HF33F

SUBMINIATURE INTERMEDIATE POWER RELAY



CONTACT DATA

Contact arrangement	1A, 1C					
Contact resistance	100mΩ max.(at 1A 24VDC)					
Contact material	AgSnO2, AgNi, AgCdO					
	1A		1	IC		
		N	0	NC		
Contact rating (Res. load)	5A 250VAC 5A 30VDC 10A 125VAC	5A 250VAC 5A 30VDC 10A 125VA0		3A 250VAC 3A 30VDC		
Max. switching current	10A 3					
Max. switching power	1250VA / 150W 750VA / 90V					
Max. switching voltage	250VAC / 30VDC					
Mechanical endurance	5 x 10 ⁶ 0PS					
Electrical endurance	H type:1 x 10 ⁵ ops (5A 250VAC, Resistive load, Room temp., 1s on 9s off) Z type:1 x 10 ⁵ ops (NO:5A /NC:3A 250VAC,Resistive load, Room temp., 1.5s on 1.5s off)					

CHARACTERISTICS

Insulation	resistance	1000MΩ (at 500VDC)		
Dielectric	Between coil & contacts	4000VAC 1mi		
strength	Between open contacts	1000VAC 1min		
Operate t	ime (at nomi. volt.)	8ms max		
Release t	ime (at nomi. volt.)	5ms max		
Ambient t	emperature	-40°C to 70°C		
Humidity		5% to 85% R⊦		
Shock	Functional	98m/s²		
resistance	Destructive	980m/s		
Vibration resistance		10Hz to 55Hz 1.6mm DA		
Termination		PCB		
Unit weight		Approx. 7g		
Construction		Plastic sealed, Flux proofed		

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

Features

- 10A switching capability
- Creepage distance: 8mm (coil & contacts)
- Clearance distance: NO type 4.5mm, NC type 4mm
- 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: (20.5 x 10.2 x 15.3) mm

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

			5A 250VAC/30VDC at 40°C
			8A 250VAC at 40°C
		AgCdO	10A 125VAC at 40°C
			10A 277VAC COSØ =0.4 at 40°C
			1/10HP 125VAC, 1/6HP 250VAC at 40°C
			5A 250VAC/30VDC at 70°C
			8A 250VAC at 70°C
	1 Form A	AgNi	10A 125VAC at 70°C
			10A 277VAC COSØ =0.4 at 70°C
UL/CUL			1/10HP 125VAC, 1/6HP 250VAC at 70°C
UL/CUL		AgSnO2	5A 250VAC/30VDC at 70°C
1 Form C			10A 125VAC at 70°C
		AgCdO	3A 250VAC at 40°C
	1 Form C		3A 30VDC at 40°C
		AgNi	3A 250VAC at 70°C
		AgSnO ₂	3A 30VDC at 70°C
		AgNi	5A 250VAC at 85°C
	1 Form A	AgCdO	5A 250VAC at 70°C*
VDE		AgSnO ₂	5A 250VAC at 70°C
	1 Form C	AgCdO AgNi	NC: 3A 250VAC at 70°C*

Notes: 1) *The vent hole is kept open during load approval;
2) For AgSnO2 Contact type, the vent-hole cover should be excised.
3) All values unspecified are at room temperature.
4) Only typical loads are listed above. Other load specifications can be available upon request.

ORDERING INFORMATION									
	HF33F /	012	-H	S	L	3	G	F	(XXX)
Туре									
Coil voltage	3, 5, 6, 9, 12, 18, 24,	48VDC							
Contact arrange	ment H: 1 Form A	Z: 1 Form	C						
Construction ¹⁾	S: Plastic seale	d Nil: Flu	ux proo	fed					
Coil power L: Sensitive (Only for 1 Form A) Nil: Standard									
Contact material	T: AgSnO ₂	3: AgNi	N	il: AgCo	Ob				
Contact plating	G: Gold plated	Nil: No g	old plat	ed					
Insulation stand	ard F: Class F								
Special code ³) XXX: Customer special requirement Nil: Standard									

Notes: 1) Under the ambience with dangerous gas like H2S, SO2 or NO2, 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



Remark: 1) In case of no tolerance shown in outline dimension: outline dimension \leq 1mm, tolerance should be ±0.2mm; outline dimension >1mm and \leq 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







COIL TEMPERATURE RISE



Notes: Standard: 5A at 70 °C Sensitive: 5A at 70 °C Mounting distance: 10mm

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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