

HF33F-G

SUBMINIATURE INTERMEDIATE POWER RELAY



File No.:E134517



File No.:125661



File No.:CQC12002076530



Features

- 10A switching capability
- Creepage distance: 8mm
- Clearance distance: H type 4.5mm,Z type 4mm
- 1 Form A and 1 Form C configurations
- UL insulation system: Class F
- Product in accordance to IEC 60335-1 available
- Plastic sealed and flux proofed types available
- Shape and Pin compatible with HF33F

RoHS compliant

CONTACT DATA

Contact arrangement	1A, 1C		
Contact resistance	100mΩ max.(at 1A 6VDC)		
Contact material	AgSnO ₂		
Contact rating (Res. load)	1A	1C	
		NO	NC
	10A 250VAC	10A 250VAC	5A 250VAC
Max.switching current	10A		5A
Max.switching power	2500VA		1250VA
Max.swtiching voltage	277VAC		
Mechanical endurance	5 x 10 ⁶ ops		
Electrical endurance	NO:1 x 10 ⁵ ops(10A 250VAC, Resistive load, 40°C, 1s on 9s off) NC:1 x 10 ⁵ ops(5A 250VAC, Resistive load, 40°C, 1s on 9s off)		

CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	4000VAC 1min
	Between open contacts	1000VAC 1min
Operate time (at rated. volt.)	8ms max.	
Release time (at rated. volt.)	5ms max.	
Shock resistance	Functional	98m/s ²
	Destructive	980m/s ²
Vibration resistance	10Hz to 55Hz 1.5mm DA	
Humidity	5% to 85% RH	
Ambient temperature	-40°C to 85°C	
Termination	PCB	
Unit weight	Approx. 7g	
Construction	Plastic sealed ⁽²⁾ Flux proofed	

Notes: The data shown above are initial values.

COIL

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

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	45 x (1±10%)
5	3.75	0.25	6.5	125 x (1±10%)
6	4.50	0.30	7.8	180 x (1±10%)
9	6.75	0.45	11.7	400 x (1±10%)
12	9.00	0.60	15.6	720 x (1±10%)
18	13.5	0.90	23.4	1600 x (1±10%)
24	18.0	1.20	31.2	2800 x (1±10%)
48	36.0	2.40	62.4	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.



HONGFA RELAY

ISO9001, IATF16949, ISO14001, ISO45001, IECQ QC 080000, ISO/IEC 27001 CERTIFIED

2024 Rev. 1.00

SAFETY APPROVAL RATINGS

VDE	1H	AgSnO ₂	10A 250VAC/277VAC, 85°C 10A 30VDC, 40°C 5A 250VAC/277VAC, 105°C 10A 250VAC/277VAC, 105°C(only for sensitive type) Makiing 4.4A 277VAC/Breking 2.2A 277VAC, 105°C
	1Z	AgSnO ₂	NO:10A 250VAC/277VAC, 85°C NO:10A 30VDC, 40°C NO:Makiing 4.4A 277VAC/Breking 2.2A 277VAC, 105°C NC:5A 250VAC/277VAC,85°C NC:10A 30VDC,40°C
UL/CUL ⁽¹⁾	1H	AgSnO ₂	10A 250VAC/277VAC, 40°C 10A 250VAC/277VAC, 85°C 10A 30VDC, 85°C TV-5 120VAC/240VAC, 85°C(only for standard type) 1/2HP 250VAC, 85°C 1/3HP 125VAC, 85°C Electronic Ballast,1A 120VAC, 85°C 10A 250VAC/277VAC, 105°C(only for sensitive type)
	1Z	AgSnO ₂	NO:10A 250VAC/277VAC, 40°C NO:10A 250VAC/277VAC, 85°C NO:10A 30VDC, 85°C NO:TV-5 120VAC/240VAC, 85°C(only for standard type) NO:1/2HP 250VAC, 85°C NO:1/3HP 125VAC, 85°C NO:Electronic Ballast,1A 120VAC, 85°C NO:10A 250VAC/277VAC, 105°C(only for sensitive type) NC:5A 250VAC/277VAC, 40°C NC:5A 250VAC/277VAC, 85°C NC:5A 30VDC, 85°C
CQC	1H	AgSnO ₂	10A 250VAC, 85°C
	1Z	AgSnO ₂	NO:10A 250VAC, 85°C NC:5A 250VAC, 85°C

Notes: 1) Opening the vent hole under contact material Plastic sealed types testing.

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

ORDERING INFORMATION

Type	HF33F-G / 12 -H S L T F (XXX)
Coil voltage	3, 5, 6, 9, 12, 18, 24, 48VDC
Contact arrangement	H: 1 Form A Z: 1 Form C
Construction ¹⁾²⁾	S: Plastic sealed Nil: Flux proofed
Coil power	L: Sensitive 200mW(H type only) Nil: Standard 450mW
Contact material	T: AgSnO ₂
Insulation standard	F: Class F
Special code	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.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

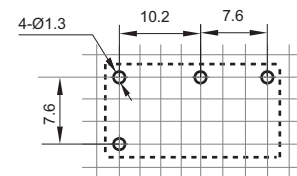
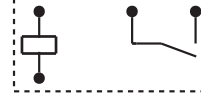
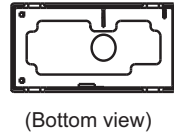
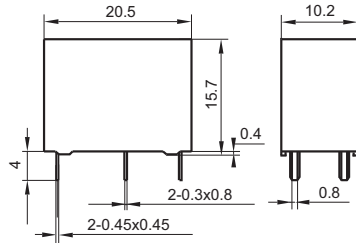
Unit: mm

Outline Dimensions

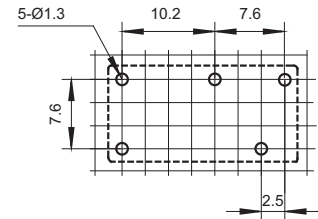
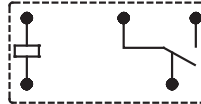
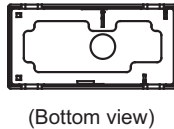
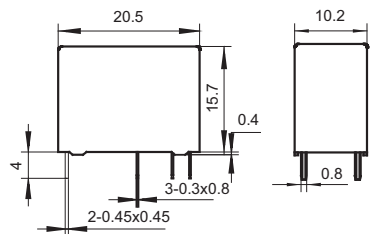
Wiring Diagram (Bottom view)

PCB Layout (Bottom view)

1 Form A



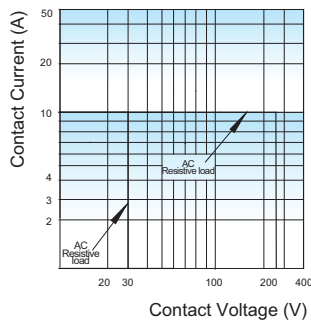
1 Form C



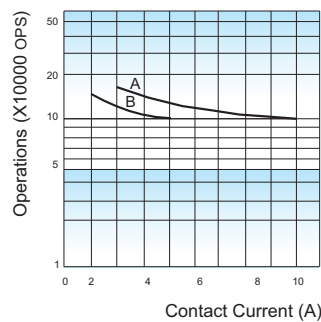
- Remark: 1) In case of no tolerance shown in outline dimension: outline dimension $\leq 1\text{mm}$, tolerance should be $\pm 0.2\text{mm}$; outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, tolerance should be $\pm 0.3\text{mm}$; outline dimension $> 5\text{mm}$, tolerance should be $\pm 0.4\text{mm}$.
 2) The tolerance without indicating for PCB layout is always $\pm 0.1\text{mm}$.
 3) Mesh width is 2.54mm.

CHARACTERISTIC CURVES

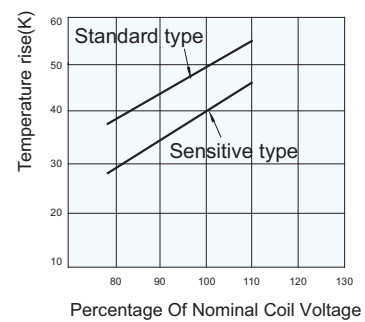
MAXIMUM SWITCHING POWER



ENDURANCE CURVE



COIL TEMPERATURE RISE



Notes:

- Curve A: NO contact
 Curve B: NC contact

Test conditions:

- A: NO, 250VAC/277VAC, Resistive load
 flux proofed type, Room temp, 1s on 9s off
 B: NC, 250VAC/277VAC, Resistive load
 flux proofed type, Room temp, 1s on 9s off

Test conditions: 10A at 85°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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