HF49F/HF49FA MINIATURE POWER RELAY

c UL us
File No.:E133481

File No.:R50035304

File No.:CQC02001001937

Features

- 5A switching capability
- 2kV dielectric strength (between coil and contacts)
- Slim size (width 5mm, height 12.5mm)
- High sensitive: Min. 120mW
- HF49FA's size and terminals compatible with HFS8 (Output module) and HF5420 SSR
- Sockets available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (20.0 x 5.0 x 12.5) mm

CONTACT DATA

Contact arrangement	1A
Contact Resistance	100mΩ (at 1A 6VDC)
Contact material	$AgSnO_2$, AgNi
Contact rating (Res. load)	5A 250VAC/30VDC
Max. switching voltage	250VAC /30VDC
Max. switching current	5A
Max. switching power	1250VA / 150W
Mechanical endurance	2 x 10^7OPS
Electrical endurance	1 x 10^5OPS (See approval reports for more details)

COIL

Coil power	120 to 180mW

COIL DATA at 23˚C

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max. Allowable Voltage VDC 85˚C	Coil Resistance Ω
5	3.50	0.25	6.0	208 x (1±10%)
6	4.20	0.30	7.2	300 x (1±10%)
9	6.30	0.45	10.8	675 x (1±10%)
12	8.40	0.60	14.4	1200 x (1±10%)
18	12.6	0.90	21.6	2700 x (1±15%)
24	16.8	1.20	28.8	3200 x (1±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 max. allowable voltage in the COIL DATA is coil overdrive voltage, it is the instantaneous max. voltage which the relay coil could endure in a very short time.

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	2000VAC 1min
	Between open contacts	1000VAC 1min
Operate time (at nomi.volt.)		10ms max.
Release time (at nomi.volt.)		5ms max.
Shock resistance	Functional	98m/s²
	Destructive	980m/s²
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		Wash tight

Notes: 1) The data shown above are initial values.
2) Please find coil temperature curve in the characteristic curves below.

SAFETY APPROVAL RATINGS

UL&CUL	Single contact	5A 30VDC L/R =0ms 5A 250VAC COSØ=1
	Bifurcated contact	3A 30VDC L/R =0ms 3A 250VAC COSØ=1
TÜV		5A 250VAC COSØ=1 5A 30VDC L/R=0ms

Notes: Only some typical ratings are listed above. If more details are required, please contact us.

ORDERING INFORMATION

	HF49F / HF49FA	012	-1H	1	T	F	(XXX)

Type

Coil voltage 5, 6, 9,12, 18, 24 VDC

Contact arrangement **1H:** 1 Form A

Contact version [1)]
1: Single contact, no gold plated
1G: Single contact, gold plated
2G: Bifurcated contact, gold plated

Contact material **T:** $AgSnO_2$ (Only for single contact) **Nil:** AgNi

Insulation standard **B:** Class B **F:** Class F **Nil:** Class A

Customer special code

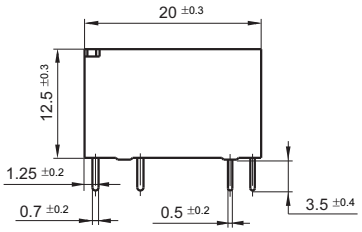
Notes: 1) The 1 tyep and 1G type is suitable for application such as home applicant, equipment, automatic control. 2G type is suitable for application like PLC control.
2) We recommend flux proofed types for a clean environment (free from contaminations like H_2S, SO_2, NO_2, dust, etc.).
We suggest to choose wash tight types and validate it in real application for an unclean environment (with contaminations like H_2S, SO_2, NO_2, dust, etc).
If water cleaning is required after the relay is assembled on PCB, please contact us for suggestion about suitable parts.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

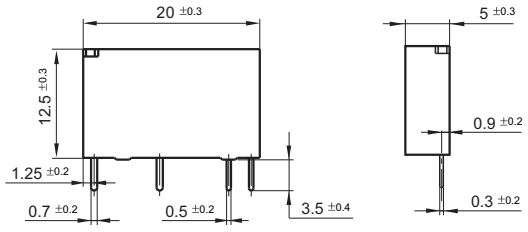
Unit: mm

Outline Dimensions

HF49F

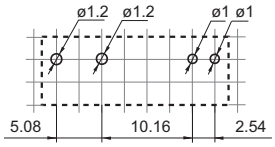


HF49FA

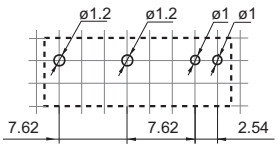


PCB Layout
(Bottom view)

HF49F



HF49FA

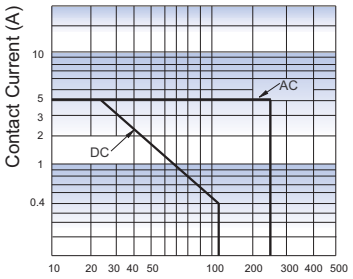


Wiring Diagram
(Bottom view)

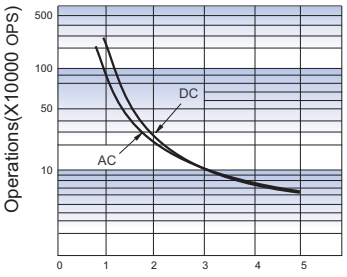
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
2) The tolerance without indicating for PCB layout is always ±0.1mm.
3) The width of the gridding is 2.54mm.

CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER



ENDURANCE CURVE



COIL TEMPERATURE RISE