HF141FF

MINIATURE HIGH POWER RELAY

C UL US

File No.:E133481

CQC

File No.:CQC09002034351

Features

- 10A switching capability
- 5kV dielectric strength (between coil and contacts)
- Sockets available
- 1 Form A ,1 Form B and 1 Form C configurations
- Plastic sealed and flux proofed types available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: 29.0mm x 12.6mm x 20.6mm

CONTACT DATA

Contact arrangement	1A, 1B, 1C	
Contact resistance[1]	50mΩ max.(at 1A 6VDC)	
Contact material	AgSnO2, AgCdO	
Contact rating (Res.load)	Standard	High Capacity
	8A 250VAC /30VDC 10A 125VAC	10A 30VDC 10A 250VAC
Max. switching power	2000VA / 240W	2500VA / 300W
Max. switching current	10A	
Max. switching voltage	250VAC / 30VDC	
Mechanical endurance	1 x 10^7OPS	
Electrical endurance	Standard type: 1 x 10^5OPS (NO or NC, 8A 250VAC/30VDC, Resistive load, Room temp., 1s on 9s off), High capactiy type: 1 x 10^5OPS (NO or NC, 10A 250VAC/30VDC, Resistive load, Room temp., 1s on 9s off),	

Notes: 1) The data shown above are initial values.
2) For plastic sealed type, the venting-hole should be excised in electrical endurance test.

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	5000VAC 1min
	Between open contacts	1000VAC 1min
Operate time (at nomi. volt.)		15ms max.
Release time (at nomi. volt.)		5ms max.
Vibration resistance		10Hz to 55Hz 1.5mm DA
Shock resistance	Functional	98m/s^2
	Destructive	980m/s^2
Humidity		5% to 85% RH
Ambient temperature		-40˚C to 85˚C
Termination		PCB
Unit weight		Approx. 13g
Construction		Plastic sealed, Flux proofed

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

COIL

Coil power	Standard: Approx. 720mW; Sensitive: Approx. 550mW

COIL DATA   at 23˚C

Standard type

Nominal Voltage VDC	Pick-up Voltage VDC max.[2]	Drop-out Voltage VDC min.[2]	Max. Voltage VDC [3]	Coil Resistance Ω
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%)

Sensitive type

Nominal Voltage VDC	Pick-up Voltage VDC max.[2]	Drop-out Voltage VDC min.[2]	Max. Voltage VDC* [3]	Coil Resistance Ω
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%)

Notes: 1) When requiring pick-up voltage < 80% of nominal voltage, special order allowed.
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) Under ambient temperature, applying more than 80% of rating voltage to coil, relay will take action accordingly. But in order to meet the stated product performance, please apply rated voltage to coli.

SAFETY APPROVAL RATINGS

UL/CUL	High Capacity	10A 30VDC/250VAC
	Standard	8A 30VDC/250VAC
		10A 125VAC

Notes: 1) All values unspecified are at room temperature.

2) Only typical loads are listed above. Other load specifications can be available upon request.

ORDERING INFORMATION

HF141FF / 012 -H S P G (XXX)

Type	
Coil voltage	5, 6, 9, 12, 18, 24, 48VDC
Contact arrangement	**H:** 1 Form A **D:** 1 Form B **Z:** 1 Form C
Construction [1]	**S:** Plastic sealed **Nil:** Flux proofed
Coil power	**P:** Standard **Nil:** Sensitive
Contact capacity	**G:** High capacity (AgSnO2) **Nil:** Standard type (AgCdO)
Special code [3]	**XXX:** Customer special requirement **Nil:** Standard

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 type is preferentially recommended.

2) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.

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

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT
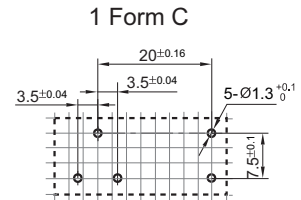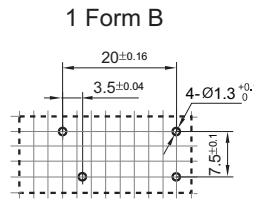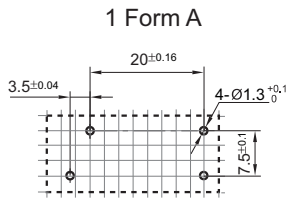
Unit: mm

Outline Dimensions

1 Form A   1 Form B   1 Form C

(Bottom view)   (Bottom view)   (Bottom view)
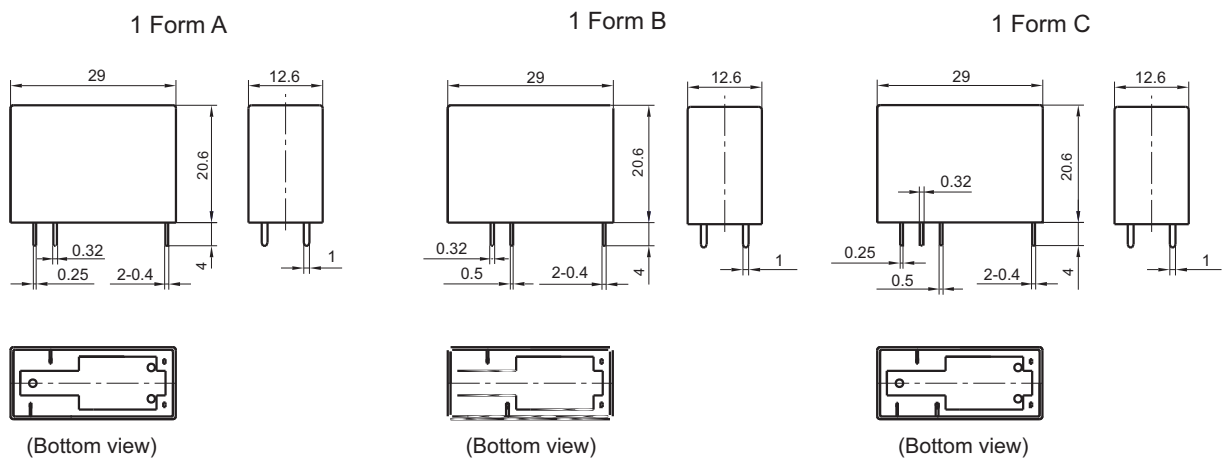
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.

2) The tolerance without indicating for PCB layout is always ±0.1mm.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT
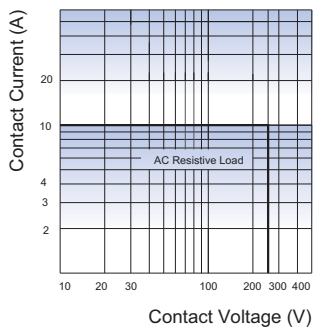
Unit: mm

PCB Layout (Bottom view)

1 Form A

20 ± 0.16
3.5 ± 0.04
$4-\varnothing1.3\,^{+0.1}_{0}$
7.5 ± 0.1

1 Form B

20 ± 0.16
3.5 ± 0.04
$4-\varnothing1.3\,^{+0.1}_{0}$
7.5 ± 0.1

1 Form C

20 ± 0.16
3.5 ± 0.04
3.5 ± 0.04
$5-\varnothing1.3\,^{+0.1}_{0}$
7.5 ± 0.1

Remark: The width of the gridding is 2.5mm.

Wiring Diagram (Bottom view)

CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER

Contact Current (A)

AC Resistive Load

Contact Voltage (V)

ENDURANCE CURVE

Operations (X10000 OPS)

277VAC Resistive Load (AgSnO₂)

277VAC Resistive Load (AgCdO)

Contact Current (A)

Test conditions:
No contact, Resistive load,
Flux proofed, Room temp., 1s on 9s off.
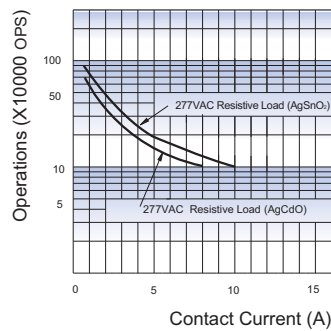
COIL TEMPERATURE RISE

Temperature rise (K)

Coil Power (W)

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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