

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 ⁷ ops		
Insulation resistance	100MΩ (500VDC)		
Dielectric strength ⁽⁴⁾	Between coil & contacts	2000VAC 1min	
	Between open contacts	750VAC 1min	
Operation time (at rated. volt.)	≤10ms		
Release time (at rated. volt.) ⁽⁵⁾	Typ.: 4ms Max. : 10ms		
Humidity	5% ~ 85% RH		
Ambient temperature	-40°C ~ 85°C		
Shock resistance	Functional	98m/s ²	
	Destructive	980m/s ²	
Vibration resistance	10Hz ~ 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 Ω	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 ⁵ ops	AgSnO ₂ AgNi
		Break	15	5	15	3	3		



HONGFA RELAY

ISO9001、ISO/TS16949、ISO14001、OHSAS18001、IECQ QC 080000 认证企业

2019 Rev. 1.00

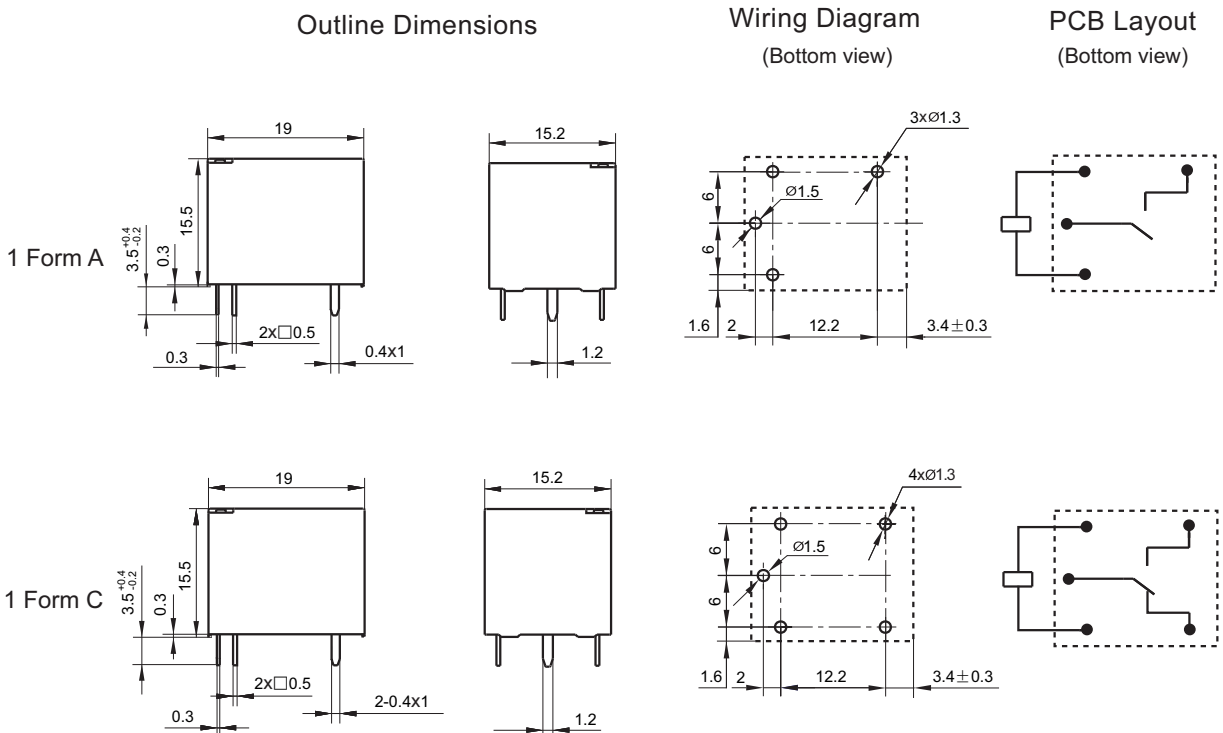
ORDERING INFORMATION

	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 code ³⁾	XXX: Customer special requirement			Nil: Standard			

- 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.).
 - 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

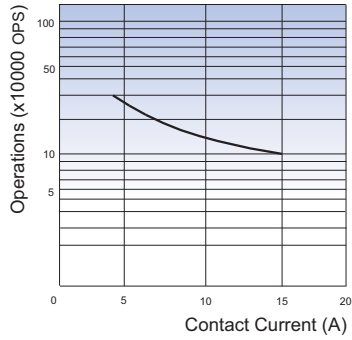
Unit: mm



- 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.

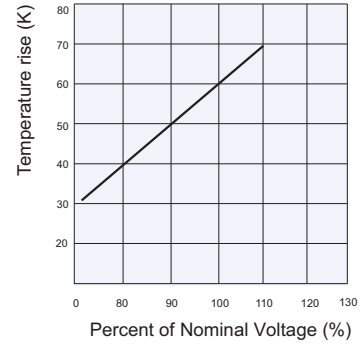
CHARACTERISTIC CURVES

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

Disclaimer

The specification is for reference only. See to "Terminology and Guidelines" for more information. Specifications 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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