HFV15A AUTOMOTIVE RELAY

Features

- ISO 7588-1 (1998) standard foot position
- Extended temp. range up to 125°C
- Action temperature range : –40°C~ +125°C
- Continuous load current : 40 A
- 1 Form A contact arrangement
- Compliance with DIN ISO 22628 Lead Free Standard

Typical Applications

Fog lamp & headlight control,Sunroof motor control, Air-conditioning, Mirror adjustment, Horn control,Cooling fan control.

RoHS compliant

CHARACTERISTICS

Contact arrangement	1A
Voltage drop	Typ.: 15mV Max.: 100mV (at 10A)
Max. continuous current (1) (8)	60 A(at 23°C) 40 A(at 85°C) 18 A(at 125°C)
Max. switching current(8)	Make:150A (2) Break (NO):40A(Resistive,13.5V)
Min. contact load	1A 6VDC (3)
Electrical endurance	See "CONTACT DATA"
Mechanical endurance	1×10^6 ops(300ops/min)
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) (10)	294m/s^2
Flammability (6)	UL94-HB or better (meets FMVSS 302)
Termination	QC(9)
Construction	Dust protected
Unit weight	Approx. 24g
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 0VDC and coil is not paralleled with sup- pression circuit.
5) When energized or non-energized, opening time of NO contacts not exceed 1ms.
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.
9) Do NOT knock on relays with hard objects such as rubber rod and rubber hammer during mounting, which might lead to relay damage.

COIL DATA

Nominal Voltage VDC	Pick-up Voltage VDC max	Drop-out voltage VDC min	Coil Resistance ×(1±10%)Ω	Parallel Resistance ×(1±5%)Ω	Equivalent Resistance ×(1±10%)Ω	Power Consumption W	Max. allowable overdrive voltage 1) VDC
12	8.0	1.2	85	—	—	1.7	18
12	8.0	1.2	85	680	75.6	1.9	18
24	16.0	2.4	320	—	—	1.8	36
24	16.0	2.4	320	2700	286	2.0	36

1) Max. allowable overdrive voltage is stated with no load applied and minimum coil resistance.

CONTACT DATA

Load voltage	Load type		Load current 1A NO	On/Off ratio On s	On/Off ratio Off s	Electrical Endurance[3] OPS	Contact material	Ambient temp.
13.5 VDC	Resistive	Make	20	2	2	1×10^5	$AgSnO_2$	See Ambient temp. curve
		Break	20					
	Inductive	Make	80	2	2	1×10^5	$AgSnO_2$	
		Break	33					
	Lamp[1]	Make	150[2]	2	2	1×10^5	$AgSnO_2$	
		Break	30					

1) The load in the table excludes flasher. When applied in flasher, please connect by the polarity request according, a special silver alloy contact material should be used and the customer special code should be (170) as a suffix.
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) Loads mentioned in this chart is for relays with no parallel diode or Zener Diode. For those with parallel diode, Zener Diode or other compo nents, please contact Hongfa for more technical supports. Please also contact Hongfa if the actual application load is diffrent from what mentioned aboved.

ORDERING INFORMATION

HFV15A / 12 -H 1 □ T J R (XXX)

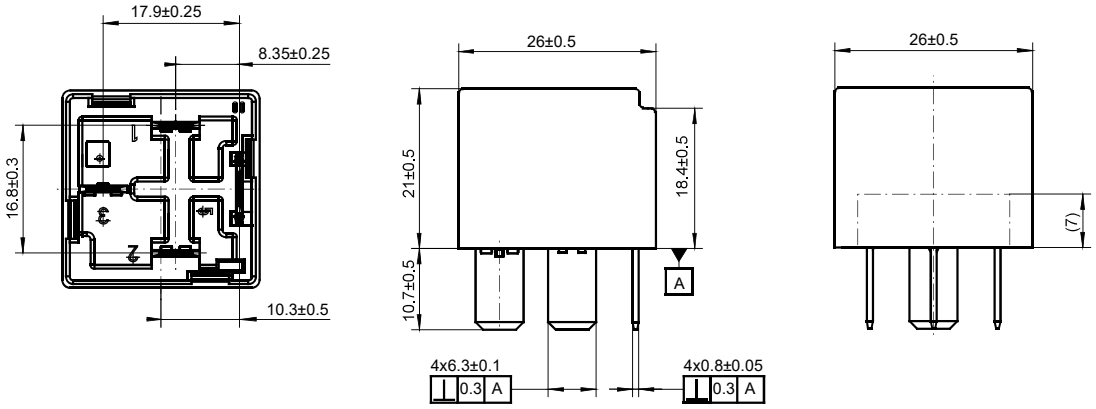
Type	
Coil voltage	**12:** 12VDC **24:** 24VDC
Contact arrangement	**H:** 1 Form A
Construction	**1:** QC Terminal
Coil power	**S:**Plastic sealed
Contact material	**T:** $AgSnO_2$
Terminal	**J:** QC Terminal without hole
Parallel coil components[1]	**R:** Parallel transient supression resistors **D:** Parallel transient supression diode,with anode connected to terminal#2 **D1:** Parallel transient supression diode,with anode connected to terminal#1 **Nil:** Without parallel components
Special code	**XXX:** Customer special requirement **Nil:** Standard

1) 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);
2) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND TERMINAL FUNCTION DEFINITION

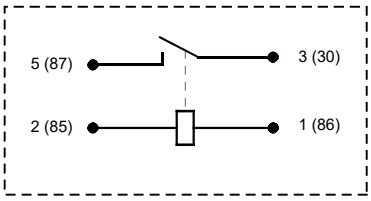
Unit: mm

Outline Dimensions

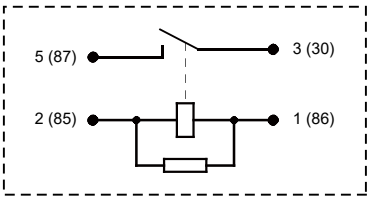


Wiring Diagram

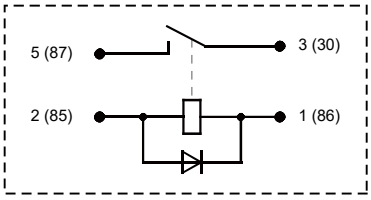
Parallel transient supression resistors



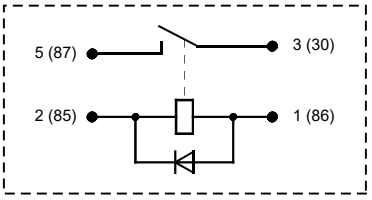
Without parallel components



Parallel diode D Type
（anode connected to terminal#2）

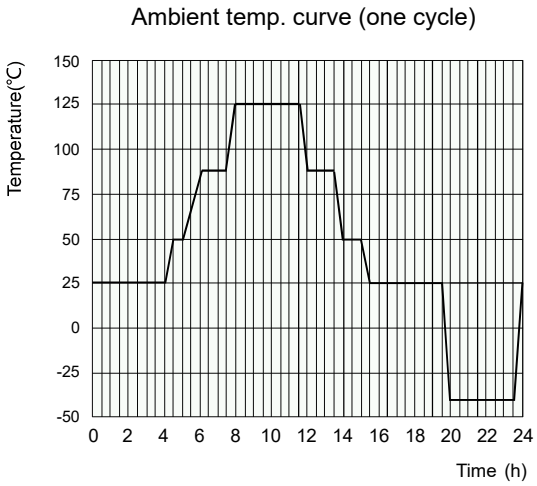


Parallel diode D1 Type
（anode connected to terminal#1）



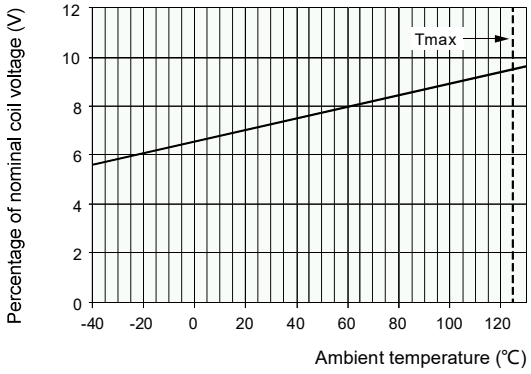
CHARACTERISTIC CURVES

1.Ambient temperature curve of the electrical endurance test



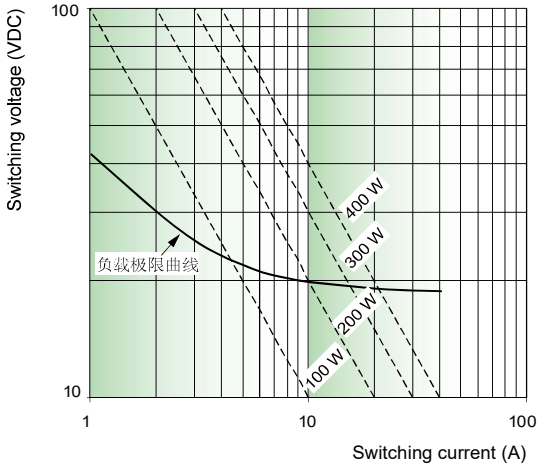
1) The minimum temperature is -40℃.
2) The maximum temperature is 125℃.

2.Coil operating voltage range



1) Temperature rise due to coil excitation and contact current is not included.

3.Load limit curve



1) The arc can be extinguished safely within the time of the moving contact.
2) Suitable only for pure resistive loads at +23°C ambient temperature.

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 担 responsibility to determine which product should be used only.