HF3FA SUBMINIATURE HIGH POWER RELAY

c UL us
File No.: E134517

VDE
File No.: 40023708

CQC
File No.:CQC12002076529

Features

- 15A switching capability
- Flammability class according to UL94, V-0
- CTI 250 available
- Product in accordance to IEC 60335-1 available
- 1 Form A and 1 Form C configurations
- Subminiature, standard PCB layout
- UL insulation system: Class F
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (19.0 x 15.2 x 15.5) mm

CONTACT DATA

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

CHARACTERISTICS

Insulation resistance		100MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	2500VAC 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 85˚C
Termination		PCB
Unit weight		Approx. 7.0g
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. 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%)
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	54.4	6400 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	1 Form A	10A 250VAC at 85˚C 8A 277VAC at 85˚C 6A 250VAC at 105˚C 15A 125VAC 1/2HP 125VAC/250VAC at 85˚C TV-5 125VAC/120VAC
	1 Form C	NO/NC: 5A/5A 277VAC at 85˚C
VDE	1 Form A	6A 250VAC at 105˚C 10A 250VAC at 85˚C
	1 Form C	NO: 10A 250VAC at 85˚C NO: 6A 250VAC at 105˚C NO/NC: 5A/5A 250VAC at 85˚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.

ORDERING INFORMATION

	HF3FA /	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**: $AgSnO_2$						
Insulation system	**F**: Class F						
Customer special code	e.g. (335) stands for product in accordance to IEC 60335-1 (GWT)						

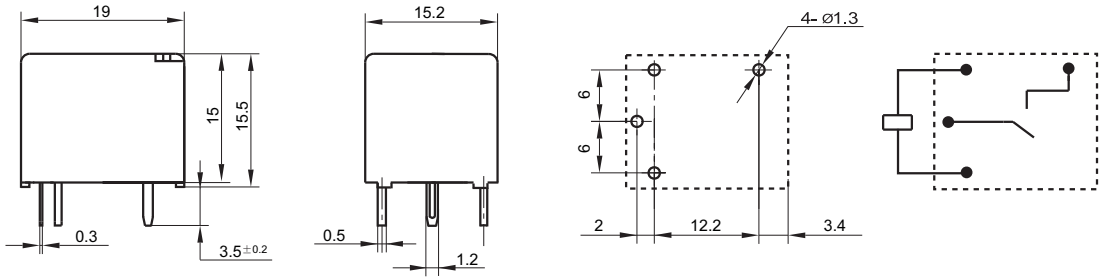
Notes: 1) We recommend flux proofed types for a clean environment (free from contaminations like H_2S, SO_2, NO_2, dust, etc.).
2) We suggest to choose plastic sealed types and validate it in real application for an unclean environment (with contaminations like H_2S, SO_2, NO_2, dust, etc).
3) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

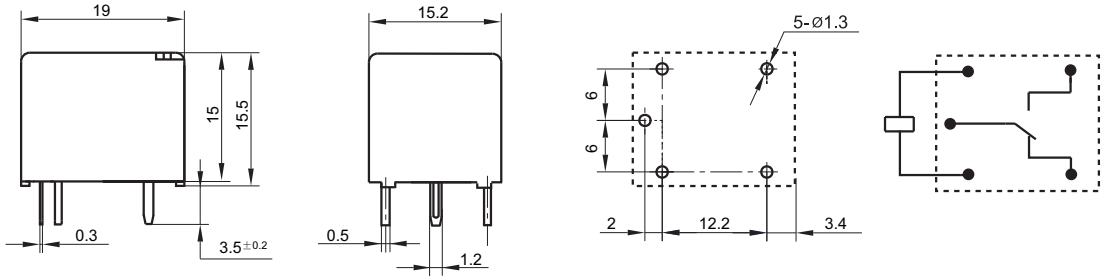
Unit: mm

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

1 Form A



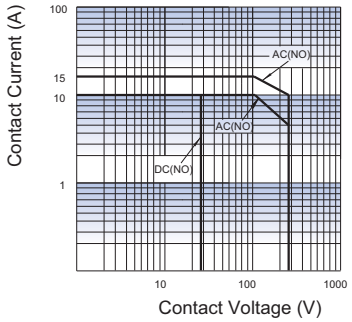
1 Form C



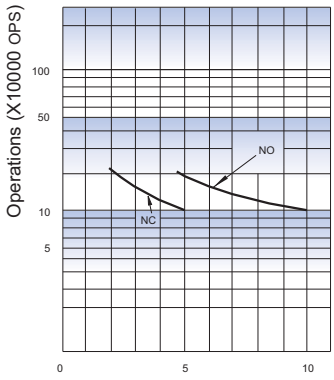
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
2) The tolerance without indicating for PCB layout is always ±0.1mm.

CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER



ENDURANCE CURVE

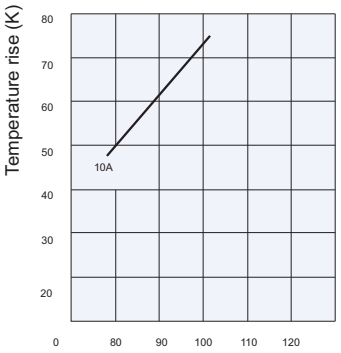


Test conditions:

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

NC:Resistive load, Flux proofed, Room temp., 5s on 5s off

COIL TEMPERATURE RISE



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