HF32F SUBMINIATURE INTERMEDIATE POWER RELAY

File No.: E134517

File No.: 40012204

File No.: CQC12002076528
CQC16002148335

Features

- 1 Form A and 1 Form C configurations
- Subminiature, standard PCB layout
- Plastic sealed and flux proofed types available
- UL insulation system: Class F
- Product in accordance to IEC 60335-1 available

RoHS compliant

CONTACT DATA

Contact arrangement	1A, 1C		
Contact resistance[1)]	100mΩ max(at 1A 6VDC)		
Contact material	$AgSnO_2$, AgNi, AgCdO		
Contact rating (Res. load)	1A		1C
	H type: 5A 250VAC 5A 30VDC 10A 125VAC	HL type: 3A 250VAC 3A 30VDC	3A 250VAC 3A 30VDC
Max. switching current	10A		3A
Max. switching powert	1250VA/150W		750VA/90W
Max. switching voltage	250VAC/30VDC		
Mechanical endurance	5 x 10^6OPS		
Electrical endurance	H type:1 x 10^5OPS (5A 250VAC, Resistive load, Room temp., 1s on 1s off) HL type: 1x 10^5OPS (3A 250VAC, Resistive load, Room temp., 1s on 1s off) Z type:1x 10^5OPS (NO:3A/NC:3A, 250VAC, Resistive load, Room temp., 1.5s on 1.5s off)		

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

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	2500VAC 1min
	Between open contacts	1000VAC 1min
Operate time (at rated. volt.)		8ms max.
Release time (at rated. volt.)		5ms max.
Humidity		5% to 85% RH
Operation ambient temperature		-40˚C to 85˚C
Shock resistance	Functional	98m/s²
	Destructive	980m/s²
Vibration resistance		10Hz to 55Hz 1.5mm DA
Termination		PCB
Unit weight		Approx. 6g
Construction		Plastic sealed, Flux proofed

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

COIL

Coil power	Standard: Approx. 450mW; Sensitive: Approx.200mW

COIL DATA at 23˚C

Standard type

Nominal Voltage VDC	Pick-up Voltage VDC max.[1)]	Drop-out Voltage VDC min.[1)]	Max. Voltage VDC *[2)]	Coil Resistance Ω
3	2.25	0.15	3.9	20 x (1±10%)
5	3.75	0.25	6.5	55 x (1±10%)
6	4.50	0.30	7.8	80 x (1±10%)
9	6.75	0.45	11.7	180 x (1±10%)
12	9.00	0.60	15.6	320 x (1±10%)
18	13.5	0.90	23.4	720 x (1±10%)
24	18.0	1.20	31.2	1280 x (1±10%)
48	36.0	2.40	62.4	5120 x (1±10%)

Sensitive type (Only for 1 Form A)

Nominal Voltage VDC	Pick-up Voltage VDC max.[1)]	Drop-out Voltage VDC min.[1)]	Max. Voltage VDC *[2)]	Coil Resistance Ω
3	2.25	0.15	4.5	45 x (1±10%)
5	3.75	0.25	7.5	125 x (1±10%)
6	4.50	0.30	9.0	180 x (1±10%)
9	6.75	0.45	13.5	400 x (1±10%)
12	9.00	0.60	18.0	720 x (1±10%)
18	13.5	0.90	27.0	1600 x (1±10%)
24	18.0	1.20	36.0	2800 x (1±10%)
48	36.0	2.40	72.0	11520 x (1±10%)

Notes: 1) The data shown above are initial values.
2)*Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.

SAFETY APPROVAL RATINGS

UL/CUL	1H	$AgSnO_2$,AgCdO, AgNi	H type: 5A 250VAC /30VDC 85˚C 5A 250VAC 10A 125VAC 85˚C HL type: 3A 250VAC /30VDC 85˚C
		AgCdO	H type: 5A 250VAC 85˚C 1/10HP 125VAC 70˚C 1/6HP 250VAC 85˚C 10LRA /1.5FLA 120VAC 70˚C HL type: 5A 125VAC 70˚C
	1Z	$AgSnO_2$,AgCdO, AgNi	3A 250VAC /30VDC 85˚C
VDE	1H	$AgSnO_2$,AgCdO, AgNi	H type: 5A 250VAC /30VDC 85˚C 5A 250VAC 85˚C HL type: 3A 250VAC /30VDC 85˚C
	1Z	$AgSnO_2$,AgCdO, AgNi	3A 250VAC /30VDC 85˚C
CQC	1H	$AgSnO_2$,AgCdO, AgNi	H type: 5A 250VAC /30VDC 85˚C HL type: 3A 250VAC /30VDC 85˚C
	1Z	$AgSnO_2$,AgCdO, AgNi	3A 250VAC /30VDC 85˚C

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

	HF32F /	012	-H	S	L	3	(XXX)

Type

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

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

Construction [1] **S:** Plastic sealed **Nil:** Flux proofed

Coil Power **L:** Sensitive (Only for 1 Form A) **Nil:** Standard

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

Special code[3] **XXX:** Customer special requirement **Nil:** Standard

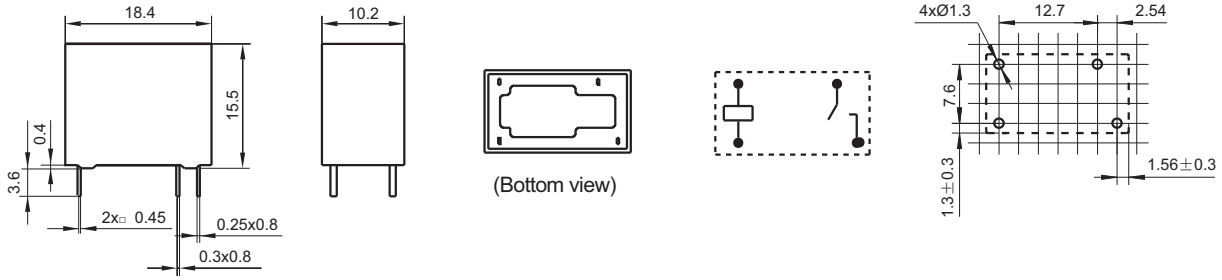
Notes: 1) Under the ambience with dangerous gas like H_2S, SO_2 or NO_2, plastic sealed type is recommended; Please test the relay in real applications. If the ambience allows, flux proofed type is preferentially recommended.
2) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.
3) The customer special requirement express as special code after evaluating by Hongfa. e.g.(335) stands for product in accordance to IEC 60335-1 (GWT).
4)Two packing methods available: paper box package, tube package,Standard tube packing length is 553mm. Any special requirement needed, please contact us for more details.
5) For products that should meet the explosion-proof requirements of "IEC 60079 series",please note [Ex] after the specification while placing orders.Not all products have explosion-proof certification,so please contact us if necessary, in order to select the suitable products.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

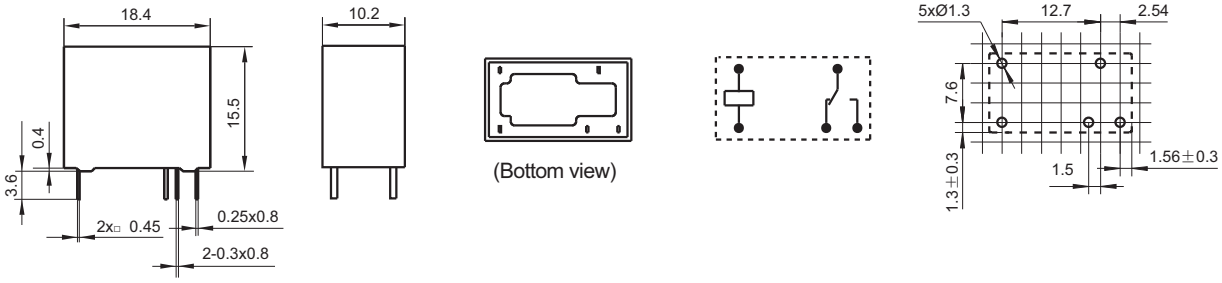
Unit: mm

Outline Dimensions | Wiring Diagram (Bottom view) | PCB Layout (Bottom view)

1 Form A



1 Form C



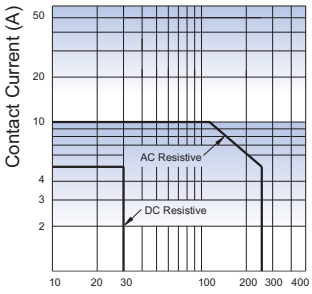
Remark:1) * The additional tin top is max. 1mm.

2) 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.

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

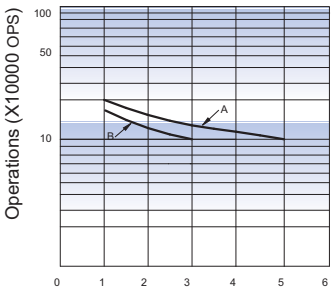
CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER



Contact Voltage (V)

EDURANCE CURVE



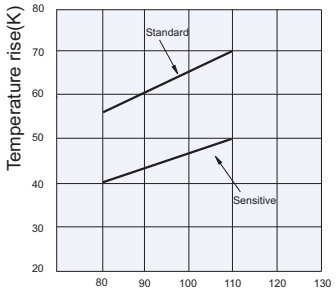
Contact Current (A)

Notes:

1.Curve A: H type
Curve B: HL type, Z type

2.**Test conditions:**
H type: Resistive load, 5A 250VAC, Room temp., 1s on 1s off
HL type: Resistive load, 5A 250VAC, Room temp., 1s on 1s off
Z type: NO/NC, Resistive load, 3A 250VAC, Room temp., 1.5s on 1.5s off

COIL TEMPERATURE RISE



Percentage Of Nominal Coil Voltage

Test conditions:
Standard: 5A at 85˚C
Sensitive: 3A at 70˚C
Mounting distance: 5mm

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.