HF46F SUBMINIATURE INTERMEDIATE POWER RELAY

File No.: E134517

File No.: 40025215

File No.: CQC08001024932

Features

- 5A switching capability
- 10kV impulse withstand voltage (between coil and contacts)
- Meets VDE 0700, 0631 reinforce insulation
- Highly efficient magnetic circuit for high sensitivity: 200mW
- Extremely small footprint utilizing PCB area
- UL insulation system: Class F available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (20.5 x 7.2 x 15.3) mm

CONTACT DATA

Contact arrangement	1A
Contact resistance	100mΩ max. (at 1A 24VDC)
Contact material	$AgSnO_2$, AgNi
Contact rating (Res. load)	3A/5A 250VAC / 30VDC
Max. switching voltage	277VAC / 30VDC
Max. switching current	5A
Max. switching power	1385VA / 150W
Mechanical endurance	5×10^6 OPS
Electrical endurance	1.2×10^5 OPS (See approval reports for more details)

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	4000VAC 1min
	Between open contacts	1000VAC 1min
Surge voltage (between coil & contacts)		10kV (1.2 / 50μs)
Operate time (at nomi. volt.)		10ms max.
Release time (at nomi. volt.)		10ms max.
Shock resistance	Functional	$98m/s^2$
	Destructive	$980m/s^2$
Vibration resistance 1)		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		Flux proofed, Plastic sealed

Notes: 1) Index is not that of relay length direction. The characteristics of relay length direction is only 10Hz to 55Hz 1mm DA.
2) The data shown above are initial values.
3) UL insulation system: Class F, Class B.

COIL

Coil power	Approx. 200mW

COIL DATA at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	Max. Allowable Voltage VDC	Coil Resistance Ω
3	2.25	0.18	3.90	45 x (1±10%)
5	3.75	0.25	6.50	125 x (1±10%)
6	4.50	0.30	7.80	180 x (1±10%)
9	6.75	0.45	11.7	405 x (1±10%)
12	9.00	0.60	15.6	720 x (1±10%)
18	13.5	0.90	23.4	1620 x (1±10%)
24	18.0	1.20	31.2	2880 x (1±10%)

SAFETY APPROVAL RATINGS

UL/CUL	AgNi	5A 125VAC/250VAC at 85°C 5A 277VAC/30VDC at 85°C 3A 125VAC/250VAC at 85°C 3A 277VAC/30VDC at 85°C
	$AgSnO_2$	5A 125VAC/250VAC at 85°C 5A 277VAC/30VDC at 85°C 3A 125VAC/250VAC at 85°C 3A 277VAC/30VDC at 85°C B300 R300
VDE	AgNi	5A 250VAC/30VDC at 85°C
	$AgSnO_2$	5A 250VAC/30VDC at 85°C

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

ORDERING INFORMATION

	HF46F /	12	-H	S	1	T	G	F	(XXX)
Type									
Coil voltage	3, 5, 6, 9, 12, 18, 24VDC								
Contact arrangement	**H:** 1 Form A								
Construction [1]	**S:** Plastic sealed	**Nil:** Flux proofed							
Termination	**1:** type 1	**2:** type 2							
Contact material [2]	**T:** $AgSnO_2$	**Nil:** AgNi							
Contact plating	**G:** Gold plated	**Nil:** No gold plated							
Insulation standard	**F:** Class F	**Nil:** Class B							
Customer special code									

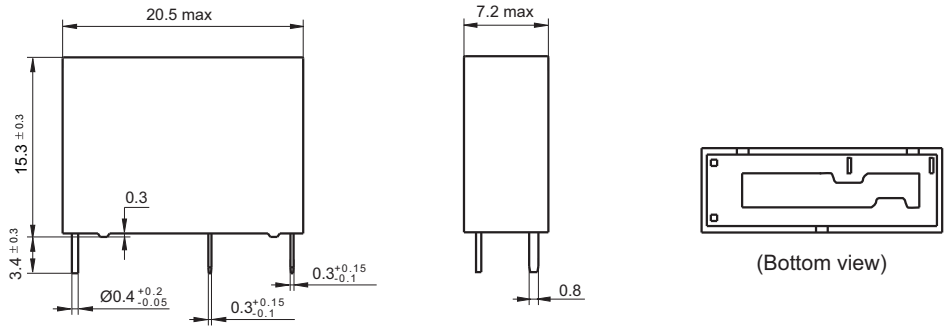
Notes: 1) Under the ambience with dangerous gas like H_2S, SO_2 or NO_2, plastic sealed type is recommended; please test the relay in real applications. If the ambience allows, flux proofed is preferentially recommended.
If water cleaning is required after the relay is assembled on PCB, please contact us for suggestion about suitable parts.
2) For the application of lamp (except LED), capacitive load, motor load or which can bring high inrush current when relay contacts connect instantly, $AgSnO_2$ contact material is recommended on priority.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

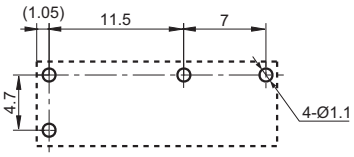
Outline Dimensions

HF46F/□□-H□1□□ (□□□)



PCB Layout

(Bottom view)



Wiring Diagram

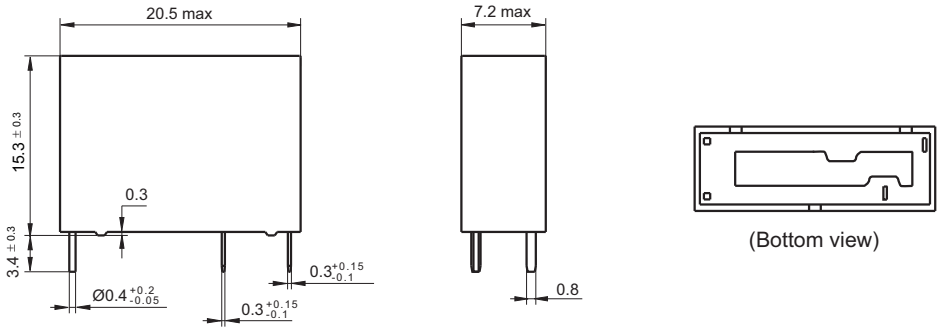
(Bottom view)

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

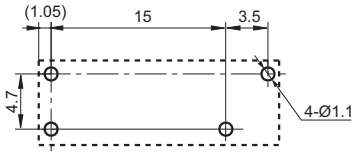
Outline Dimensions

HF46F/□□-H□2□□(□□□)



PCB Layout

(Bottom view)



Wiring Diagram

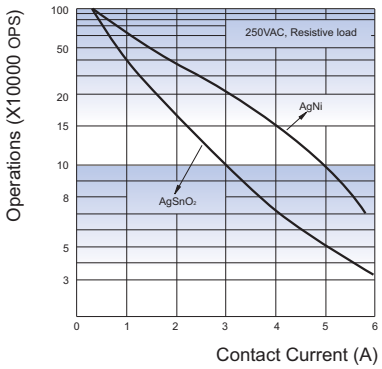
(Bottom view)

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.

CHARACTERISTIC CURVES

ENDURANCE CURVE



Disclaimer

This datasheet is for the customers' reference. All the specifications are 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.