

HFV11

AUTOMOTIVE RELAY



Typical Applications

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

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

CHARACTERISTICS

| | | | |
|--------------------------------------|---|--------------------------------|--|
| Contact arrangement | 1A | Vibration | 10Hz to 40Hz 1.27mm DA 40Hz to 70Hz 49m/s ² 70Hz to 100Hz 0.5mm DA 100Hz to 500Hz 98m/s ² |
| Voltage drop (initial) | Typ.: 30mV (at 10A) Max.: 250mV (at 10A) | Shock resistance ⁵⁾ | 196m/s ² |
| Max.continuous current ¹⁾ | 20A | Flammability ⁶⁾ | UL94-HB or better (meets FMVSS 302) |
| Max.switching current | Make (NO): 100A ²⁾ Break (NO): 30A (at 14VDC) | Termination | 2.8mm QC |
| Min. contact load | 1A 6VDC | Construction | Plastic sealed, Flux proofed |
| Electrical endurance | See "CONTACT DATA" | Unit weight | Approx. 11g |
| Mechanical endurance | 1x10 ⁶ OPS 300OPS/min | Mechanical data | cover retention (pull & push): 200N min. terminal retention (pull & push): 100N min. terminal resistance to bending (front & side): 10N min. ⁷⁾ |
| 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 | | |

- 1) For NO contacts, measured when applying 100% rated voltage 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 terminal end, and after removing testing force, the terminal transfiguration shall not exceed 0.5mm.

CONTACT DATA¹⁾

| Load voltage | Load type | | Load current A | | On/Off ratio | | Electrical endurance OPS | Contact material | Ambient temp. | |
|--------------|-----------|-------|----------------|----|--------------|-------------------|--------------------------|-------------------------|---------------------|--------------------|
| | | | 1A | NO | On s | Off s | | | | |
| 13.5VDC | Resistive | Make | 20 | 2 | 2 | 1×10 ⁵ | AgSnO ₂ | See Ambient Temp. Curve | | |
| | | Break | 20 | | | | | | | |
| | Inductive | Make | 40 | 2 | 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 different from what mentioned above.



HONGFA RELAY

ISO9001, ISO/TS16949, ISO14001, OHSAS18001, IECQ QC 080000 CERTIFIED

2013 Rev. 1.00

COIL DATA

at 23°C

| Nominal voltage VDC | Pick-up voltage VDC max. | Drop-out voltage VDC min. | Coil resistance $\times(1\pm 10\%)\Omega$ | Parallel resistance $\times(1\pm 5\%)\Omega$ | 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

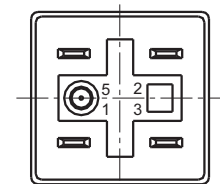
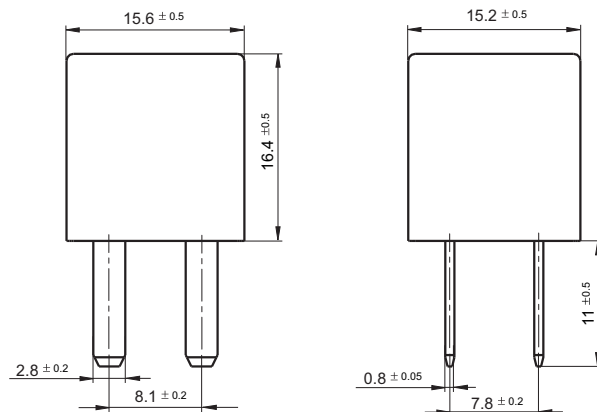
| | | | | | | |
|--------------------------|---|----|----------------------------------|---|----|-------|
| Type | HFV11 / | 12 | -H | S | -R | (XXX) |
| Coil voltage | 12: 12VDC | | | | | |
| Contact arrangement | H: 1 Form A | | | | | |
| Construction | S: Plastic sealed ¹⁾ | | Nil: Flux proofed | | | |
| Parallel coil components | R: Parallel transient suppression 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

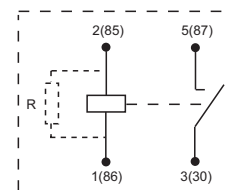
Unit: mm

Outline Dimensions



(Bottom view)

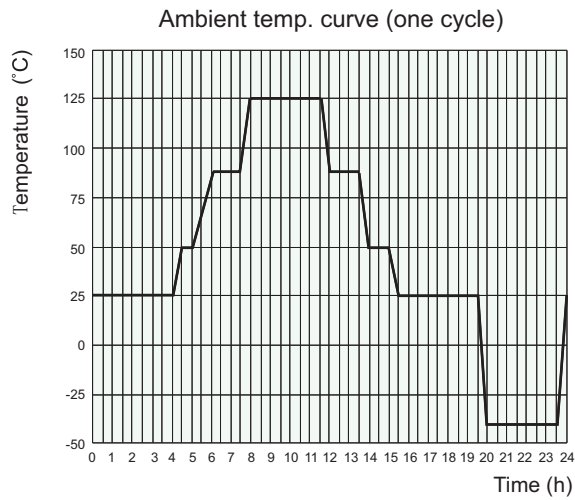
Wiring Diagram



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 .

Disclaimer

This datasheet is for the customers' reference. All the specifications are subject to change without notice. Before referring to this datasheet, please make sure that you have read and understood "Explanation to Terminology and Guidelines of Automotive Relay & Module" in our catalogue of Automotive Relay & Module.

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's responsibility to determine which product should be used only.

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