

HF7FD

SUBMINIATURE HIGH POWER RELAY



File No.:E134517



File No.: 40008374



File No.:CQC09002037921



Features

- 12A switching capability
- Ambient temperature meets 105°C
- High performance, Low profile
- Product in accordance to IEC 60335-1 available
- 2kV dielectric strength (between coil and contacts)
- UL94, V-0, CTI250 flammability class
- Double pins type available
- 1 Form A and 1 Form C configurations
- Class F & Class B insulation system
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (22.0 x 16.0 x 16.4) mm

CONTACT DATA

| | | |
|----------------------------|---|---|
| Contact arrangement | 1A | 1C |
| Contact resistance | 100mΩ max.(at 1A 24VDC) | |
| Contact material | AgSnO ₂ , AgCdO | |
| Contact rating (Res. load) | 16A 250VAC 12A 250VAC 10A 250VAC | 12A 125VAC NO: 10A 250VAC NC: 7A 250VAC |
| Max. switching voltage | 250VAC / 28VDC | |
| Max. switching current | 16A | 10A |
| Max. switching power | 4000VA / 280W | 2500VA / 196W |
| Mechanical endurance | 1 x 10 ⁷ OPS | |
| Electrical endurance | Flux proofed: 1 x 10 ⁵ OPS Plastic sealed: 6000OPS (See approval reports for more details) | |

CHARACTERISTICS

| | | |
|-------------------------------|---|---------------------|
| Insulation resistance | 100MΩ (at 500VDC) | |
| Dielectric strength | Between coil & contacts | 2000VAC 1min |
| | Between open contacts | 750VAC 1min |
| Operate time (at nomi. volt.) | 10ms max. | |
| Release time (at nomi. volt.) | 5ms max. | |
| Humidity | 5% to 85% RH | |
| Shock resistance | Functional | 98m/s ² |
| | Destructive | 980m/s ² |
| Ambient temperature | HF7FD: -40°C to 85°C HF7FD-T: -40°C to 105°C | |
| Vibration resistance | 10Hz to 55Hz 1.5mm DA | |
| Termination | PCB | |
| Unit weight | Approx. 14g | |
| Construction | Plastic sealed, Flux proofed | |

Notes: 1) The data shown above are initial values.
2) Please find coil temperature curve in the characteristic curves below.

COIL

Coil power Approx. 360mW

COIL DATA

at 23°C

| Nominal Voltage VDC | Pick-up Voltage VDC max. | Drop-out Voltage VDC min. | Max. Allowable Voltage VDC | Coil Resistance Ω |
|---------------------|--------------------------|---------------------------|----------------------------|-------------------|
| 3 | 2.25 | 0.3 | 3.9 | 25 x (1±10%) |
| 5 | 3.75 | 0.5 | 6.5 | 70 x (1±10%) |
| 6 | 4.50 | 0.6 | 7.8 | 100 x (1±10%) |
| 9 | 6.75 | 0.9 | 11.7 | 225 x (1±10%) |
| 12 | 9.00 | 1.2 | 15.6 | 400 x (1±10%) |
| 18 | 13.5 | 1.8 | 23.4 | 900 x (1±10%) |
| 24 | 18.0 | 2.4 | 31.2 | 1600 x (1±15%) |
| 48 | 36.0 | 4.8 | 62.4 | 6400 x (1±15%) |

SAFETY APPROVAL RATINGS

| UL/CUL | Configuration | Rating |
|--------|-------------------------------|---|
| UL/CUL | 1 Form A | HF7FD 12A 250VAC (at 85°C, AgSnO ₂ , Double pin) 10A 277VAC 10A 28VDC |
| | HF7FD-T (AgSnO ₂) | 16A 250VAC (at 40°C) 10A 250VAC (at 105°C) 8A 250VAC (at 105°C) 1/2HP 125VAC (at 40°C) 1/2HP 250VAC (at 40°C) |
| | 1 Form C | 12A 125VAC 7A 277VAC 7A 28VDC |
| VDE | 1 Form A | 12A 250VAC (AgSnO ₂ , Double pin) 10A 250VAC |
| | 1 Form C | 7A 250VAC |

Notes: Only some typical ratings are listed above. If more details are required, please contact us.



HONGFA RELAY

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

2011 Rev. 1.00

ORDERING INFORMATION

HF7FD / 012 -1H P S T G F (XXX)

Type HF7FD: 85°C, HF7FD-T: 105°C

Coil voltage 3, 5, 6, 9, 12, 18, 24, 48VDC

Contact arrangement 1H: 1 Form A 1Z: 1 Form C

Pin version P: Double pins type Nil: Single pin type

Construction ¹⁾ S: Plastic sealed Nil: Flux proofed

Contact material T: AgSnO₂ Nil: AgCdO

Contact plating G: Gold plated Nil: No gold plated

Insulation standard F: Class F Nil: Class B

Customer special code

Notes: 1) Under the ambience with dangerous gas like H₂S, SO₂ or NO₂, plastic sealed type is recommended; Please test the relay in real applications. If the ambience allows, flux proofed type is preferentially recommended.
If water cleaning is required after the relay is assembled on PCB, please contact us for suggestion about suitable parts.
2) If plastic sealed type is selected for cleaning purpose, the vent-hole cover should be excised after cleaning.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

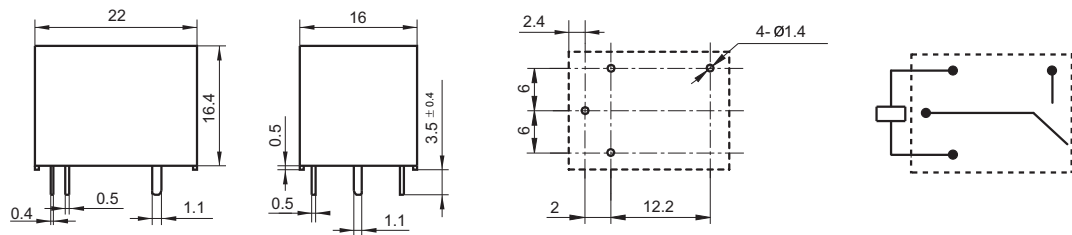
Unit: mm

Outline Dimensions

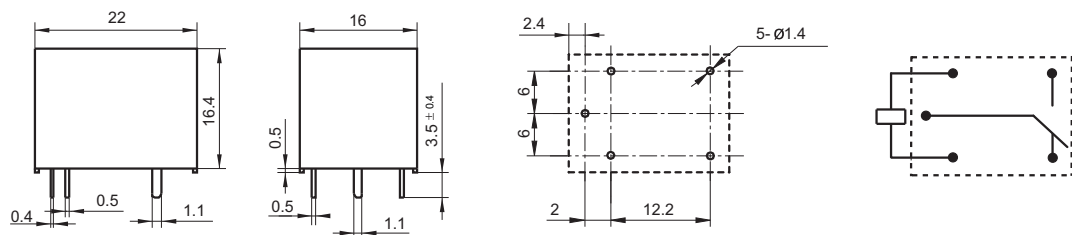
PCB Layout (Bottom view)

Wiring Diagram (Bottom View)

1 Form A (Single pin type)



1 Form C (Single pin type)



OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

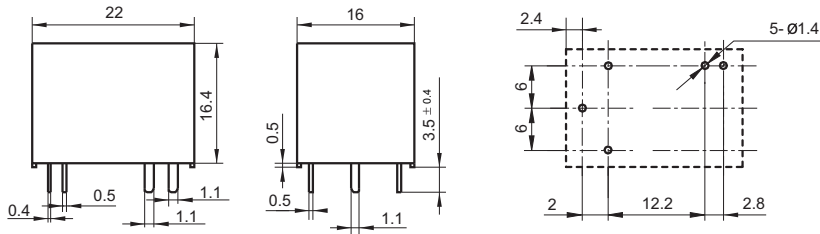
Unit: mm

Outline Dimensions

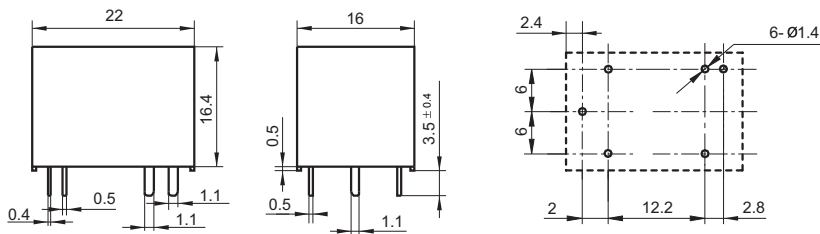
PCB Layout (Bottom view)

Wiring Diagram (Bottom View)

1 Form A (Double pins type)



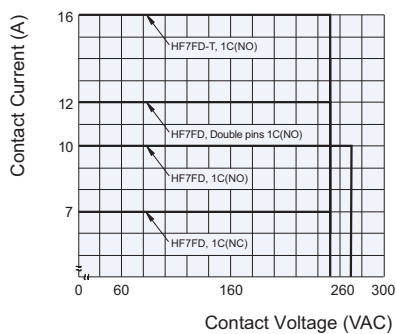
1 Form C (Double pins type)



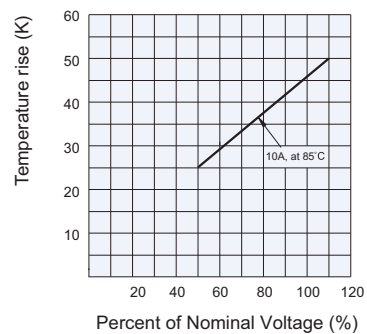
- Remark: 1) In case of no tolerance shown in outline dimension: outline dimension $\leq 1\text{mm}$, tolerance should be $\pm 0.2\text{mm}$; outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, tolerance should be $\pm 0.3\text{mm}$; outline dimension $> 5\text{mm}$, tolerance should be $\pm 0.4\text{mm}$.
 2) The tolerance without indicating for PCB layout is always $\pm 0.1\text{mm}$.

CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER



COIL TEMPERATURE RISE



Disclaimer

This datasheet is for the customers' reference. All the specifications are 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.

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