HFV11 AUTOMOTIVE RELAY

Features

- Miniaturized package: (15.6 x 15.2 x 16.4) mm
- Extended temperature range: -40˚C to 125˚C
- 1 Form A contact arrangement
- 2.8mm QC terminals available
- RoHS & ELV compliant

Typical Applications

Headlight control, Fuel pump control, Horn control,
A/C compressor clutch

CHARACTERISTICS

Contact arrangement	1A
Voltage drop (initial)	Typ.: 30mV (at 10A) Max.: 250mV (at 10A)
Max.continuous current 1)	20A
Max.switching current	Make (NO): 100A 2) Break (NO): 30A (at 14VDC)
Min. contact load	1A 6VDC
Electrical endurance	See "CONTACT DATA"
Mechanical endurance	$1x10^6$ OPS 300OPS/min
Initial insulation resistance	100MΩ (at 500VDC)
Dielectric strength 3)	between contacts: 500VAC between coil & contacts: 500VAC
Operate time	Typ.: 5ms (at nomi. vol.) Max.: 10ms (at nomi. vol.)
Release time 4)	Typ.: 3ms Max.: 10ms
Ambient temperature	-40˚C to 125˚C

Vibration resistance 5)	10Hz to 40Hz 1.27mm DA 40Hz to 70Hz 49m/s^2 70Hz to 100Hz 0.5mm DA 100Hz to 500Hz 98m/s^2
Shock resistance 5)	196m/s^2
Flammability 6)	UL94-HB or better (meets FMVSS 302)
Termination	2.8mm QC
Construction	Plastic sealed, Flux proofed
Unit weight	Approx. 11g
Mechanical data	cover retention (pull & push): 200N min. terminal retention (pull & push): 100N min. terminal resistance to bending (front & side): 10N min. 7)

1) For NO contacts, measured when applying 100% rated votage on coil.
2) Inrush peak current under lamp load, at 14VDC.
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 100μs.
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.

CONTACT DATA 1)

Load voltage	Load type		Load current A 1A NO	On/Off ratio On s	 Off s	Electrical endurance OPS	Contact material	Ambient temp.
13.5VDC	Resistive	Make	20	2	2	1×10^5	$AgSnO_2$	See Ambient Temp. Curve
		Break	20					
	Inductive	Make	40	2	2	1.5×10^5	$AgSnO_2$	
		Break	20					
	Lamp	Make	100	2	2	1.5×10^5	$AgSnO_2$	
		Break	20					

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.

COIL DATA

at 23°C

Nominal voltage VDC	Pick-up voltage VDC max.	Drop-out voltage VDC min.	Coil resistance x(1±10%)Ω	Parallel resistance x(1±5%)Ω	Equivalent resistance Ω	Power consumption W
12	7.2	1.2	155	---	---	0.95
12	7.2	1.2	155	1000	135	1.1

ORDERING INFORMATION

HFV11 / 12 -H S -R (XXX)

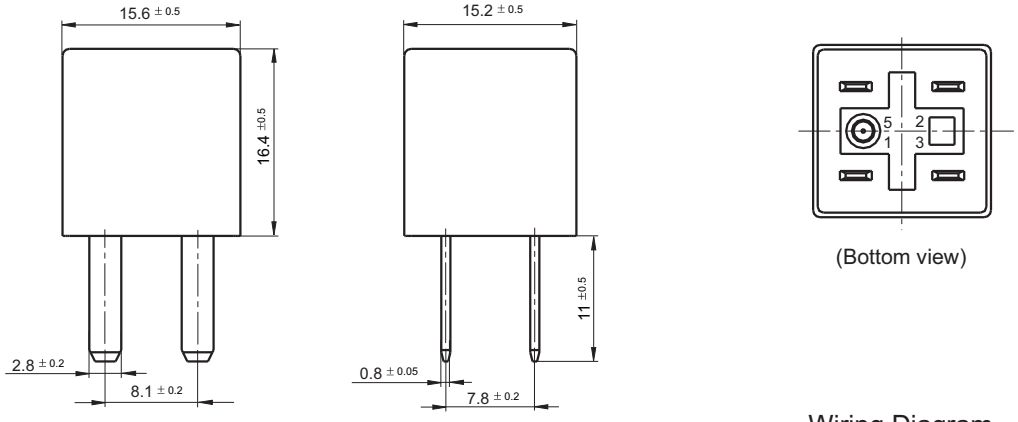
Type	
Coil voltage	**12**: 12VDC
Contact arrangement	**H**: 1 Form A
Construction	**S:** Plastic sealed [1] **Nil:** Flux proofed
Parallel coil components	**R**: Parallel transient supression resistors **Nil**: Without parallel components
Customer special code	

1) If washing or surface treatment is required after the relay is assembled on PCB, please provide with the conditions in details for our confirmation or our recommendation with suitable products.

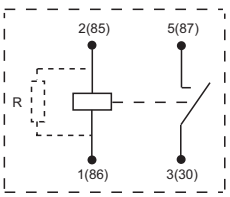
OUTLINE DIMENSIONS AND WIRING DIAGRAM

Unit: mm

Outline Dimensions



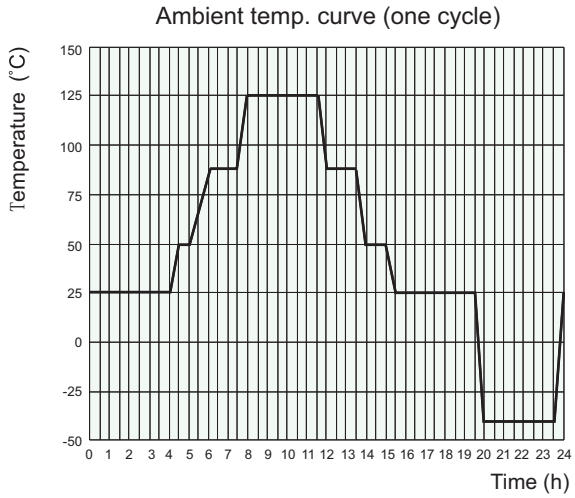
Wiring Diagram



Remark: Terminal vertical deviation tolerance is 0.3mm.

CHARACTERISTIC CURVES

Ambient temperature curve of the electrical endurance test



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