HFV26 AUTOMOTIVE RELAY

Features

- Low height plug-in relay based on Micro ISO
- Max.continous current 20A(85℃)
- Max.making current 100A
- Strong resistance ability to shock & vibration
- Plastic sealed and dust protect types available
- RoHS & ELV compliant

Typical Applications

Rear window defogger,Lamp control,Seat heaters,Horn control,Fuel pump control,Motor control,etc

RoHS compliant

CHARACTERISTICS

Contact arrangement	1A
Voltage drop	Typ. 15mV(at 10A) Before test:100mV max.(at 10A) After test:250mV max.(at 10A)
Max.continuous current[1)]	41A 30min/30A continuous(at 23℃) 38A 30min/20A continuous(at 85℃) 35A 30min/13A continuous(at 125℃)
Max.switching current	Make:100A[2)] Break:25A(Resistive，14VDC)
Min.contact load[3)]	1A 12VDC
Electrical endurance	See “CONTACT DATA”
Mechanical endurance	1×10^6ops(300 ops/min)
Insulation resistance	Before test: 100MΩ(500VDC) After test: 10MΩ(500VDC)
Withstand voltage[4)]	500VAC
Operate time[5)]	Typ.: 4ms,Max.:10ms
Release time[6)]	Typ. 1ms,Max.:10ms
Max. switching frequency[7)]	300 ops/min(0.4Hz)
Environmental conditions	Temperature:-40℃ to 125℃ Humidity:5% RH to 85% RH(No ice or dew)
Random vibration resistance[8)]	10Hz to 60Hz 0.35mm DA 60Hz to 500Hz 49m/s^2
Shock resistance[8)]	196 m/s^2
Flammability[9)]	UL94-HB or better (meets IEC 60695-11-10)
Termination	QC

Construction	Plastic sealed,Dust protected[10)]
Unit weight	Approx.11g
Mechanical data	Cover retention(pull & push):200N min. terminal retention(pull & push):100N min. terminal retention to bending (front & side):10N min. [11)]

1) For contacts,measured when applying 100% rated voltage on coil. It has a great influence on the wire diameter and connector used. The current under 30 min is matched with the current protection of a typical car fuse.
2) Inrush peak current under lamp load,at 14VDC.
3) Low contact closure and disconnection currents (up to 2 amps, especially for some types of loads with high reverse emf, such as solenoid valves and electromagnet coils) can reduce contact reliability due to less clean contact surfaces caused by the open and close arcs.At the same time, the same relay should avoid both on and off large load and small load, because it is easy to produce contact spatter when on and off large load, and it may cause contact fault when on and off small load, so if the above situation, please contact Hongfa for more technical supports.
4) 1min , leakage current less than 1mA.
5) Rated voltage on coil and coil is not paralleled with suppression circuit.
6) The value is measured when voltage drops suddenly from nominal voltage to 0VDC and coil is not paralleled with suppression circuit.
7) The number of relay actions and release cycles per unit time, if the customer has higher switching frequency requirements, please contact Hongfa for more technical supports.
8) 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.
9) Depending on the material used, the grade is determined according to the UL IQTM for plastics.
10) According to ISO 20653 8.3 and 8.4: The samples in the initial state shall be tested in the way of simulating the installation of the electrical box. The protection class of the plastic seal type shall be up to IP67, and that of the dust protected type shall be up to IP54.
11) Test point is at 2 mm away from teminal end, and after removing testing force, the terminal transfiguration shall not exceed 0.5 mm.

COIL DATA[1)]

23℃

Nominal voltage VDC	Pick-up voltage[2)] VDC max.				Drop-out voltage[2)] VDC min.				Coil resistance ×(1±10%) Ω	Parallel resistance[3)] ×(1±5%) Ω	Equivalent resistance ×(1±10%) Ω	Power consumption W
	-40℃	23℃	85℃	125℃	-40℃	23℃	85℃	125℃				
12	6.5	8.0	9.5	10.5	0.8	1.0	1.2	1.4	160	-	160	0.9
12	6.5	8.0	9.5	10.5	0.8	1.0	1.2	1.4	160	1000	137.9	1.0

Notes:1) Unless otherwise specified, the measured temperature in this table is 23℃.
2) If the customer needs, can provide other specifications of the Pick-up voltage, Drop-out voltage products.
3) Illustrated with the type with parallel resistor(1000Ω,12V).

CONTACT DATA[1) 2)]

Load voltage	Load type		Load current A	On/Off ratio		Electrical endurance ops	Contact material	Load wiring diagram[5)]	Ambient temp
				On s	Off s				
14 VDC	Resistive	Make	30	2	2	1×10^5	$AgSnO_2$	See diagram 1	Room temperature
		Break	30						
	Inductive	Make[3)]	40	2	2	1×10^5	$AgSnO_2$	See diagram 2	See Ambient Temp. Curve
		Break	20						
	Lamp	Make	100[(4)]	2	2	1×10^5	$AgSnO_2$	See diagram 3	
		Break	20						

Notes:1) In this table, the resistive load is the physical load, while the inductive load and the lamp load are the analog load.If the load conditions are not consistent with this table, please provide the corresponding detailed conditions to Hongfa for more support.
2) Loads mentioned in this chart is for relays with no parallel diode or Zener Diode. When relay coils are connected in parallel with diode or Zener Diode, the contact wear will be aggravated and the risk of contact sticking will be increased, that is, the life of the relay will be reduced.For those with parallel diode, Zener Diode or other components, please contact Hongfa for more technical supports.
3) Make current refers to peak current.
4) Corresponds to the peak inrush current on initial actuation (cold filament).
5) The load wiring diagrams are listed below:

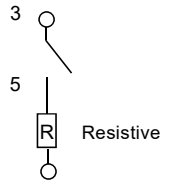


Diagram 1

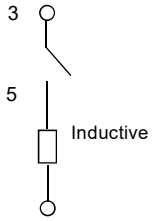


Diagram 2

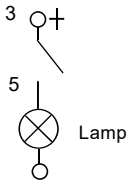


Diagram 3

ORDERING INFORMATION

	HFV26 /	12	-H	1	S	T	J	-R	(XXX)
Type									
Coil voltage	**12**：12VDC								
Contact arrangement	**H**：1 Form A								
Version	**1**：QC Terminal **9**：Quadrilateral card station								
Construction[1)]	**S**：Plastic sealed **Nil**:Dust protected								
Contact material	**T**：$AgSnO_2$								
Terminal	**J**：QC Terminal without hole **Nil**：QC Terminal with hole								
Parallel coil components[2)]	**R:**Parallel transient suppression resistors(1000Ω，12VDC) **D:**Parallel transient suppression diode,with anode connected to terminal #2 **D1:**Parallel transient suppression diode,with anode connected to terminal #2 **Nil:**Without parallel components								
Special code[3)]	**XXX:** Customer special requirement **Nil:** Standard								

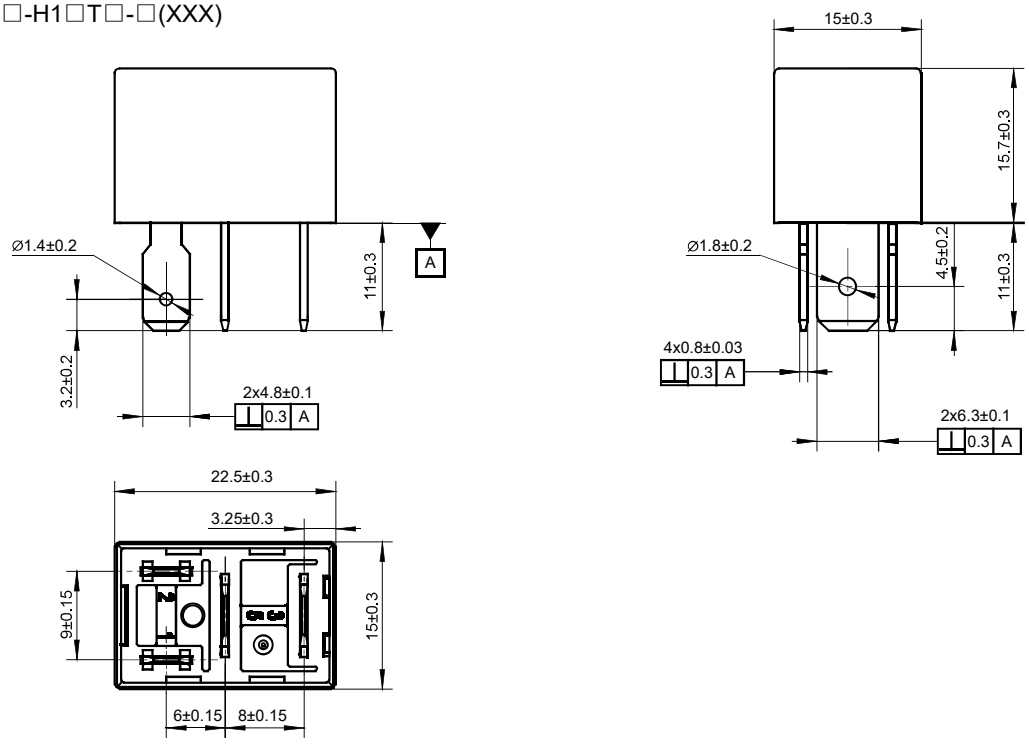
Notes:1) In the atmosphere with high humidity,moisture,even freezing dew and much dust,such as relay applied in engineering,mining,agriculture and other fileds,or relay with mounting frame installed outside electrical box,recommend to use sealed relays.In the atmosphere with harmful gases as H_2S,SO_2,NO_2 etc.,the dust protected products can not be applied while the plastic sealed products can be used and tested in application.In the atmosphere with organic silicon,unsealed relays shall not be used for the organic silicon will accelerate the failure of the contacts.
2) 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 ewaluating by Hongfa. e.g. (170) stands for flasher load.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

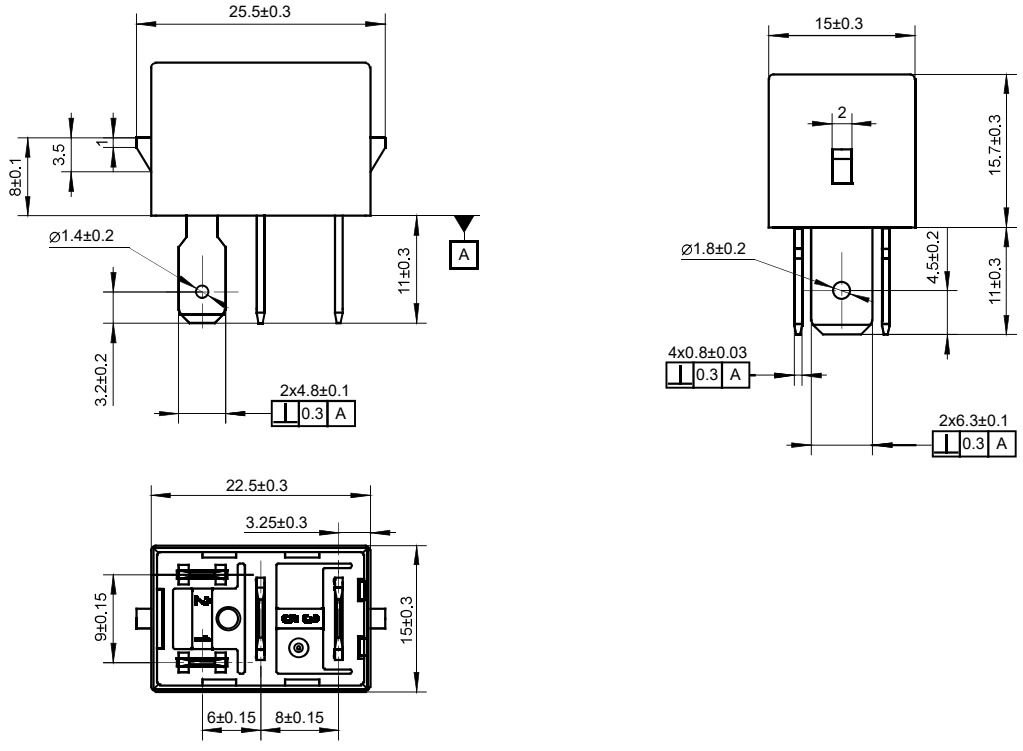
Outline Dimensions

HFV26/□□-H1□T□-□(XXX)



（Bottom view）

HFV26/□□-H9□T□-□(XXX)



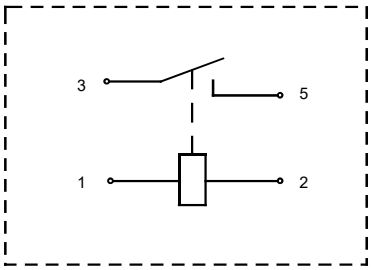
（Bottom view）

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

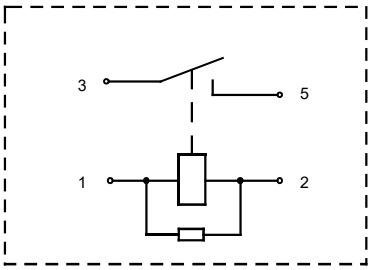
Unit: mm

Wiring Diagram

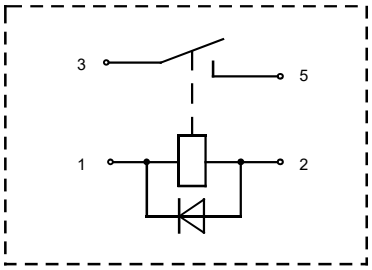
HFV26/□□-H□□T□ (XXX)



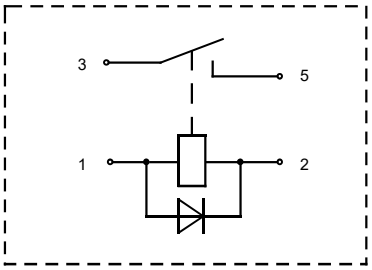
HFV26/□□-H□□T□-R (XXX)



HFV26/□□-H□□T□-D (XXX)



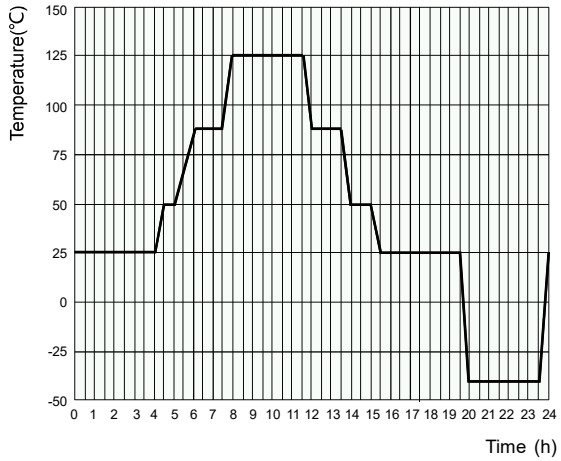
HFV26/□□-H□□T□-D1 (XXX)



CHARACTERISTIC CURVES

Ambient temperature curwe of the electrical endurance test mbient temp. curwe (one cycle)

Ambient temp. curve (one cycle)



Notes:

1) The minimum temperature is -40℃.
2) The maximum temperature is 125℃.
3) The durability test of the product is carried out according to the contact parameter table. If any of the actual load voltage, current and action frequency are different from the contact parameter table, please carry out the confirmation test again.