HF32F SUBMINIATURE INTERMEDIATE POWER RELAY

File No.: E134517

File No.: 40012204

File No.: CQC12002076528



Features

- 10A switching capability
- 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
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (18.4 x 10.2 x 15.3) mm

CONTACT DATA

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

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	2500VAC 1min
	Between open contacts	1000VAC 1min
Operate time (at nomi. volt.)		8ms max.
Release time (at nomi. volt.)		5ms max.
Humidity		5% to 85% RH
Ambient temperature		-40˚C to 70˚C
Shock resistance	Functional	$98m/s^2$
	Destructive	$980m/s^2$
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.	Drop-out Voltage VDC min.	Max. Voltage VDC *	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.	Drop-out Voltage VDC min.	Max. Voltage VDC *	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: *Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.

SAFETY APPROVAL RATINGS

UL/CUL	1 Form A	AgCdO, AgNi	H type: 5A 250VAC /30VDC at 70˚C 10A 125VAC at 70˚C HL type: 3A 250VAC /30VDC at 70˚C
		AgCdO	H type: 1/10HP 125VAC at 70˚C 1/6HP 250VAC at 70˚C 10LRA /1.5FLA 120VAC at 70˚C HL type: 5A 125VAC at 70˚C
	1 Form C	AgCdO, AgNi	3A 250VAC/30VDC at 70˚C
VDE	1 Form A	AgCdO, AgNi	H type: 5A 250VAC /30VDC at 70˚C HL type: 3A 250VAC /30VDC at 70˚C
	1 Form C	AgCdO, AgNi	3A 250VAC/30VDC at 70˚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 Q 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 Capacity	**Q:** High Capacity (Only for Sensitive)	**Nil:** Standard
Contact material	**3:** AgNi	**Nil:** AgCdO
Special code[3]	**XXX:** Customer special requirement	**Nil:** Standard

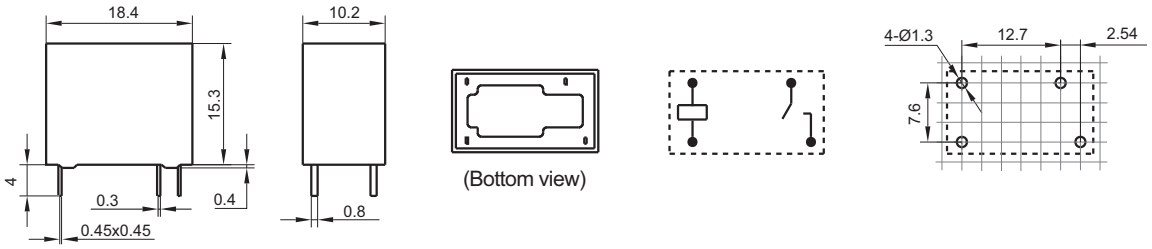
Notes: 1) Under the ambience with dangerous gas like H_2S, SO_2 or NO_2, plastic sealed type is recommended; Please test the relay in real applications. If the ambience allows, flux proofed type is preferentially recommended.
2) Contact is recommended for suitable condition and specifications if water 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).

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

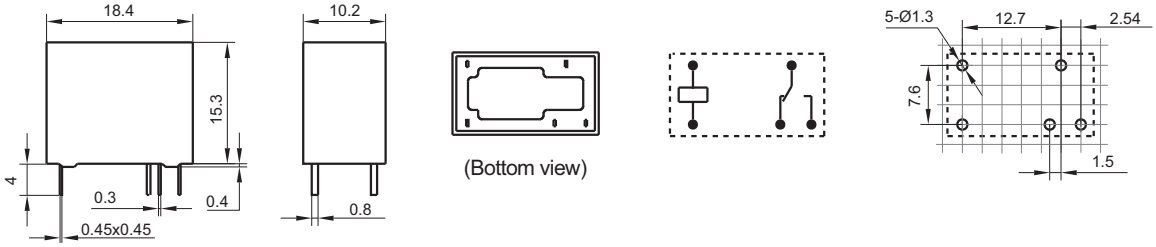
Unit: mm

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

1 Form A



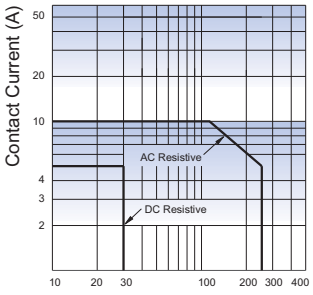
1 Form C



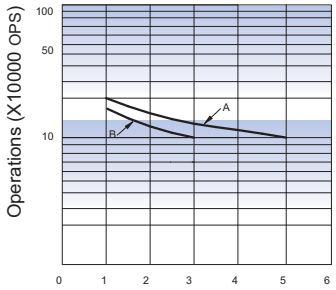
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
2) The tolerance without indicating for PCB layout is always ±0.1mm.
3) The width of the gridding is 2.54mm.

CHARACTERISTIC CURVES

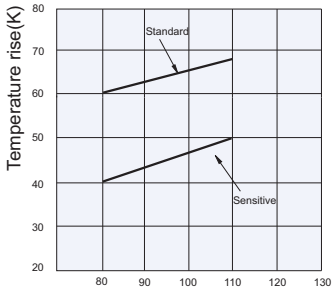
MAXIMUM SWITCHING POWER



EDURANCE CURVE



COIL TEMPERATURE RISE



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

Test conditions:
Standard: 5A at 70℃
Sensitive: 3A at 70℃
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.

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