

HF3FD

SUBMINIATURE HIGH POWER RELAY



File No.: E134517



File No.: 40014057



File No.: CQC09002034350



Features

- 15A switching capability
- Flammability class according to UL94, V-0
- Product in accordance to IEC 60335-1 available
- 1 Form A and 1 Form C configurations
- Subminiature, standard PCB layout
- Plastic sealed and flux proofed types available
- UL insulation system: Class F available
- 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 , AgNi	
Contact rating (Res. load)	10A 250VAC 10A 28VDC	NO: 10A 250VAC/28VDC NO/NC: 7A/3A 250VAC NO/NC: 5A/5A 250VAC
Max. switching voltage	277VAC/30VDC	
Max. switching current	15A	10A
Max. switching power	2770VA / 300W	
Mechanical endurance	1 x 10 ⁷ OPS	
Electrical endurance ¹⁾	1 x 10 ⁵ OPS (NO, at 7A 250VAC) 5 x 10 ⁴ OPS (NO, at 10A 250VAC)	

CHARACTERISTICS		
Insulation resistance		100MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	2000VAC
	Between open contacts	750VAC 1min
Operate time (at nomi. volt.)		10ms max.
Release time (at nomi. 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 105°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.
4) UL insulation system: Class F, Class B.

COIL	
Coil power	Approx. 360mW

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	
3	2.25	0.3	3.9	25 x (1±10%)	
5	3.75	0.5	6.5	70 x (1±10%)	
6	4.50	0.6	7.8	100 x (1±10%)	
9	6.75	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	6400 x (1±10%)	

SAFETY APPROVAL RATINGS			
UL/ CUL	AgSnO ₂	1 Form A	10A 250VAC at 85°C
		1 Form C	NO/NC: 5A/5A 250VAC at 85°C NO: 10A 250VAC at 85°C NO: 1/2HP 125VAC NO: TV-5 120VAC
	AgNi	1 Form A	10A 250VAC at 85°C 6A 250VAC at 105°C
		1 Form C	NO: 10A 250VAC at 85°C NO: 6A 250VAC at 105°C NC: 6A 250VAC at 85°C NO/NC: 7A/3A 250VAC at 85°C NO: 1/2HP 125VAC
VDE	AgSnO ₂	1 Form A	10A 250VAC at 85°C
		1 Form C	NO/NC: 5A/5A 250VAC at 85°C NO: 10A 250VAC at 85°C
	AgNi	1 Form A	10A 250VAC at 85°C 6A 250VAC at 105°C
		1 Form C	NO: 10A 250VAC at 85°C NO: 6A 250VAC at 105°C NC: 6A 250VAC at 85°C NO/NC: 7A/3A 250VAC at 85°C

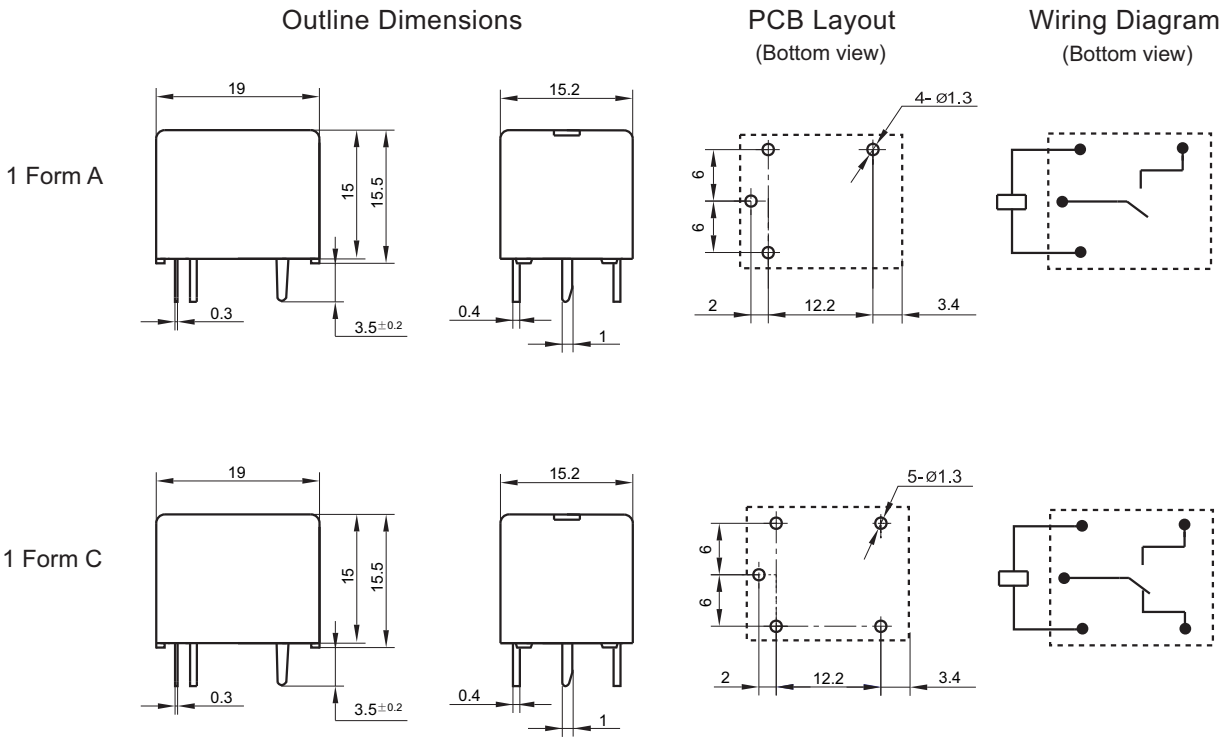
Notes: Only some typical ratings are listed above. If more details are required, please contact us.

ORDERING INFORMATION			
HF3FD / 012 -H S T F (XXX)			
Type			
Coil voltage	3, 5, 6, 9, 12, 18, 24, 48VDC		
Contact arrangement	H: 1 Form A	Z: 1 Form C	
Construction ¹⁾	S: Plastic sealed	Nil: Flux proofed	
Contact material	T: AgSnO ₂	3: AgNi	
Insulation standard	F: Class F	Nil: Class B	
Customer special code	e.g. (335) stands for product in accordance to IEC 60335-1 (GWT)		

Notes: 1) We recommend flux proofed types for a clean environment (free from contaminations like H₂S, SO₂, NO₂, dust, etc.). We suggest to choose plastic sealed types and validate it in real application for an unclean environment (with contaminations like H₂S, SO₂, NO₂, dust, etc).
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

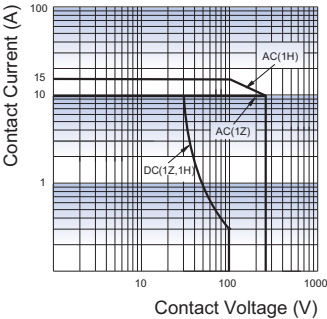
Unit: mm



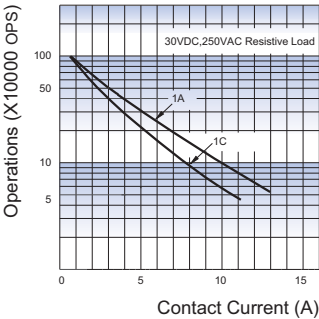
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
2) The tolerance without indicating for PCB layout is always ±0.1mm.

CHARACTERISTIC CURVES

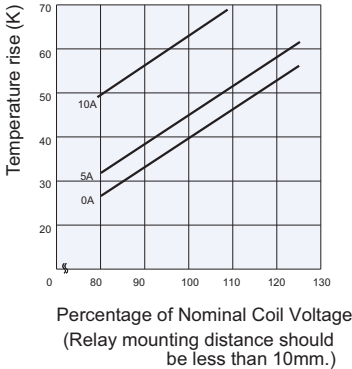
MAXIMUM SWITCHING POWER



ENDURANCE CURVE



COIL TEMPERATURE RISE



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.

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