

HF165F-50

MINIATURE HIGH POWER RELAY



File No:E134517



File No:CQC18002189685



Features

- 50A switching capability.
- 4kV dielectric strength (between coil and contacts).
- UL insulation system: class F available.

CONTACT DATA

Contact arrangement	1A
Voltage drop ¹⁾	Max.: 100mV (at 10A 13.5VDC)
Contact material	AgSnO ₂ /AgNi
Contact rating (Res. load)	50A 250VAC
Max. switching voltage	250VAC
Max. switching current ²⁾	50A
Max. switching power	12500VA
Mechanical endurance	1 x 10 ⁶ OPS
Electrical endurance	6000 OPS (50A 250VAC, Resistive load, at 65°C, 1s on 9s off, AgNi/AgSnO ₂) 3x10 ⁴ OPS (40A 250VAC, Resistive load, at 85°C, 1s on 9s off, AgSnO ₂)

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

2) The relay connections and wiring have to be designed with an adequate cross sections to ensure the current flow and heat dissipation.

CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	4000VAC 1min
	Between open contacts	1500VAC 1min
Surge voltage (between coil & contacts)	6kV (1.2/50μs)	
Operate time (at rated. volt.)	15ms max.	
Release time (at rated. volt.)	10ms max.	
Temperature rise	90K max. (Contact load current 50A, rated voltage excitation, at 65°C)	
Shock resistance	Functional	98m/s ²
	Destructive	980m/s ²
Vibration resistance	10Hz to 55Hz 1.5mm DA	
Ambient temperature	-40°C to 105°C	
Humidity	5% to 85% RH	
Termination	PCB	
Unit weight	Approx. 36g	
Construction	Flux proofed	

Notes: The data shown above are initial values.

COIL

Coil power	Approx. 1.2W
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COIL DATA

at 23°C

Standard

Nominal Voltage VDC ¹⁾	Pick-up Voltage VDC max ¹⁾	Drop-out Voltage VDC min ¹⁾	Max. Voltage VDC *2)	Coil Resistance Ω
5	3.75	0.5	6.5	20.8 x (1±10%)
6	4.5	0.6	7.8	30 x (1±10%)
12	9	1.2	15.6	120 x (1±10%)
24	18	2.4	31.2	480 x (1±10%)
48	36	4.8	62.4	1920 x (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	Resistance load 50A 250VAC 65°C AgNi/AgSnO ₂
	Resistance load 40A 250VAC 85°C AgSnO ₂
	Resistance load 32A 250VAC 105°C AgSnO ₂
CQC	32A 277VAC 105°C AgNi/AgSnO ₂

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

2020 Rev. 1.00

ORDERING INFORMATION

Type	HF165F-50/	12	-H	T	(XXX)
Coil voltage	5, 6, 12, 24, 48VDC				
Contact arrangement	H:1 Form A				
Contact material	T: AgSnO ₂ 3: AgNi				
Special code ³⁾	XXX: Customer special requirement		Nil: Standard		

Notes: 1) Water cleaning or surface process is not suggested after the flux-proofed relays are assembled on PCB.

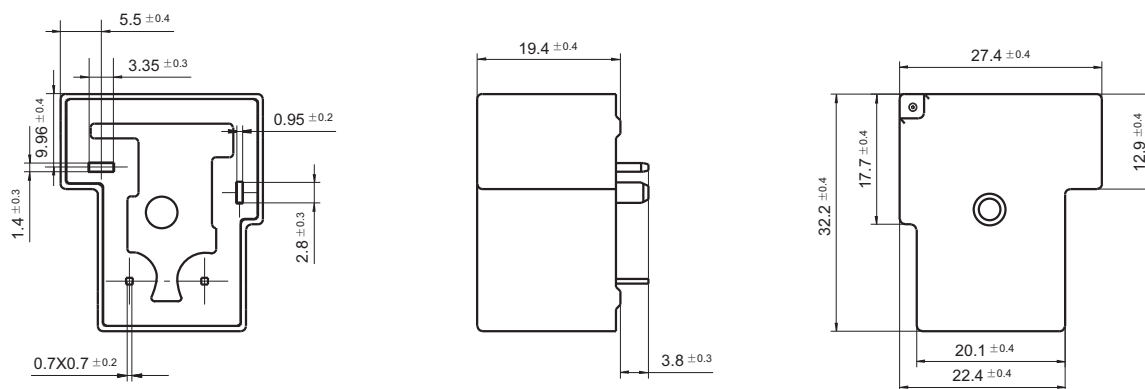
2) Flux-proofed relays can not be used in the environment with pollutants like H₂S, SO₂, NO₂, dust, etc.

3) The customer special requirement express as special code after evaluating by Hongfa.

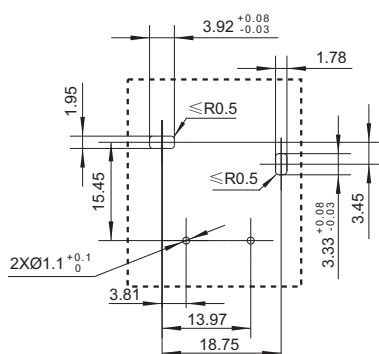
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

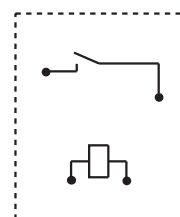
Outline Dimensions



PCB Layout (Bottom view)



Wiring Diagram



Notes: 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 is always ± 0.1 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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