HF3FA-M SUBMINIATURE HIGH POWER RELAY

Features

- 15A switching capability
- Subminiature, standard PCB layout
- 1 Form A and 1 Form C configurations
- Plastic sealed and Flux proofed types available

CONTACT DATA

Contact arrangement		1A	1C	
			NO	NC
Voltage drop[1)]		Typ.: 20mV(at 10A) Max.: 250mV(at 10A)		
Max. continuous current[2)]		10A	10A	5A
Max. switching current[3)]		15A	15A	5A
Max. switching voltage		30VDC		
Mechanical endurance		1 x 10^7ops		
Insulation resistance		100MΩ (500VDC)		
Dielectric strength[4)]	Between coil & contacts	2000VAC 1min		
	Between open contacts	750VAC 1min		
Operation time (at rated. volt.)		10ms max.		
Release time (at rated. volt.)[5)]		Typ.: 4ms Max.: 10ms		
Humidity		5% to 85% RH		
Ambient temperature		-40°C to 85°C		
Shock resistance	Functional	98m/s²		
	Destructive	980m/s²		
Vibration resistance		10Hz to 55Hz 1.5mm DA		
Termination		PCB		
Unit weight		Approx.7g		
Construction		Plastic sealed, Flux proofed		

Notes: 1)The original value of it also can be described as the maximum value of 100mΩ(1A 6VDC)of contact resistance.
2)Normally open contacts, we got that result under the condition of the 100% rated voltage applied on the coil.
3)Normally open contacts, we got that result under the voltage of 14VDC and the temperature of 23*(100 operating times).
4)The leak current less than 1mA within 1 munite.
5)It tests without coil suppression circuit, and the rated voltage step to 0 VDC.

COIL DATA

at 23°C

HF3FA-M

Nominal Voltage VDC	Pick-up Voltage VDC max.[1)]	Drop-out Voltage VDC min.[1)]	Max. Voltage VDC *[2)]	Coil Resistance Ω	Relay power consumption W
9	6.75	0.90	11.7	180 x (1±10%)	0.45
12	9.00	1.20	15.6	320 x (1±10%)	
24	18.0	2.40	31.2	1280 x (1±10%)	

HF3FA-M1

Nominal Voltage VDC	Pick-up Voltage VDC max.[1)]	Drop-out Voltage VDC min.[1)]	Max. Voltage VDC *[2)]	Coil Resistance	Relay power consumption W
9	5.85	0.65	11.3	126 x (1±10%)	0.64
12	7.80	0.90	15.0	225 x (1±10%)	
24	15.6	1.80	30.0	900 x (1±10%)	

HF3FA-M2

Nominal Voltage VDC	Pick-up Voltage VDC max.[1)]	Drop-out Voltage VDC min.[1)]	Max. Voltage VDC *[2)]	Coil Resistance Ω	Relay power consumption W
9	5.15	0.60	10.8	100 x (1±10%)	0.80
12	6.80	0.80	14.4	180 x (1±10%)	
24	13.7	1.60	28.8	720 x (1±10%)	

Notes: 1) The data shown above are initial values.
2) When no load current on contacts, coil resistance at the min. value, the max. continuous operate voltage allowed on relay coil.

CONTACT DATA

Load voltage	Load type		Load current(A)			On/Off ratio		Electrical endurance OPS	Contact material
			1Z		1H	ON s	OFF s		
			NO	NC	NO				
14VDC(1)	Resistive	Make	15	5	15	3	3	1 x 10^5ops	$AgSnO_2$ AgNi
		Break	15	5	15	3	3		

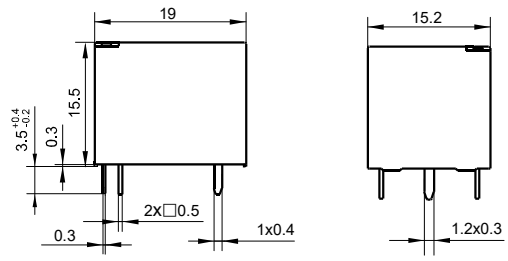
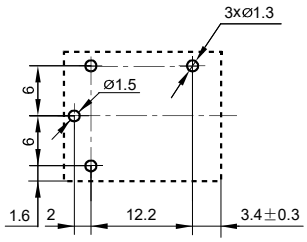
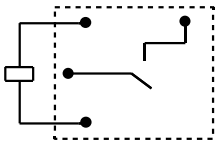
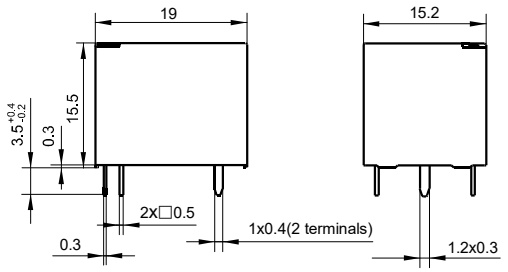
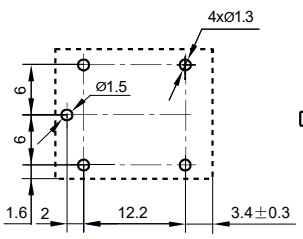
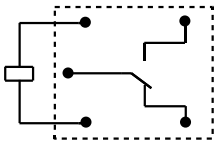
ORDERING INFORMATION

	HF3FA-M/	12	-Z	S	T	F	(XXX)
Type	HF3FA-M:0.45W HF3FA-M1:0.64W HF3FA-M2:0.8W						
Coil voltage		9, 12, 24VDC					
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		
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).

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

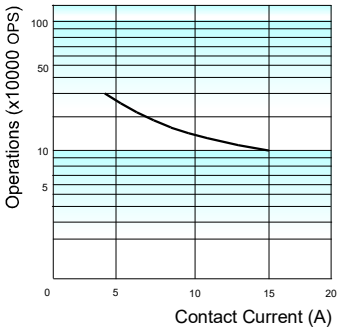
Unit: mm

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

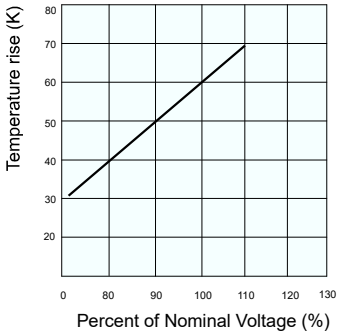
CHARACTERISTIC CURVES

ENDURANCE CURVE



Testing conditions:
Standard: flux proofed, resistive load,
14VDC, at room temp. 1s on 9s off.

COIL TEMPERATURE RISE



Testing conditions:
Standard: 10A at 85˚C.
Mounting distance: 10mm