

HF14FF

MINIATURE HIGH POWER RELAY



File No.:E134517



File No.:R50140759



File No.:CQC10002046169



Features

- 10A switching capability
- 5kV dielectric strength (between coil and contacts)
- Sockets available
- Plastic sealed and flux proofed types available
- UL insulation system: Class F available

RoHS compliant

CONTACT DATA

| | |
|----------------------------------|---|
| Contact arrangement | 1A, 1C |
| Contact resistance ¹⁾ | 50mΩ max.(at 1A 24VDC) |
| Contact material | AgSnO ₂ , AgNi |
| Contact rating | Resistive: 10A 277VAC/30VDC TV-5 120VAC |
| Max. switching voltage | 277VAC / 30VDC |
| Max. switching current | 10A |
| Max. switching power | 2770VA / 300W |
| Mechanical endurance | 5 x 10 ⁶ OPS |
| Electrical endurance | 1 x 10 ⁵ OPS (10A 277VAC, Resistive load, Room temp., 1s on 9s off) 1 x 10 ⁵ OPS (10A 30VDC, Resistive load, Room temp., 1s on 9s off) |

Notes: 1) The data shown above are initial values.

2) For plastic sealed type, the venting-hole should be excised in electrical endurance test.

COIL

| | |
|------------|---------------|
| Coil power | Approx. 530mW |
|------------|---------------|

COIL DATA

at 23°C

| Nominal Voltage VDC | Pick-up Voltage VDC, max. ²⁾ | Drop-out Voltage VDC, min. ²⁾ | Max. Voltage VDC ³⁾ | Coil Resistance Ω |
|---------------------|---|--|--------------------------------|-------------------|
| 3 | 2.25 | 0.3 | 4.2 | 17 x (1±10%) |
| 5 | 3.75 | 0.5 | 7.0 | 47 x (1±10%) |
| 6 | 4.50 | 0.6 | 8.4 | 68 x (1±10%) |
| 9 | 6.75 | 0.9 | 12.6 | 160 x (1±10%) |
| 12 | 9.00 | 1.2 | 16.8 | 275 x (1±10%) |
| 18 | 13.5 | 1.8 | 25.2 | 620 x (1±10%) |
| 24 | 18.0 | 2.4 | 33.6 | 1100 x (1±10%) |
| 48 | 36.0 | 4.8 | 67.2 | 4170 x (1±10%) |
| 60 | 45.0 | 6.0 | 84.0 | 7000 x (1±10%) |

Notes: 1) When requiring pick-up voltage < 75% of nominal voltage, special order allowed.

2) The data shown above are initial values.

3) Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.

4) Under ambient temperature, applying more than 80% of rating voltage to coil, relay will take action accordingly. But in order to meet the stated product performance, please apply rated voltage to coil.

CHARACTERISTICS

| | |
|-------------------------------|--|
| Insulation resistance | 1000MΩ (at 500VDC) |
| Dielectric strength | Between coil & contacts 5000VAC 1min Between open contacts 1000VAC 1min |
| Operate time (at nomi. volt.) | 15ms max. |
| Release time (at nomi. volt.) | 5ms max. |
| Vibration resistance | 10Hz to 55Hz 1.5mm DA |
| Shock resistance | Functional 98m/s ² Destructive 980m/s ² |
| Humidity | 5% to 85% RH |
| Ambient temperature | -40°C to 70°C |
| Termination | PCB |
| Unit weight | Approx. 18g |
| 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.

3) UL insulation system: Class F, Class B.

SAFETY APPROVAL RATINGS

| | | |
|--------|----------------------------|--|
| UL/CUL | AgSnO ₂ AgNi | 10A 277VAC General purpose 10A 30VDC Resistive 1/3HP 250VAC 1/4HP 125VAC TV-5 120VAC |
| TÜV | AgSnO ₂ | 10A 250VAC 10A 30VDC |
| CQC | AgSnO ₂ AgNi | 10A 250VAC 10A 30VDC |

Notes: 1) All values unspecified are at room temperature.

2) Only typical loads are listed above. Other load specifications can be available upon request.



HONGFA RELAY

ISO9001, IATF16949, ISO14001, ISO45001, IECQ QC 080000, ISO/IEC 27001 CERTIFIED

2025 Rev. 1.00

ORDERING INFORMATION

| | | | | | | | |
|----------------------------|---|-----|-----|---|---|---|-------|
| | HF14FF / | 012 | -1H | S | T | F | (XXX) |
| Type | | | | | | | |
| Coil voltage | 3, 5, 6, 9, 12, 18, 24, 48, 60VDC | | | | | | |
| Contact arrangement | 1H: 1 Form A 1Z: 1 Form C | | | | | | |
| Construction ¹⁾ | S: Plastic sealed(No smoky-gray cover) Nil: Flux proofed | | | | | | |
| Contact material | T: AgSnO ₂ 3: AgNi | | | | | | |
| Insulation standard | F: Class F Nil: Class B | | | | | | |
| Special code ⁴⁾ | XXX: Customer special requirement Nil: Standard | | | | | | |

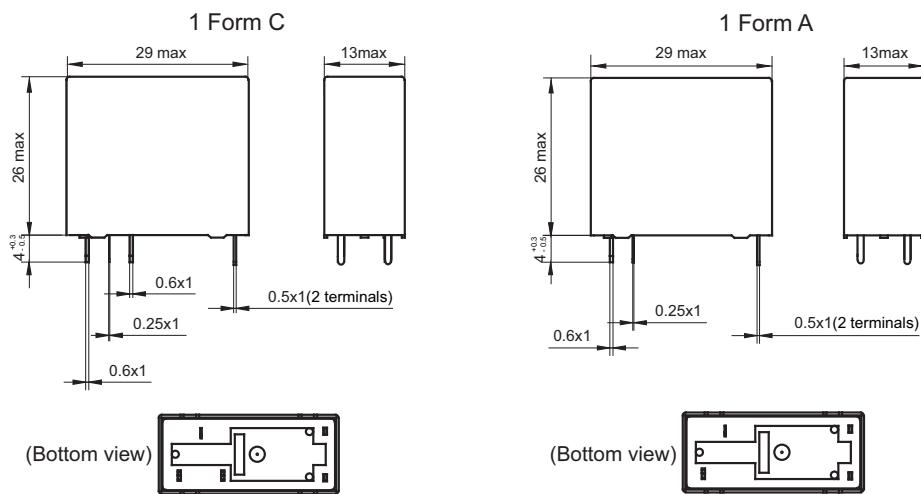
Notes:

- 1) We recommend flux proofed types for a clean environment (free from contaminations like H₂S, SO₂, NO₂, dust, etc.). We suggest to choose plastic sealed types and validate it in real application for an unclean environment (with contaminations like H₂S, SO₂, NO₂, dust, etc.).
- 2) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.
- 3) The standard type is made of black cover. If smoke cover is required, please add a special suffix (611) when ordering. Please take note that smoke cover is only available for flux proofed type.
- 4) The customer special requirement express as special code after evaluating by Hongfa.
- 5) For products that should meet the explosion-proof requirements of "IEC 60079 series", please note [Ex] after the specification while placing orders. Not all products have explosion-proof certification, so please contact us if necessary, in order to select the suitable products.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Outline Dimensions



Wiring Diagram (Bottom view)



PCB Layout (Bottom view)

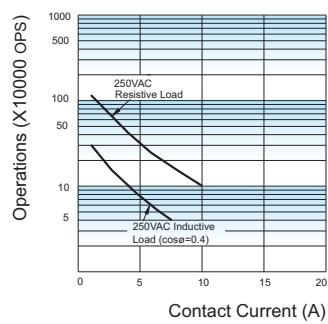


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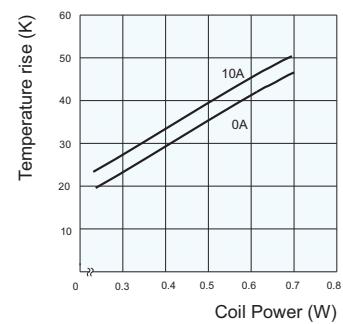
- 1) In case of no tolerance shown in outline dimension: outline dimension ≤ 1 mm, tolerance should be ± 0.2 mm; outline dimension > 1 mm and ≤ 5 mm, tolerance should be ± 0.3 mm; outline dimension > 5 mm, tolerance should be ± 0.4 mm.
- 2) The tolerance without indicating for PCB layout and pin size is always ± 0.1 mm.
- 3) The width of the gridding is 2.5mm.

CHARACTERISTIC CURVES

ENDURANCE CURVE



COIL TEMPERATURE RISE



Test conditions:

NO, Resistive load,
Flux proofed, Room temp., 1s on 9s off.

Disclaimer

The specification is for reference only. See to "Terminology and Guidelines" for more information. Specifications 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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