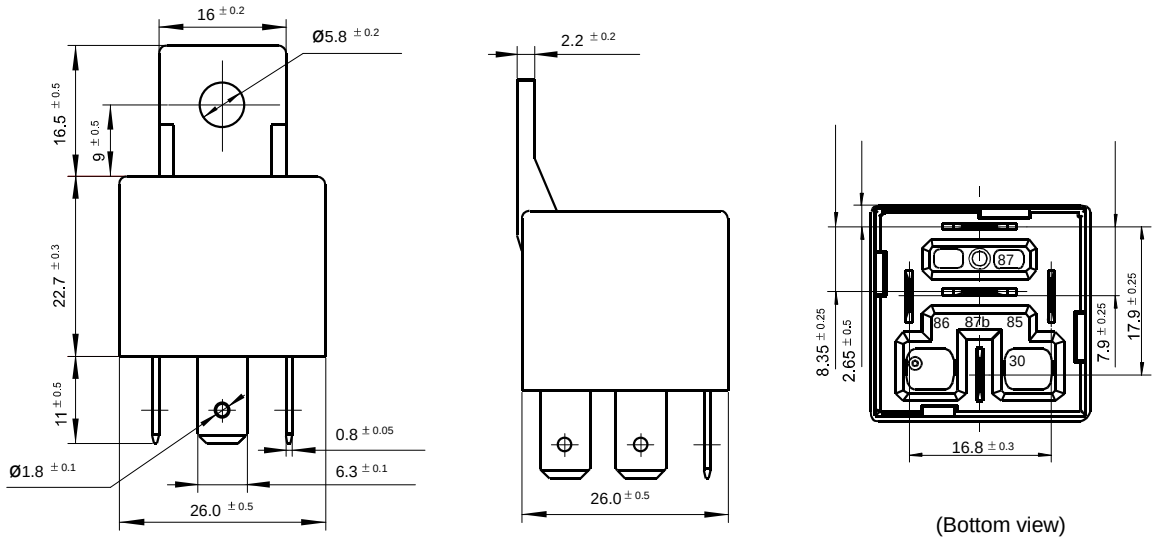
Outline Dimensions

HFV15N/□□-H1□T□-□(XXX)



(Bottom view)

HFV15N/□□-H4□T□-□(XXX)



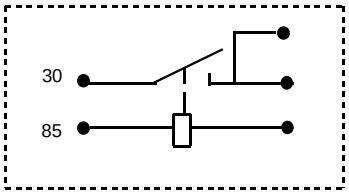
(Bottom view)

OUTLINE DIMENSIONS AND WIRING DIAGRAM

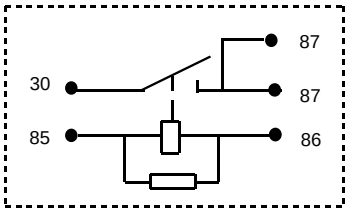
Unit: mm

Wiring Diagram

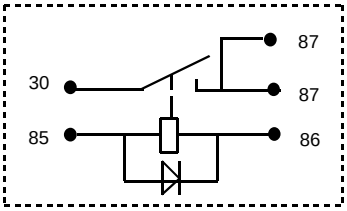
HFV15N/□□-H□□T□(XXX)



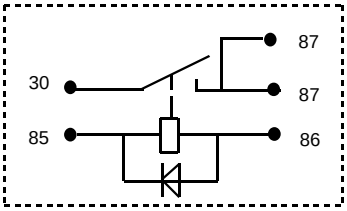
HFV15N/□□-H□□T□-R(XXX)



HFV15N/□□-H□□T□-D(XXX)

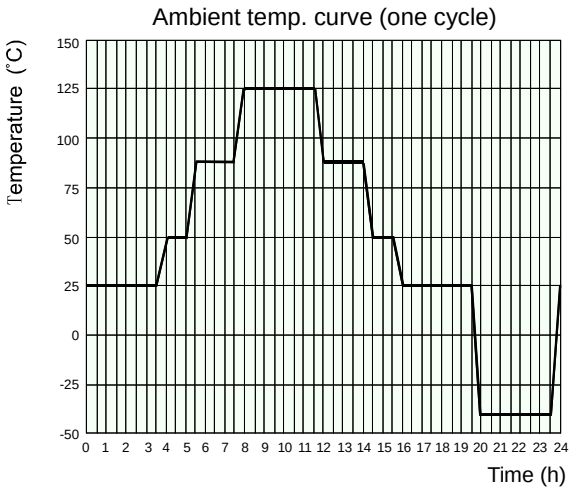


HFV15N/□□-H□□T□-D1(XXX)



CHARACTERISTIC CURVES

1. Ambient temperature curve of the electrical endurance test



1) The minimum temperature is -40˚C.
2) The maximum temperature is 85˚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.