HF3FF SUBMINIATURE HIGH POWER RELAY

c UL us
File No.:E134517

File No.:40025218

File No.:R50148356

File No.:CQC08002027861

Features

- 15A switching capability
- 1 Form A and 1 Form C configurations
- Subminiature, standard PCB layout
- Plastic sealed and flux proofed types available
- Class B insulation system
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (19.0 x 15.2 x 15.5) mm

CONTACT DATA

Contact arrangement	1A	1C
Contact resistance	100mΩ max.(at 1A 6VDC)	
Contact material	$AgSnO_2$, AgCdO	
Contact rating (Res. load)	10A 277VAC/28VDC	
Max. switching voltage	277VAC / 30VDC	
Max. switching current	15A	10A
Max. switching power	2770VA / 210W	
Mechanical endurance	1 x 10^7OPS	
Electrical endurance 1)	1 x 10^5OPS (NO, at 7A 250VAC) 5 x 10^4OPS (NO, at 10A 250VAC)	

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		35% to 85% RH
Ambient temperature		-40˚C to 70˚C
Termination		PCB
Unit weight		Approx. 10g
Construction		Plastic sealed, Flux proofed

Notes: 1) For sealed type, the vent-hole cover should be excised.
2) The data shown above are initial values.
3) Please find coil temperature curve in the characteristic curves below.

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. Allowable Voltage VDC	Coil Resistance Ω
5	3.80	0.5	6.5	70 x (1±10%)
6	4.50	0.6	7.8	100 x (1±10%)
9	6.80	0.9	11.7	225 x (1±10%)
12	9.00	1.2	15.6	400 x (1±10%)
18	13.5	1.8	23.4	900 x (1±10%)
24	18.0	2.4	31.2	1600 x (1±10%)
48	36.0	4.8	62.4	4500 x (1±10%)
48 1)	36.0	4.8	62.4	6400 x (1±10%)

Notes: 1) There are 2 types for 48V--510mW and 360mW. The coil resistance for 510mW type is 4500ohm while for that for 360mW type is 6400ohm. If 360mW type is required, please add a special suffix (068) in the ordering information.

SAFETY APPROVAL RATINGS

UL/CUL	1 Form A	10A 277VAC / 28VDC TV-5 120VAC 15A 125VAC 12A 125VAC 1/2HP 125VAC
	1 Form C	10A 277VAC / 28VDC 10A 120VAC 1/2 HP 125/250VAC
VDE ($AgSnO_2$)	1 Form A	10A 250VAC 12A 125VAC
	1 Form C	5A 250VAC NO: 10A 250VAC NO: 12A 125VAC

Notes: Only some typical ratings are listed above. If more details are required, please contact us.

ORDERING INFORMATION

	HF3FF /	012	-1H	S	T	(XXX)
Type						
Coil voltage	5, 6, 9, 12, 18, 24, 48VDC					
Contact arrangement	**1H**:1 Form A	**1Z**:1 Form C				
Construction [1]	**S**: Plastic sealed	**Nil**: Flux proofed				
Contact material	**T**: $AgSnO_2$	**Nil**: AgCdO				
Customer special code						

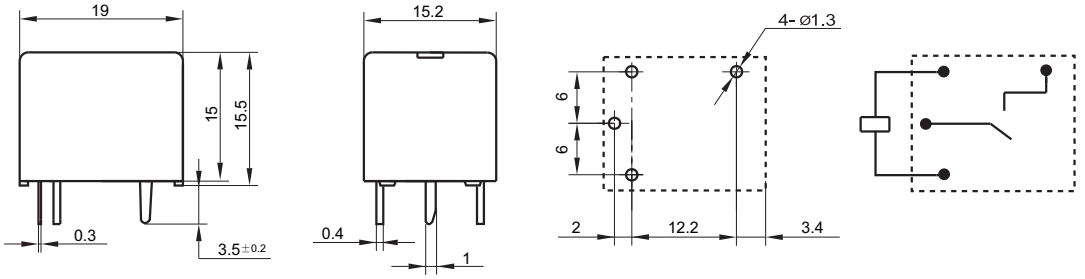
Notes: 1) Under the ambience with dangerous gas like H_2S, SO_2 or NO_2, plastic sealed type is recommended; Please test the relay in real applications.
If the ambience allows, flux proofed type is preferentially recommended.
If water cleaning is required after the relay is assembled on PCB, please contact us for suggestion about suitable parts.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

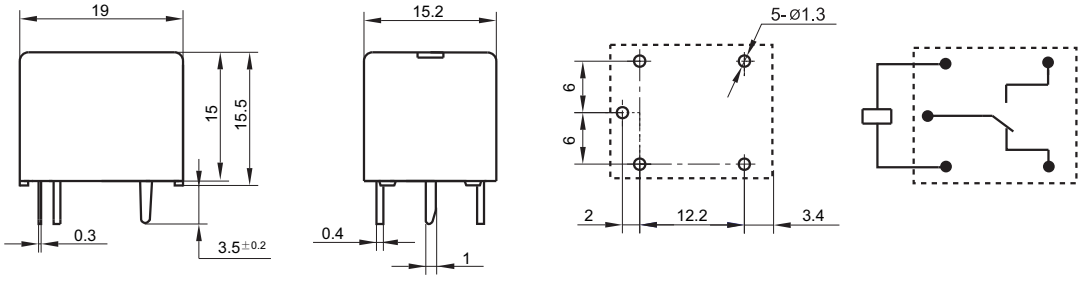
Unit: mm

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

1 Form A



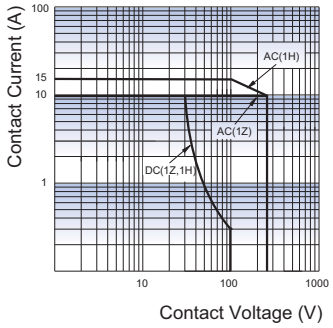
1 Form C



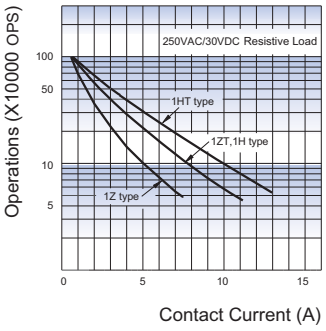
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
2) The tolerance without indicating for PCB layout is always ±0.1mm.

CHARACTERISTIC CURVES

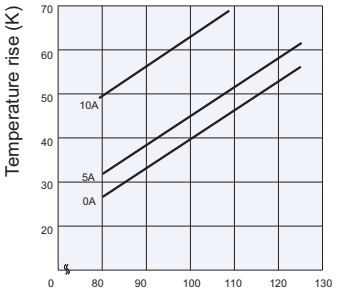
MAXIMUM SWITCHING POWER



ENDURANCE CURVE



COIL TEMPERATURE RISE



(Relay mounting distance should be less than 10mm.)