# HF167F-200 SOLAR RELAY

File No.: E133481

File No.: R 50374273

## Features

- 200A switching capability
- Applicable to solar photovoltaic inverter
- 4 mm contact gap
- Low coil holding voltage contributes to saving energy of equipment
- UL insulation system: Class F

**RoHS compliant**

## CONTACT DATA

| | |
|---|---|
| Contact arrangement | 1A |
| Contact resistance(initial) | 1mΩ max.( 6VDC 20A) |
| Contact material | AgNi |
| Contact rating (Res. load) | Making 55A carrying 200A<br>breaking 55A 800VAC |
| Max. switching voltage | 830VAC |
| Max. switching current | 200A |
| Max. switching power | 45650VA |
| Mechanical endurance | 1 x $10^6$OPS |
| Electrical endurance | 3 x $10^4$OPS<br>Making 55A, carrying 200A, breaking 55A, 800VAC, Resistive load, at 85˚C, 1s on 9s off) |

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

## CHARACTERISTICS

| | | |
|---|---|---|
| Insulation resistance | | 1000MΩ (at 500VDC) |
| Dielectric strength | Between open contacts | 2000VAC 1min |
| | Between coil & contacts | 5000VAC 1min |
| Surge Voltage | | 10kV (1.2/50μs) |
| Operate time (at rated. volt.) | | 30ms max. |
| Release time (at rated. volt.) | | 10ms max. |
| Temperature rise | | 70K max. (Contact load current 200A, 50% to 60% rated voltage excitation, at 85˚C) |
| Shock resistance | Functional | 98m/s$^2$ |
| | Destructive | 980m/s$^2$ |
| Vibration resistance* | | 10Hz to 55Hz 1.0mm DA |
| Humidity | | 5% to 85% RH |
| Ambient temperature | | -40˚C to 85˚C<br>(Apply holding voltage to coil) |
| Termination[2)] | | PCB |
| Unit weight | | Approx. 215g |
| Construction | | Flux proofed |

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

## COIL

| | |
|---|---|
| Coil power | Approx. 3W |
| Holding voltage | 40% to 100% $U_N$ (at 25˚C)<br>50% to 60%$U_N$ (at 85˚C) |

**Notes:** 1)The coil holding voltage is the voltage applied to coil 100ms after the rated voltage.
2)To avoid overheating and burning, the coil can not be consistently applied to with voltage larger than maximum holding voltage.

## COIL DATA at 23˚C

| Nominal Voltage VDC | Pick-up Voltage VDC max.[1)] | Drop-out Voltage VDC min.[1)] | Max. Voltage VDC[2)] | Coil Resistance Ω |
|---|---|---|---|---|
| 6 | 4.2 | 0.6 | 7.2 | 12x (1±10%) |
| 9 | 6.3 | 0.9 | 10.8 | 27x (1±10%) |
| 12 | 8.4 | 1.2 | 14.4 | 48x (1±10%) |
| 24 | 16.8 | 2.4 | 28.8 | 192 x (1±10%) |

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

## SAFETY APPROVAL RATINGS

| | |
|---|---|
| **UL/CUL** | Making 55A, carrying 200A,breaking 55A, 830VAC,85˚C,3 x $10^4$OPS, Resistive |
| **TÜV** | Making 55A, carrying 200A,breaking 55A, 830VAC,85˚C,3 x $10^4$OPS, Resistive |

**Notes:** 1) All values unspecified are at room temperature.
2) Only typical loads are listed above. Other load specifications can be available upon request.

## ORDERING INFORMATION

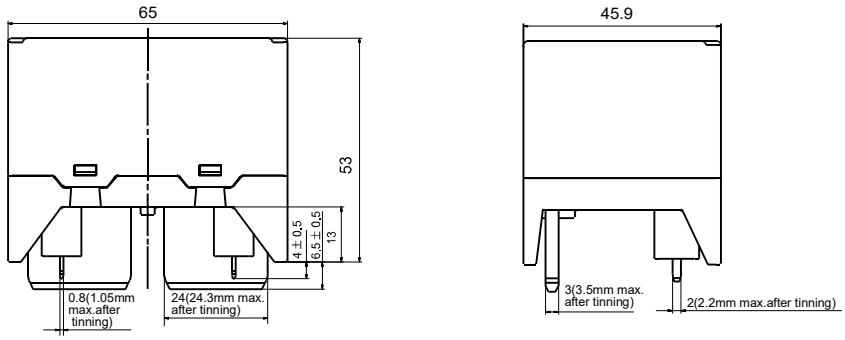
| | HF167F-200/ | 12 | -H | 3 | F | (XXX) |
|---|---|---|---|---|---|---|
| **Type** | | | | | | |
| **Coil voltage** | 6, 9, 12, 24VDC | | | | | |
| **Contact arrangement** | **H:**1 Form A | | | | | |
| **Contact material** | **3**: AgNi | | | | | |
| **Insulation standard** | **F:** Class F | | | | | |
| **Special code** [1)] | **XXX:** Customer special requirement | | **Nil:** Standard | | | |

**Notes:** 1) Flux-proofed relays can not be used inthe environment with pollutants like $H_2S$, $SO_2$, $NO_2$, 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.

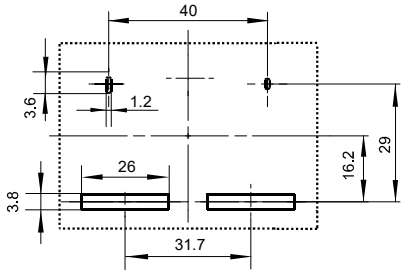
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

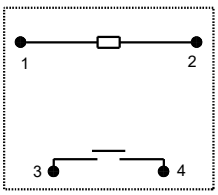
Outline Dimensions




PCB Layout
(Bottom view)




Wiring Diagram
(Bottom view)




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

### 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.