

HF41F

SUBMINIATURE POWER RELAY



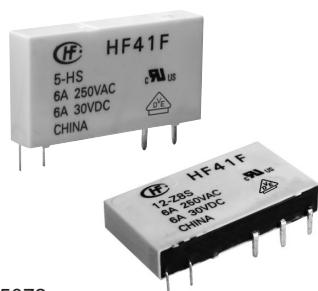
File No.: E133481



File No.: 40020043



File No.: CQC09002035072



Features

- Slim size (width 5mm)
- High breakdown voltage 4kV (between coil and contacts)
- Surge voltage up to 6kV (between coil and contacts)
- Meeting VDE 0700, 0631 reinforce insulation
- High sensitive: Approx.170mW
- Sockets available
- 1 Form A and 1 Form C configurations
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (28.0 x 5.0 x 15.0) mm

CONTACT DATA

| | |
|----------------------------|--|
| Contact arrangement | 1A, 1C |
| Contact resistance | No gold plated:100mΩ max. (at 1A 6VDC) Gold plated: 30mΩ max. (at 1A 6VDC) |
| Contact material | AgSnO ₂ , AgNi |
| Contact rating (Res. load) | 6A 250VAC/30VDC |
| Max. switching voltage | 400VAC / 125VDC |
| Max. switching current | 6A |
| Max. switching power | 1500VA / 180W |
| Mechanical endurance | 1 x 10 ⁷ ops |
| Electrical endurance | H type: 6 x 10 ⁴ ops (6A 250VAC/30VDC, Resistive load, AgNi, at 85°C, 1s on 9s off) Z type: 3 x 10 ⁴ ops (NO, 6A 250VAC/30VDC, Resistive load, AgNi, at 85°C, 1s on 9s off) 1 x 10 ⁴ ops (NC, 6A 250VAC/30VDC, Resistive load, AgNi, at 85°C, 1s on 9s off) |

CHARACTERISTICS

| | | |
|------------------------------|------------------------------|---------------------|
| Insulation resistance | 1000MΩ (at 500VDC) | |
| Dielectric strength | Between coil & contacts | 4000VAC 1 min |
| | Between open contacts | 1000VAC 1 min |
| Operate time (at nomi.volt.) | 8ms max. | |
| Release time (at nomi.volt.) | 4ms max. | |
| Shock resistance | Functional | 49m/s ² |
| | Destructive | 980m/s ² |
| Vibration resistance | 10Hz to 55Hz 1mm DA | |
| Humidity | 5% to 85% RH | |
| Ambient temperature | -40°C to 85°C | |
| Termination | PCB | |
| Unit weight | Approx. 5g | |
| 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) Please do not install a SPDT(1 Form C) type relay on either of the smallest sides or facing downward.
4) UL insulation system: Class A

COIL

| | |
|------------|------------------------------|
| Coil power | 5VDC to 24VDC: Approx. 170mW |
| | 48VDC, 60VDC: Approx. 210mW |

COIL DATA

at 23°C

| Nominal Voltage VDC | Pick-up Voltage VDC max. | Drop-out Voltage VDC min. | Max. Voltage VDC ²⁾ | Coil Resistance Ω |
|---------------------|--------------------------|---------------------------|--------------------------------|-------------------|
| 5 | 3.75 | 0.25 | 7.5 | 147 x (1±10%) |
| 6 | 4.50 | 0.30 | 9.0 | 212 x (1±10%) |
| 9 | 6.75 | 0.45 | 13.5 | 476 x (1±10%) |
| 12 | 9.00 | 0.60 | 18 | 848 x (1±10%) |
| 18 | 13.5 | 0.90 | 27 | 1906 x (1±15%) |
| 24 | 18.0 | 1.20 | 36 | 3390 x (1±15%) |
| 48 ³⁾ | 36.0 | 2.40 | 72 | 10600 x (1±15%) |
| 60 ³⁾ | 45.0 | 3.00 | 90 | 16600 x (1±15%) |

- Notes:** 1) When require pick-up voltage ≤ 70% nominal voltage, special order allowed.
2) Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.
3) For products with rated voltage ≥ 48V, measures should be taken to prevent coil overvoltage in order to protect coil in test and application (eg. Connect diodes in parallel).

SAFETY APPROVAL RATINGS

| | |
|--------|---------------------------------------|
| UL/CUL | 6A 30VDC at 85°C |
| | 6A 277VAC at 85°C R300 B300 |
| VDE | 6A 30VDC at 85°C 6A 250VAC at 85°C |

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

2015 Rev. 1.02

ORDERING INFORMATION

| | | | | | | |
|-------------------------------|--|--|-----------------------|--|--|--|
| Type | HF41F / 12 -H 8 S T G (XXX) | | | | | |
| Coil voltage | 5, 6, 9, 12, 18, 24, 48, 60VDC | | | | | |
| Contact arrangement | H: 1 Form A | | Z: 1 Form C | | | |
| Version ¹⁾ | 8: Flat pack version | | Nil: Vertical version | | | |
| Construction ²⁾³⁾ | S: Plastic sealed | | Nil: Flux proofed | | | |
| Contact material | T: AgSnO ₂ | | Nil: AgNi | | | |
| Contact plating ⁴⁾ | G: Gold plated | | Nil: No gold plated | | | |
| Customer special code | e.g. (210) stands for pick-up voltage less than 70% of nominal voltage | | | | | |

Notes: 1) We recommend flux proofed types for the flat pack version.

2) 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.).

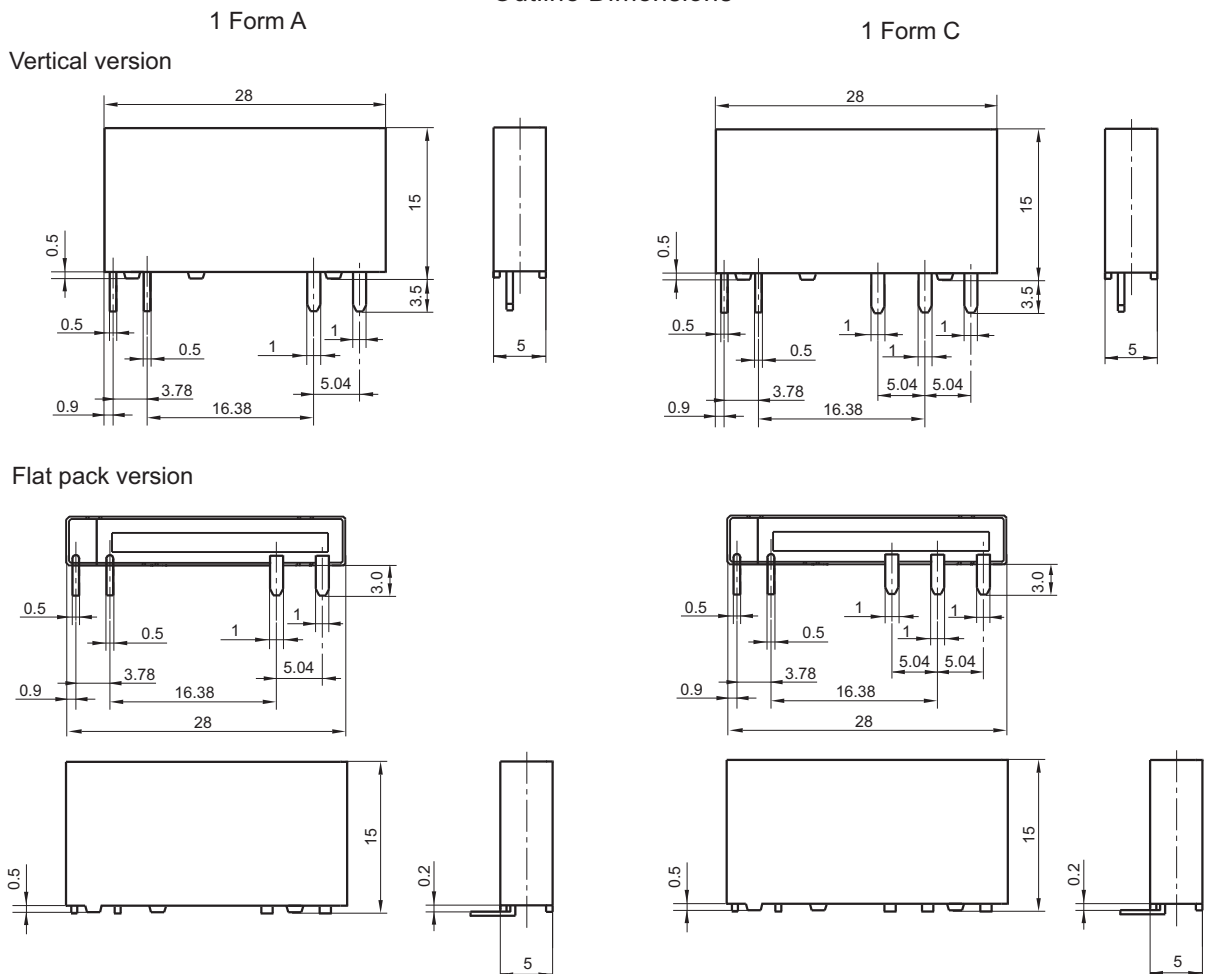
3) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.

4) For gold plated type, the min. switching current and min. switching voltage is 10mA 5VDC.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

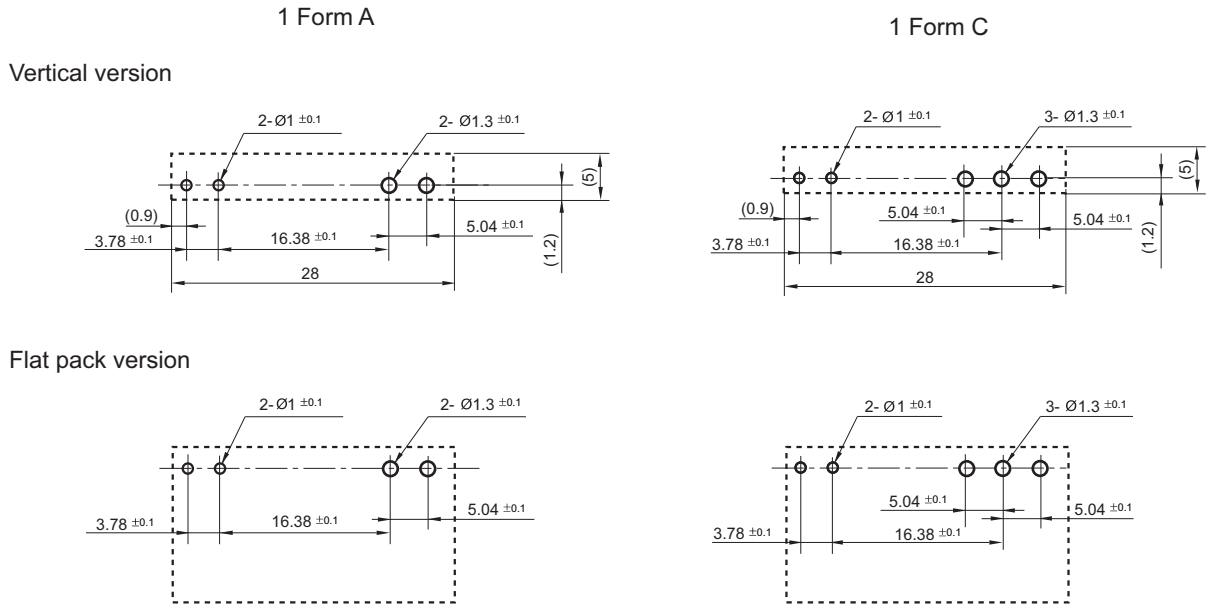
Outline Dimensions



OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

PCB Layout (Bottom view)

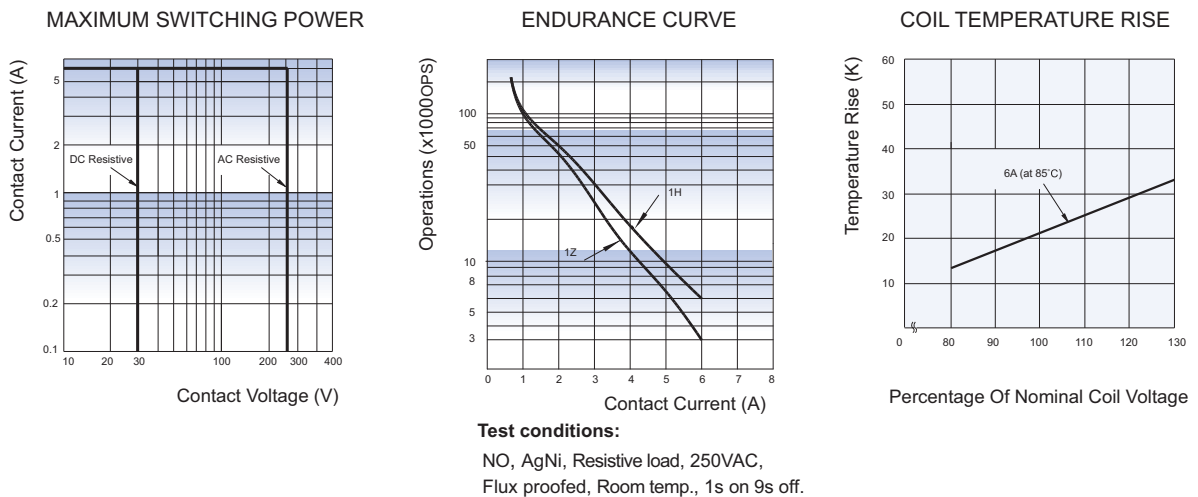


Wiring Diagram (Bottom view)



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 layouts is always $\pm 0.1\text{mm}$.

CHARACTERISTIC CURVES



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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