HF3FA/HF3FA-T SUBMINIATURE HIGH POWER RELAY

c UL us
File No.: E134517

File No.: 40023708

File No.:CQC12002076529

Features

- 15A 125VAC;10A 250VAC switching capability
- TV8 @ 120Vac（for version 590）
- Flammability class according to UL94, V-0
- Product in accordance to IEC 60335-1 available
- Subminiature, standard PCB layout
- Plastic sealed and Flux proofed types available
- UL insulation system: Class F

RoHS compliant

CONTACT DATA

Contact arrangement	1A	1C	
		NO	NC
Contact resistance[1]	100mΩ max.(at 1A 6VDC)		
Contact material	$AgSnO_2$;AgNi;AgCdO		
Contact rating (Res. load)	10A 277VAC 10A 28VDC	10A 277VAC[2] 10A 28VDC[2]	5A 250VAC
Max. switching voltage	277VAC/28VDC		250VAC
Max. switching current	15A	10A	5A
Max. switching power	2770VA /280W		
Mechanical endurance	1×10^7OPS		
Electrical endurance[3]	H type:1×10^5OPS (10A 250VAC Resistive load, Room temp., 1s on 9s off) Z type:5×10^4OPS (NO: 5A/NC: 5A 250VAC, Resistive load, Room temp., 3s on 3s off)		

Notes: 1) The data shown above are initial values.
2) Applicable when NC is not energized with load.
3) For plastic sealed type, the venting-hole should be opened in electrical endurance test.

CHARACTERISTICS

Insulation resistance		100MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	2500VAC 1min
	Between open contacts	750VAC 1min
Operate time (at rated. volt.)		10ms 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 oprating temperature		-40˚C to 105˚C
Termination		PCB
Unit weight		Approx. 7.2 g
Construction		Plastic sealed, Flux proofed

Notes: 1) The data shown above are initial values.
2) For working environment temperature of 85˚C,please contact with Hongfa.

COIL

Coil power	Approx. 360mW

COIL DATA at 23˚C

Nominal Voltage VDC	Pick-up Voltage VDC max.[1]	Drop-out Voltage VDC min.[1]	Max. Voltage VDC *[2]	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%)
15	11.25	1.5	19.5	625 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%)

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.

SAFETY APPROVAL RATINGS

UL/CUL	HF3FA	1 Form A	10A 250VAC 85˚C 6A 250VAC 105˚C 15A 125VAC TV-8 120VAC (suffix 590) TV-5 120VAC
		1 Form C	NO/NC: 5A/5A 277VAC 85˚C NO: TV-5 120VAC NO: TV-8 120VAC (suffix 590)
	HF3FA-T	1 Form A	10A 250VAC 105˚C 12A 250VAC 105˚C TV-5 120VAC
		1 Form C	NC: 6A 250VAC 105˚C
VDE	HF3FA	1 Form A	6A 250VAC 105˚C 10A 250VAC 85˚C
		1 Form C	NO: 10A 250VAC 85˚C NO: 6A 250VAC 105˚C NO/NC: 5A/5A 250VAC 85˚C
	HF3FA-T	1 Form A	10A 250VAC 105˚C
		1 Form C	NO: 10A 250VAC 105˚C NC: 6A 250VAC 105˚C

Notes: 1) All values unspecified are at room temperature.
2) Only typical loads are listed above. Other load specifications can be available upon request.
3) For sealed type, the vent-hole cover should be excised.

ORDERING INFORMATION

	HF3FA /	012	-H	S	T	F	(XXX)
Type	HF3FA:85°C HF3FA-T:105°C						
Coil voltage	3,5,6,9,12,15,18,24,48VDC						
Contact arrangement		**H**: 1 Form A	**Z**: 1 Form C				
Construction 1)2)			**S**: Plastic sealed	**Nil**: Flux proofed			
Contact material					**T**: $AgSnO_2$	**3**: AgNi	**Nil**: AgCdO
Insulation system						**F**: Class F	
Special code3)							**XXX:** Customer special requirement **Nil:** Standard

Notes: 1) We recommend flux proofed types for a clean environment (free from contaminations like H_2S, SO_2, NO_2, dust, etc.). We suggest to choose plastic sealed types and validate it in real application for an unclean environment (with contaminations like H_2S, SO_2, NO_2, dust, etc).

2) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.

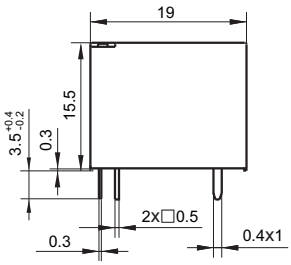
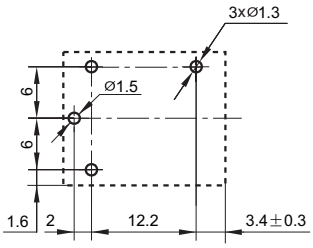
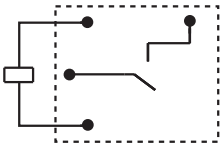
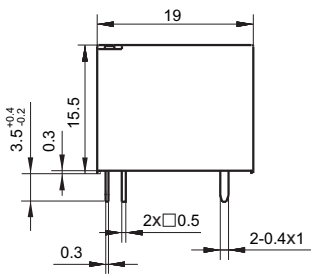
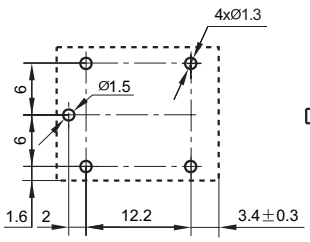
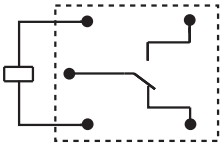
3) The customer special requirement express as special code after evaluating by Hongfa. e.g.(335) stands for product in accordance to IEC 60335-1 (GWT)；e.g.(stuffix 590) for product in accordance to TV-8 load.

4) For products that should meet the explosion-proof requirements of "IEC 60079 series",please note [Ex] after the specification while placing orders.Not all products have explosion-proof certification,so please contact us if necessary, in order to select the suitable products.

5) Two packing methods available: paper box package, tube package,Standard tube packing length is 420mm. Any special requirement needed, please contact us for more details.

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			

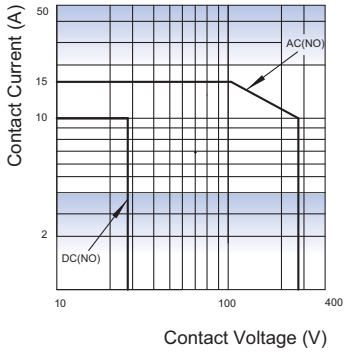
Remark:1) The pin dimension of the product outline drawing is the size before tinning (it will become larger after tinning), and the mounting hole size is the recommended design size of the PCB board hole. The specific PCB board hole design size can be mapped and adjusted according to the actual product.

2) 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.

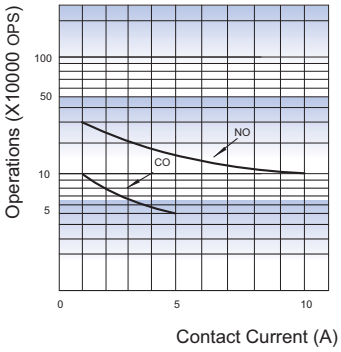
3) The tolerance without indicating for PCB layout is always ±0.1mm.

CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER



ENDURANCE CURVE



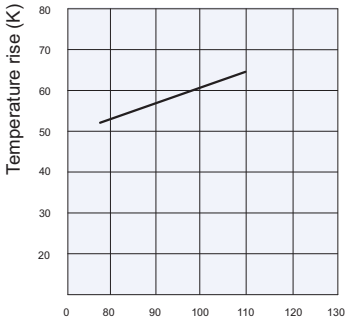
Test conditions:

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

CO:Resistive load, Flux proofed,
Room temp., 3s on 3s off

Notes: For plastic sealed type, the venting-hole should be opened in electrical endurance test.

COIL TEMPERATURE RISE



Test conditions: at 85℃, 6A
Mounting distance: 10mm