HF140FF MINIATURE INTERMEDIATE POWER RELAY

File No.:E134517

File No.:R50149131

File No.:CQC02001001940

Features

- 10A switching capability
- 5kV dielectric strength (between coil and contacts)
- 1.5mm contact gap available
- Sockets available
- Wash tight and flux proofed types available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (29.0 x 13.0 x 26.3) mm

CONTACT DATA

Contact arrangement	2A, 2C
Contact resistance	50mΩ (at 1A 24VDC)
Contact material	$AgSnO_2$, AgNi, AgCdO
Contact rating (Res. load)	5A 250VAC 10A 250VAC 8A 30VDC
Max. switching voltage	250VAC / 30VDC
Max. switching current	10A
Max. switching power	2500VAC / 240W
Mechanical endurance	Standard: 1 x 10^7OPS W type: 5X10^5OPS
Electrical endurance	1 x 10^5OPS

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	5000VAC 1min
	Between contacts sets	3000VAC 1min
	Between open contacts	W type:3000VAC 1min Standard:1000VAC 1min
Surge voltage (between coil & contacts)		10kV (1.2 x 50 μs)
Operate time (at nomi. volt.)		15ms max.
Release time (at nomi. volt.)		5ms max.
Humidity		98% RH, +40˚C
Ambient temperature		-40˚C to 85˚C
Shock resistance	Functional	98m/s²
	Destructive	980m/s²
Vibration resistance		10Hz to 55Hz 1.5mmDA
Termination		PCB
Unit weight		Approx. 18g
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: Approx. 530mW W type: Approx. 800mW

COIL DATA at 23˚C

Standard type

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	17 x (1±10%)
5	3.75	0.5	6.5	47 x (1±10%)
6	4.50	0.6	7.8	68 x (1±10%)
9	6.75	0.9	11.7	160 x (1±10%)
12	9.00	1.2	15.6	275 x (1±10%)
18	13.5	1.8	23.4	620 x (1±10%)
24	18.0	2.4	31.2	1100 x (1±10%)
48	36.0	4.8	62.4	4170 x (1±10%)
60	45.0	6.0	78.0	7000 x (1±10%)

COIL DATA

at 23˚C

W Type (Only for 2 Form A)

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	11.3 x (1±10%)
5	3.75	0.5	6.5	31 x (1±10%)
6	4.50	0.6	6.6	45 x (1±10%)
9	6.75	0.9	9.9	101 x (1±10%)
12	9.00	1.2	13.2	180 x (1±10%)
18	13.5	1.8	19.8	405 x (1±10%)
24	18.0	2.4	26.4	720 x (1±10%)
48	36.0	4.8	52.8	2880 x (1±10%)
60	45.0	6.0	66.0	4500 x (1±10%)

Notes: When require pick-up voltage < 75% of nominal voltage, special order allowed.

SAFETY APPROVAL RATINGS

UL&CUL	10A 250VAC 10A 30VDC 8A 30VDC TV-3 125VAC 1/4 HP 240VAC 1/8HP 120VAC
TÜV	5A 250VAC 5A 30VDC

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

ORDERING INFORMATION

HF140FF /	012	-2H	S	W	T	G	(XXX)

Type

Coil voltage 3,5,6,9,12,18,24, 48, 60VDC

Contact arrangement **2H:** 2 Form A **2Z:** 2 Form C

Construction [1] **S:** Wash tight **Nil:** Flux proofed

Contact Gap **W:** 1.5mm (Only for 2 Form A) **Nil:** Standard

Contact material **T:** $AgSnO_2$ **3:** AgNi **Nil:** AgCdO

Contact plating **G:** Gold plated **Nil:** No gold plated

Customer special code

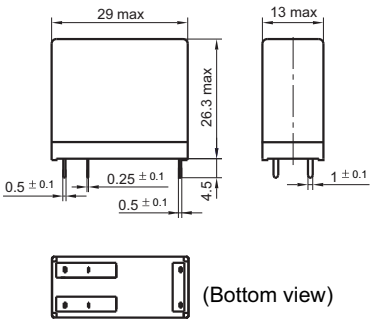
Notes: 1) Under the ambience with dangerous gas like H_2S, SO_2 or NO_2, wash tight type is recommended; Please test the relay in real applications. If the ambience allows, flux proofed type is preferentially recommended.
2) Standard version is with black cover. Smoke dust cover is available.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

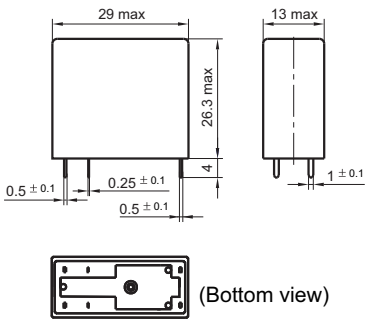
Unit: mm

Outline Dimensions

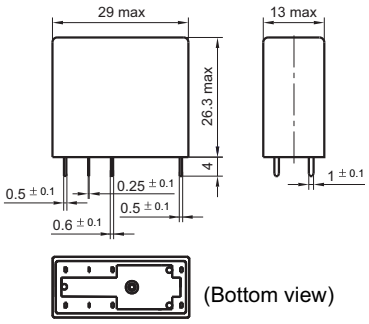
2 Form A & Flux proofed



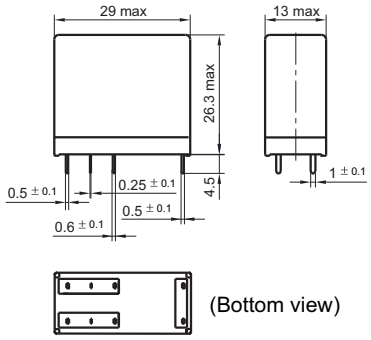
2 Form A & Wash tight



2 Form C & Wash tight

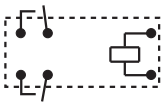


2 Form C & Flux proofed

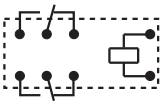


Wiring Diagram (Bottom view)

2 Form A

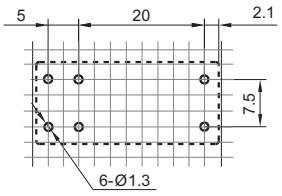


2 Form C

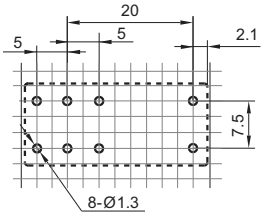


PCB Layout (Bottom view)

2 Form A



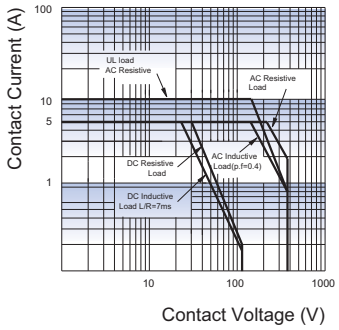
2 Form C



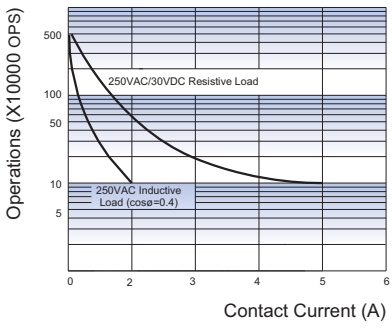
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
2) The tolerance without indicating for PCB layout is always ±0.1mm.
3) The width of the gridding is 2.5mm.

CHARACTERISTIC CURVES

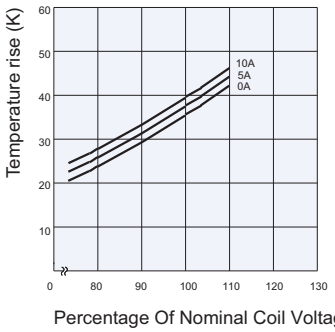
MAXIMUM SWITCHING POWER



ENDURANCE CURVE



COIL TEMPERATURE RISE



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.