

HF190F/2H

MINIATURE HIGH POWER RELAY



File No.:E133481



File No.:R 50509389



Features

- 2 Form A Configurations
- 2.1mm main contact gap
- 4KV dielectric strength (between coil and contacts)
- UL insulation system: Class F
- Fullfil 1.5kA short current test according to IEC 62752:2016 Clause 9.9

RoHS compliant

CONTACT DATA

| | |
|---------------------------|---|
| Contact arrangement | 2H |
| Contact resistance | 10mΩ max.(at 6VDC 20A) |
| Contact materail | AgSnO ₂ |
| Contact clearance | 2.1mm min. |
| Contact rating (Res.Load) | 20A 277VAC |
| Max.switching voltage | 460VAC |
| Max.switching current | 20A |
| Max.switching power | 9200VA |
| Mechanical endurance | 1×10 ⁶ ops |
| Electrical endurance | ≥3×10 ⁴ ops(85°C, 1s on 9 s off, 20A 277VAC, Resistive load) |

Notes:1) The data shown above are initial values.
2) Min. contact load is reference value. Please perform the confirmation test with the actual load before usage since reference value may change according to switching frequencies, environmental conditions and expected life cycles.

CHARACTERISTICS

| | | |
|-------------------------------|-------------------------|-----------------------|
| Insulation resistance | | 1000MΩ(500VDC) |
| Dielectric strength | Between coil & contacts | 2500VAC 1min |
| | Between open contacts | 4000VAC 1min |
| | Between contacts sets | 2500VAC 1min |
| Operate time (at nomi. volt.) | | 15ms max. |
| Release time (at nomi. volt.) | | 10ms max. |
| Shock resistance | Functional | 98m/s ² |
| | Destructive | 980m/s ² |
| Vibration resistance | | 10Hz to 55Hz 1.5mm DA |
| Humidity | | 5% to 85%RH |
| Ambient temperature | | -40°C to 85°C |
| Termination | | PCB |
| Unit weight | | Approx.30g |
| Construction | | Flux proofed(RT II) |

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

COIL

| | |
|-------------------------------|---|
| Coil power | Approx. 1.4W |
| Holding voltage ¹⁾ | 45% ~ 80%U _N (at 23°C) 45% ~ 55%U _N (at 105°C) |

Notes:1) The coil holding voltage is the voltage applied to coil 100ms after the rated voltage.

COIL DATA

23°C

| Nominal Voltage VDC | Pick-up Voltage VDC max. | Drop-out Voltage VDC min | Max. Allowable Voltage VDC ¹⁾ | Coil Resistance Ω |
|---------------------|--------------------------|--------------------------|--|-------------------|
| 12 | 9.60 | 0.60 | 13.2 | 102×(1±10%) |
| 18 | 14.4 | 0.90 | 19.8 | 231×(1±10%) |
| 24 | 19.2 | 1.20 | 26.4 | 411×(1±10%) |
| 48 | 38.4 | 2.40 | 52.8 | 1645×(1±10%) |

Notes:1) The data shown above are initial values.
2) Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.

SAFETY APPROVAL RATINGS

| | |
|--------|---------------------|
| UL/CUL | 20A 460VAC at 105°C |
| TUV | 20A 460VAC at 105°C |

Notes:1) All values unspecified are at room temperature.
2) Only some typical rating are listed above.If more details are required,please contact us.



HONGFA RELAY

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

2025 Rev. 1.00

ORDERING INFORMATION

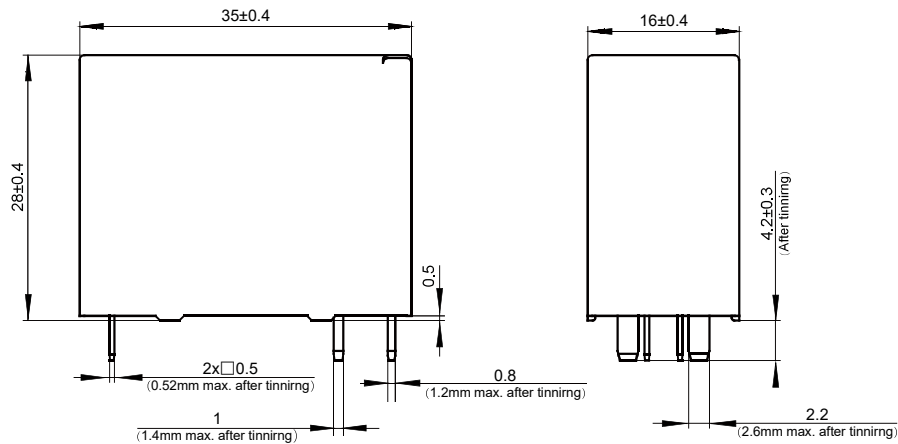
| | | | | | | |
|---------------------|--|----|-----|---|---|-------|
| Type | HF190F/ | 12 | -2H | T | F | (XXX) |
| Coil voltage | 12,18,24,48 VDC | | | | | |
| Contact arrangement | 2H:2 Form A | | | | | |
| Contact material | T: AgSnO ₂ | | | | | |
| Insulation class | F: Class F | | | | | |
| Special code | XXX: Customer special requiremen Nil: Standard | | | | | |

Notes: 1) Flux-proofed relays can not be used in the environment with pollutants like H₂S, SO₂, NO₂, dust, etc.
 2) Water clearing or surface process is not suggested after the flux-proofed relays are assembled on PCB.
 3) The customer special requirement express as special code after evaluating by Hongfa.
 4) Short circuit capability: $I_p \geq 1.02\text{kA}$, $I^2t \geq 2.5\text{kA}^2\text{s}$ (compliant to IEC 62752 9.9.2.4 a))
 5) Test Sequence E: 9.9.2.4 a) 460VAC, $I_p \geq 1.02\text{kA}$, $I^2t \geq 2.5\text{kA}^2\text{s}$ ($I_n \leq 16\text{A}$, $I_{nc} = 1.5\text{kA}$) + 9.9.2.2 460 VAC, $I_m = 100\text{A}$.
 Test Sequence F: 9.9.2.4 b) 460VAC, $I_m = 100\text{A}$ + 9.9.2.4 c) 460VAC, $I_p \geq 1.02\text{kA}$, $I^2t \geq 2.5\text{kA}^2\text{s}$ ($I_n \leq 16\text{A}$, $I_{\Delta c} = 1.5\text{kA}$).

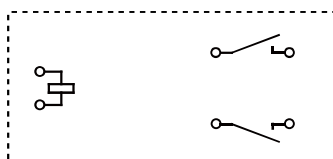
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

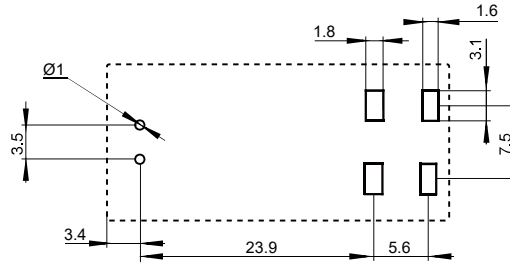
Outline Dimensions



Wiring Diagram(Bottom view)



PCB Layout(Bottom view)



- Notes:**
- 1) The pin dimension of the product outline drawing is the size before tinning (it will become larger after tinning), and the mounting hole size is the recommended design size of the PCB board hole. The specific PCB board hole design size can be mapped and adjusted according to the actual product.
 - 2) 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 $> 5\text{mm}$ and $\leq 30\text{mm}$, tolerance should be $\pm 0.4\text{mm}$; outline dimension $> 30\text{mm}$, tolerance should be $\pm 0.6\text{mm}$.
 - 3) The tolerance without indicating for PCB layout is always $\pm 0.1\text{mm}$.

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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