HF21FF SUBMINIATURE HIGH POWER RELAY

c UL us
File No.:E133481

Features

- 15A switching capability
- 1 Form A, 1 Form B and 1 Form C configurations
- Standard PCB layout
- Plastic sealed and flux proofed types available
- UL insulation system: Class F available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (20.2 x 16.5 x 20.2) mm

CONTACT DATA

Contact arrangement	1A, 1B	1C
Contact resistance	100mΩ max.(at 1A 6VDC)	
Contact material	$AgSnO_2$, AgCdO	
Contact rating	15A 120VAC	10A 120VAC/24VDC
Max. switching voltage	250VAC / 30VDC	
Max. switching current	15A	10A
Max. switching power	1800VA / 240W	
Mechanical endurance	1×10^7 OPS	
Electrical endurance	1×10^5 OPS	

COIL

Coil power	5VDC to 24VDC: Approx. 360mW; 48VDC: Approx. 530mW

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±15%)
48	36.0	4.8	62.4	4500 x (1±15%)

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. 13g
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.

SAFETY APPROVAL RATINGS

UL/CUL	1 Form C	10A 120VAC
	1 Form A	15A 120VAC TV-5 120VAC
	1 Form B	15A 120VAC 1800VA at 25°C, Ballast 6.5A 277VAC 1800VA at 25°C, Ballast
	1 Form B F type	8.3A 120VAC 1000VA at 90°C, Ballast 3.6A 277VAC 1000VA at 90°C, Ballast

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

ORDERING INFORMATION

	HF21FF /	012	-1H	S	T	F	(XXX)
Type							
Coil voltage	5, 6, 9, 12, 18, 24, 48VDC						
Contact arrangement	**1H**: 1 Form A **1D**: 1 Form B **1Z**: 1 Form C						
Construction 1)	**S**: Plastic sealed **Nil**: Flux proofed						
Contact material	**T**: $AgSnO_2$ **Nil**: AgCdO						
Insulation standard	**F**: Class F **Nil**: Class B						
Customer special code							

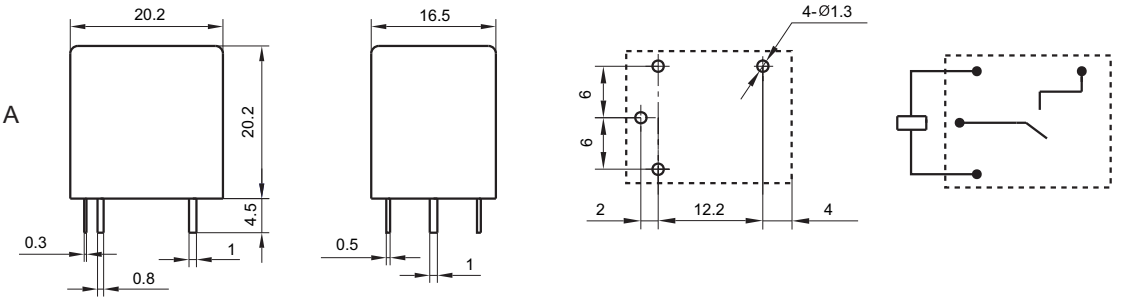
Notes: 1) Under the ambience with dangerous gas like H_2S, SO_2 or NO_2, plastic sealed type is recommended; Please test the relay in real applications.
If the ambience allows, flux proofed type is preferentially recommended.
If water cleaning is required after the relay is assembled on PCB, please contact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

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

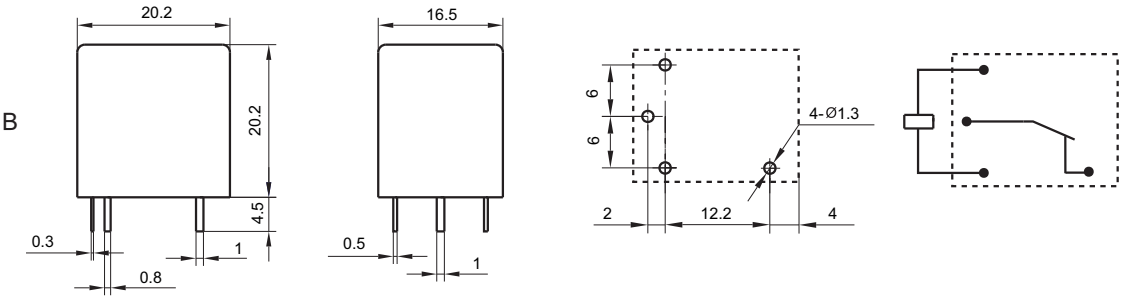
Unit: mm

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

1 Form A



1 Form B



OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

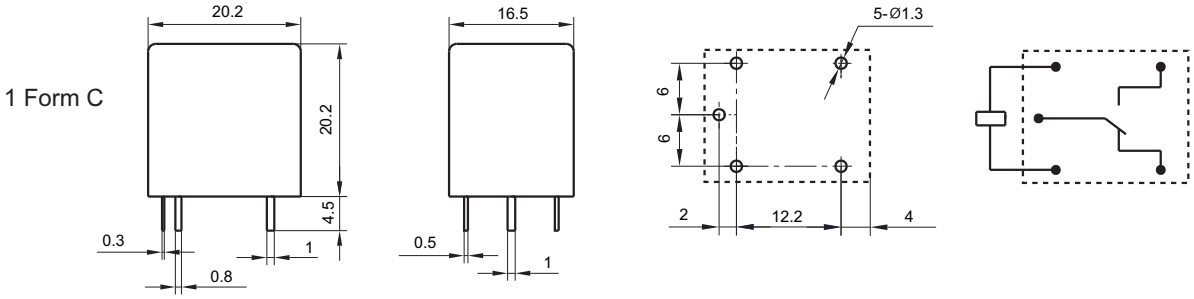
Unit: mm

Outline Dimensions

PCB Layout
(Bottom view)

Wiring Diagram
(Bottom view)

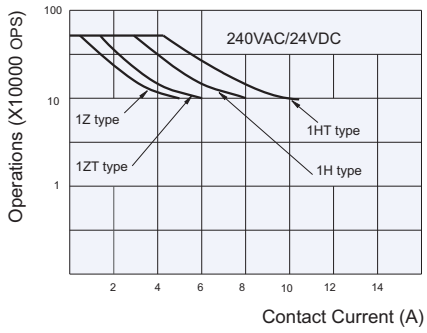
1 Form C



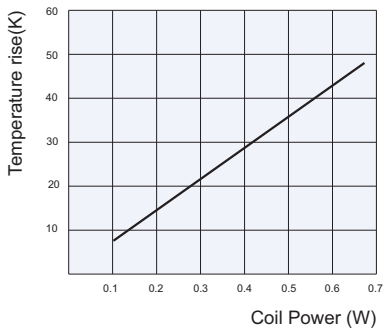
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
2) The tolerance without indicating for PCB layout is always ±0.1mm.

CHARACTERISTIC CURVES

ENDURANCE CURVE



COIL TEMPERATURE RISE



Disclaimer

This datasheet is for the customers' reference. All the specifications are 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.