HF7FF SUBMINIATURE INTERMEDIATE POWER RELAY

c UL us
File No.:E134517

CQC
File No.:CQC09002028260

Features

- 10A switching capability
- 1 Form A and 1 Form C configurations
- Plastic sealed and flux proofed types available
- UL insulation system: Class F available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (22.5 x 16.5 x 16.5) mm

CONTACT DATA

Contact arrangement	1A, 1C
Contact resistance	100mΩ max.(at 1A 6VDC)
Contact material	$AgSnO_2$, AgCe
Contact rating (Res. load)	5A 250VAC/30VDC 10A 250VAC/28VDC
Max. switching voltage	250VAC / 30VDC
Max. switching current	10A
Max. switching power	2400VA / 280W
Mechanical endurance	1 x 10^7 OPS
Electrical endurance	1HT, 1ZT type: 1 x 10^4OPS (10A 250VAC, Resistive load, Room temp., 1s on 9s off) 1H, 1Z type: 1 x 10^4OPS (5A 250VAC, Resistive load, Room temp., 1s on 9s off)

CHARACTERISTICS

Insulation resistance		100MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	1500VAC 1min
	Between open contacts	750VAC 1min
Operate time (at nomi. volt.)		10ms max.
Release time (at nomi. volt.)		5ms max.
Shock resistance	Functional	98m/s²
	Destructive	980m/s²
Vibration resistance		10Hz to 55Hz 1.5mm DA
Humidity		5% to 85% RH
Ambient temperature		-40°C to 70°C
Termination		PCB
Unit weight		Approx. 9.5g
Construction		Plastic sealed, Flux proofed

Notes: 1) The data shown above are initial values.
2) Please find coil temperature curve in the characteristic curves below.
3) UL insulation system: Class F, Class B, Class A.

COIL

Coil power	5VDC to 24VDC: Approx. 360mW 48VDC: Approx. 510mW

COIL DATA at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	Max. Voltage VDC *	Coil Resistance Ω
3	2.40	0.3	3.6	25 x (1±10%)
5	4.00	0.5	6.0	70 x (1±10%)
6	4.80	0.6	7.2	100 x (1±10%)
9	7.20	0.9	10.8	225 x (1±10%)
12	9.60	1.2	14.4	400 x (1±10%)
18	14.4	1.8	21.6	900 x (1±10%)
24	19.2	2.4	28.8	1600 x (1±10%)
48	38.4	4.8	57.6	4500 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 (AgCe)	1 Form C	NO: 10A 277VAC NO/NC: 5A 277VAC NO: 5A 30VDC NO: 4FLA 4LRA 120VAC NC: 2FLA 4LRA 120VAC
	1 Form A	10A 277VAC 6A 30VDC
UL/CUL ($AgSnO_2$)	1 Form C	12A 277VAC 12A 28VDC
	1 Form A	12A 277VAC 12A 28VDC

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

	HF7FF /	012	-1H	T	S	F	(XXX)
Type							
Coil voltage	3, 5, 6, 9, 12, 18, 24, 48VDC						
Contact arrangement	**1H:** 1 Form A	**1Z:** 1 Form C					
Contact material	**T:** $AgSnO_2$ (10A)	**Nil:** AgCe (5A)					
Construction [1]	**S:** Plastic sealed	**Nil:** Flux proofed					
Insulation standard	**F:** Class F	**B:** Class B	**Nil:** Class A				
Customer special code							

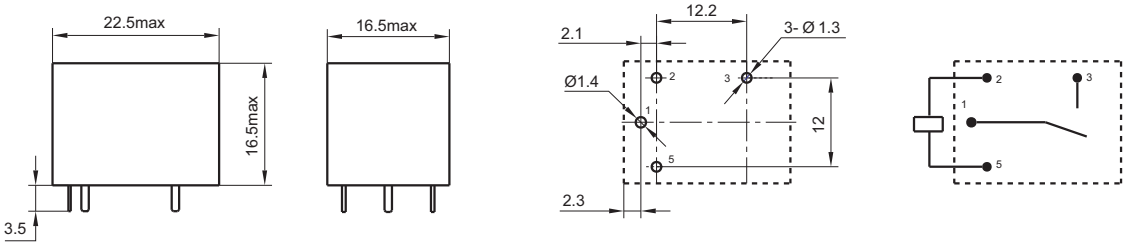
Notes: 1) Under the ambience with dangerous gas like H_2S, SO_2 or NO_2, plastic sealed type is recommended; Please test the relay in real applications.
If the ambience allows, flux proofed type is preferentially recommended.
2) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.
3) If the application belongs to inductive load, $AgSnO_2In_2O_3$ contact material is recommended. Please add a special suffix (325) to stand for this special contact material in the ordering information.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

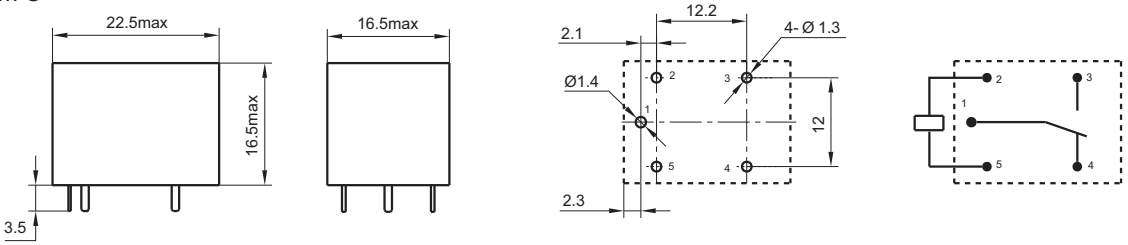
Unit: mm

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

1 Form A



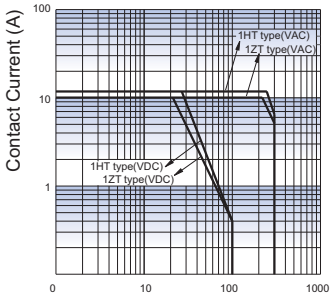
1 Form C



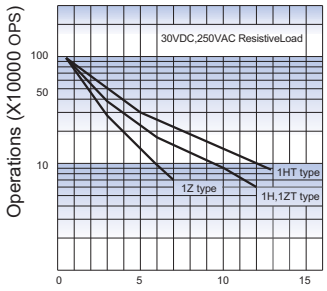
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
2) The tolerance without indicating for PCB layout is always ±0.1mm.

CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER



ENDURANCE CURVE



Test conditions:
NO, Resistive load, Flux proofed,
Room temp., 1s on 9s off.

COIL TEMPERATURE RISE