

# HF141FH/HF141FD

# MINIATURE HIGH POWER RELAY



### Features

- 16A switching capability(HF141FH)
- 5kV dielectric strength (between coil and contacts)
- Low height: 20.6mm
- 1 pole (HF141FH), 2 poles (HF141FD) configurations available
- Sockets available
- Wash tight and flux proofed types available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (29.0 x 12.6 x 20.6) mm

### CONTACT DATA

Contact arrangement	1H, 1Z	2H, 2Z
Contact resistance	100mΩ (at 1A 6VDC)	
Contact material	AgSnO <sub>2</sub> , AgNi, AgCdO	
Contact rating (Res.load)	16A 240VAC/30VDC	5A 240VAC/30VDC
Max. switching power	3840VA / 480W	1200VA / 150W
Max. switching current	16A	5A
Max. switching voltage	240VAC/30VDC	
Mechanical endurance	1 x 10 <sup>7</sup> OPS	
Electrical endurance	1 x 10 <sup>5</sup> OPS	

### CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	5000VAC 1min
	Between open contacts	1000VAC 1min
	Between contact sets	3000VAC 1min (HF141FD)
Surge voltage (between coil & contacts)		10000VAC (1.2/50μs)
Operate time (at nomi. volt.)		15ms max.
Release time (at nomi. volt.)		8ms max.
Vibration resistance		10Hz to 55Hz 1.5mm DA
Shock resistance	Functional	100m/s <sup>2</sup> (10g)
	Destructive	1000m/s <sup>2</sup> (100g)
Humidity		HF141FH: 35% to 80% RH HF141FD: 20% to 80% RH
Ambient temperature		-40°C to 70°C
Termination		PCB
Unit weight		Approx. 13g
Construction		Wash tight, Flux proofed

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

2) Please find coil temperature curve in the characteristic curves below.

### COIL

Coil power	Standard: 720mW; Sensitive: 540mW
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### COIL DATA

at 23°C

#### HF141FD Standard Type (720mW)

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max. Allowable Voltage VDC	Coil Resistance Ω
3	2.25	0.3	3.9	12.5 x (1±10%)
5	3.75	0.5	6.5	36 x (1±10%)
6	4.50	0.6	7.8	50 x (1±10%)
9	6.75	0.9	11.7	115 x (1±10%)
12	9.00	1.2	15.6	200 x (1±10%)
24	18.0	2.4	31.2	820 x (1±10%)
48	36.0	4.8	62.4	3300 x (1±10%)

#### HF141FD Sensitive Type (540mW)

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max. Allowable Voltage VDC	Coil Resistance Ω
3	2.4	0.3	3.9	17 x (1±10%)
5	4.0	0.5	6.5	47 x (1±10%)
6	4.8	0.6	7.8	68 x (1±10%)
9	7.2	0.9	11.7	155 x (1±10%)
12	9.6	1.2	15.6	270 x (1±10%)
24	19.2	2.4	31.2	1100 x (1±10%)
48	38.4	4.8	62.4	4400 x (1±10%)



HONGFA RELAY

ISO9001、ISO/TS16949、ISO14001、OHSAS18001 CERTIFIED

2007 Rev. 2.00

## COIL DATA

at 23°C

### HF141FH Standard Type (720mW)

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max. Allowable Voltage VDC	Coil Resistance $\Omega$
3	2.4	0.3	3.9	12.5 x (1±10%)
5	4.0	0.5	6.5	36 x (1±10%)
6	4.8	0.6	7.8	50 x (1±10%)
9	7.2	0.9	11.7	115 x (1±10%)
12	9.6	1.2	15.6	200 x (1±10%)
18	14.4	1.8	23.4	460 x (1±10%)
24	19.2	2.4	31.2	820 x (1±10%)
48	38.4	4.8	62.4	3300 x (1±10%)

### HF141FH Sensitive Type (540mW)

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max. Allowable Voltage VDC	Coil Resistance $\Omega$
3	2.4	0.3	3.9	17 x (1±10%)
5	4.0	0.5	6.5	47 x (1±10%)
6	4.8	0.6	7.8	68 x (1±10%)
9	7.2	0.9	11.7	155 x (1±10%)
12	9.6	1.2	15.6	270 x (1±10%)
18	14.4	1.8	23.4	620 x (1±10%)
24	19.2	2.4	31.2	1100 x (1±10%)
48	38.4	4.8	62.4	4400 x (1±10%)

## ORDERING INFORMATION

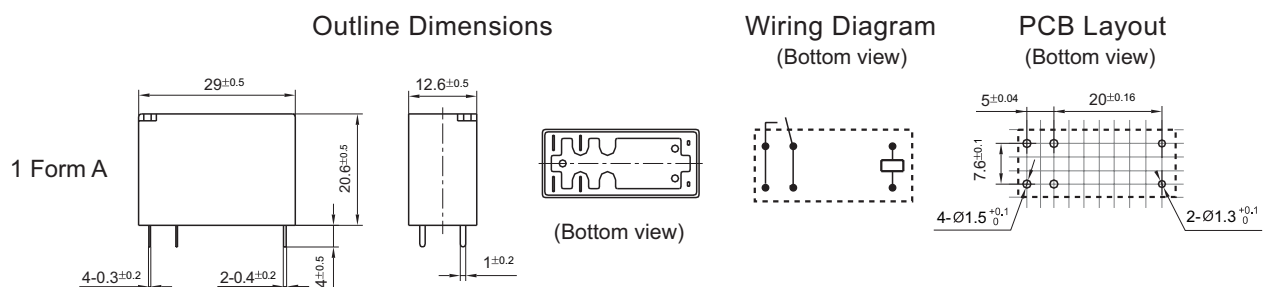
<b>HF141FH / 012 -H S T P (XXX)</b> <b>HF141FD</b>	
Type	<b>HF141FH:</b> 1 pole <b>HF141FD:</b> 2 poles
Coil voltage	<b>HF141FH:</b> 3, 5, 6, 9, 12, 18, 24, 48VDC <b>HF141FD:</b> 3, 5, 6, 9, 12, 24, 48VDC
Contact arrangement	<b>H:</b> 1 Form A <b>Z:</b> 1 Form C <b>2H:</b> 2 Form A <b>2Z:</b> 2 Form C
Construction <sup>1)</sup>	<b>S:</b> Wash tight <b>Nil:</b> Flux proofed
Contact material	<b>T:</b> AgSnO <sub>2</sub> <b>Nil:</b> AgCdO, AgNi
Coil power	<b>P:</b> Standard <b>Nil:</b> Sensitive
Customer special code <sup>2)</sup> (Only for special requirements)	e.g. (551) stands for RoHS compliant (Cadmium containing contacts) (555) stands for RoHS compliant (Cadmium-free contacts)

**Notes:** 1) Under the ambience with dangerous gas like H<sub>2</sub>S, SO<sub>2</sub> or NO<sub>2</sub>, wash tight type is recommended; please test the relay in real applications. If the ambience allows, flux proofed is preferentially recommended.

2) HF141FH/HF141FD is an environmental friendly product. Please mark a special code (555) or (551) when ordering. (551) stands RoHS compliant with Cadmium contact; (555) stands for RoHS compliant with Cadmium-free contact.

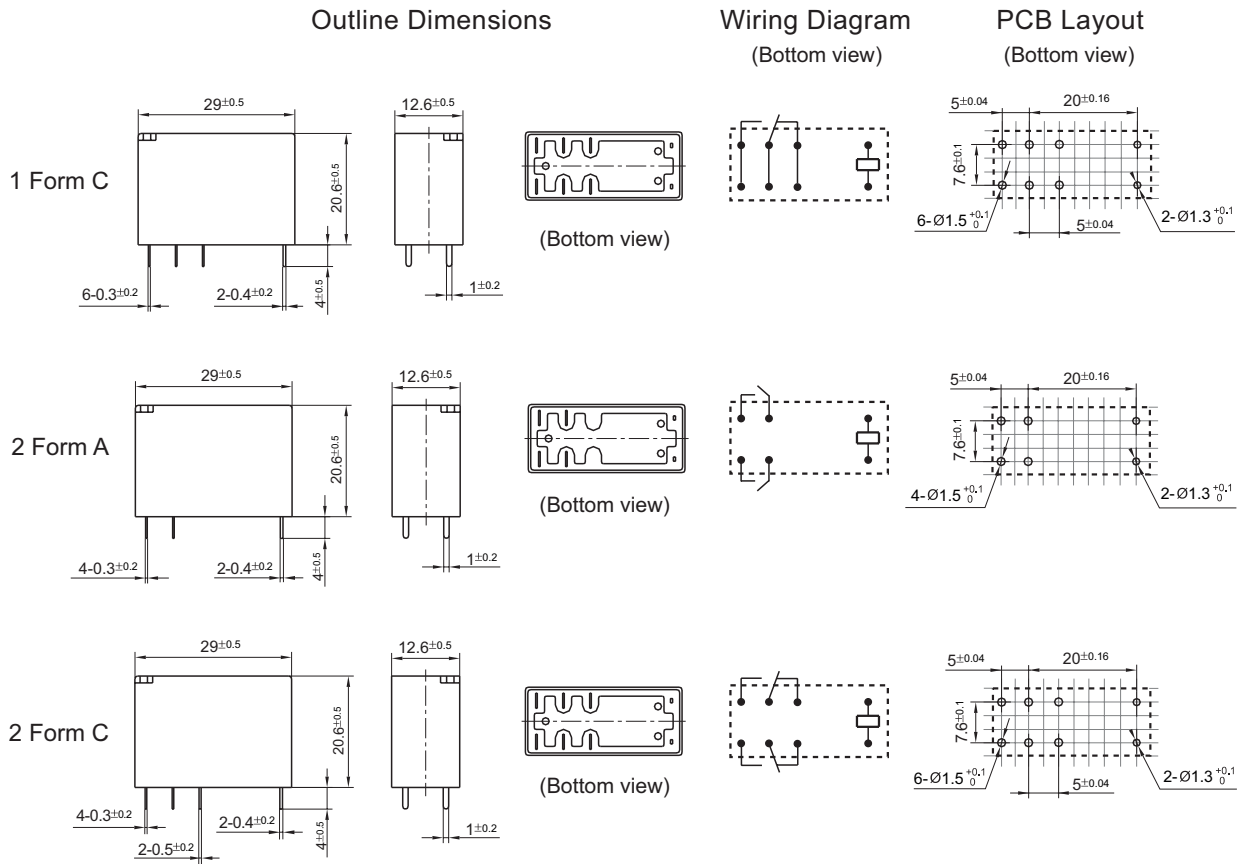
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PCB BOARD LAYOUT

Unit: mm



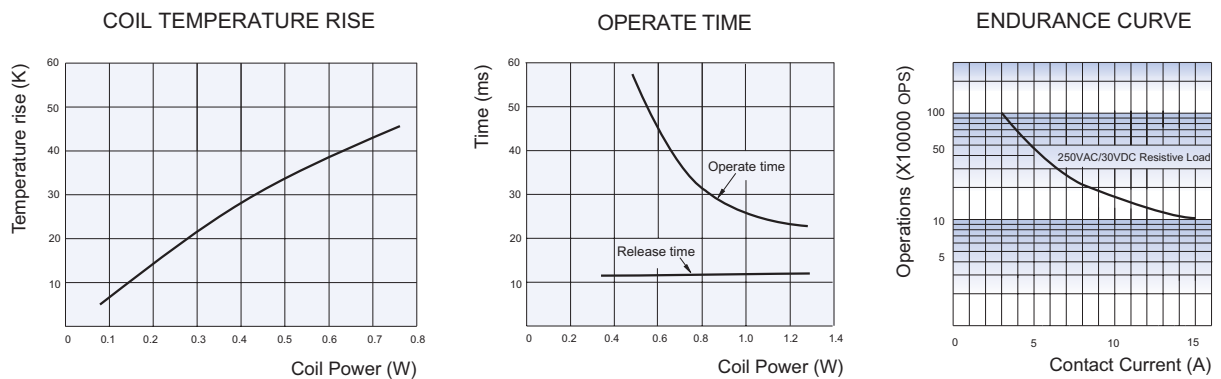
# OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm



Remark: The width of the gridding is 2.5mm.

## CHARACTERISTIC CURVES



### 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.

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