

# HF49FD

# MINIATURE POWER RELAY



File No. : E133481



File No. : 40033644



File No. : R50149334



File No.:CQC17002175722



## Features

- 5A switching capability
- 3kV dielectric strength (between coil and contacts)
- Slim size (width 5mm, height 12.5mm)
- High sensitive: Min. 120mW
- Meets IEC61131-2 reinforce insulation
- Creepage/clearance distance: Min. 3.5mm
- Sockets available
- UL insulation system: Class F available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (20.0 x 5.0 x 12.5) mm

## CONTACT DATA

Contact arrangement	1A
Contact Resistance <sup>1)</sup> (at 1A 6VDC)	No gold plated: 100mΩ max. Gold plated: 50mΩ max.
Contact material	AgSnO <sub>2</sub> , AgNi
Contact rating (Res. load)	5A 250VAC/30VDC
Max. switching voltage	250VAC /30VDC
Max. switching current	5A
Max. switching power	1250VA / 150W
Min. contact load <sup>1)</sup>	No gold plated: 5VDC 10mA Gold plated: 5VDC 1mA
Mechanical endurance	2 x 10 <sup>7</sup> ops
Electrical endurance	1 x 10 <sup>5</sup> ops (3A 250VAC/30VDC, Resistive load, AgNi, at 85°C, 1s on 9s off) 5 x 10 <sup>4</sup> ops (5A 250VAC/30VDC, Resistive load, AgNi, Room temp., 1s on 9s off)

**Notes:** 1) 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 (at 500VDC)	
Dielectric strength	Between coil & contacts	3000VAC 1min
	Between open contacts	1000VAC 1min
Surge voltage(between coil & contacts)	6kV (1.2 / 50μs)	
Operate time (at nomi.volt.)	10ms max.	
Release time (at nomi.volt.)	5ms max.	
Shock resistance	Functional	98m/s <sup>2</sup>
	Destructive	980m/s <sup>2</sup>
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. 3g	
Construction	Plastic sealed	

**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, Class A.

## COIL

Coil power	Approx. 120mW (at 5VDC to 18VDC)
	Approx. 180mW (at 24VDC)

## COIL DATA at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC max. <sup>2)</sup>	Drop-out Voltage VDC min. <sup>2)</sup>	Max. Voltage VDC <sup>3)</sup>	Coil Resistance Ω
5	3.50	0.25	6.0	208 x (±10%)
6	4.20	0.30	7.2	300 x (±10%)
9	6.30	0.45	10.8	675 x (±10%)
12	8.40	0.60	14.4	1200 x (±10%)
18	12.6	0.90	21.6	2700 x (±15%)
24	16.8	1.20	28.8	3200 x (±15%)

**Notes:** 1) All above data are tested when the relays terminals are downward position. Other positions of the terminals, the pick-up and drop-out voltages will have ± 5% tolerance. For example, when the relay terminals are transverse position, the max. pick-up voltage change is 75% of nominal voltage.  
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) 24VDC 120mW type are also available, please see ordering information for more details.

## SAFETY APPROVAL RATINGS

UL/CUL	1H1 type	AgSnO <sub>2</sub>	3A 250VAC COSφ=1 at 85°C 3A 30VDC L/R =0ms at 85°C 5A 250VAC COSφ=1 5A 30VDC L/R =0ms
		AgNi	3A 250VAC COSφ=1 at 85°C 3A 30VDC L/R =0ms at 85°C 5A 250VAC COSφ=1 5A 30VDC L/R =0ms
VDE	1H2 type	AgNi	3A 250VAC COSφ=1 at 85°C 3A 30VDC L/R =0ms at 85°C 5A 250VAC COSφ=1 5A 30VDC L/R =0ms
			5A 250VAC COSφ=1 at 85°C 5A 30VDC L/R =0ms at 85°C
TÜV			5A 250VAC COSφ=1 at 70°C 5A 30VDC L/R =0ms at 70°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

2018 Rev. 1.00