

HF158F-V 1 pole

MINIATURE HIGH POWER RELAY



File No.: 40032833



File No.:E134517



File No.:CQC17002176312



Features

- 10A 300VDC high-voltage switching capability
- 5kV dielectric strength(between coil and contacts)
- Creepage distance:10mm
- Meet Reinforce insulation
- Product in accordance to IEC60335-1 available
- Class F insulation system

CONTACT DATA

Contact arrangement	1A
Contact resistance ¹⁾	100mΩ max.(at 1A 6VDC)
Contact material	AgSnO ₂
Contact rating	10A 300VDC 12A 277VAC
Max. switching voltage	420VDC / 300VAC
Max. switching current	16A
Max. switching power	3000W / 3324VA
Mechanical endurance	2 x 10 ⁶ ops
Electrical endurance	1 x 10 ⁴ ops (10A 300VDC, Resistive load, at 85 °C, 1s on 9s off) 1 x 10 ⁴ ops (12A 277VAC, Resistive load, at 85 °C, 1s on 9s off)

Notes: 1) The data shown above are initial values.

CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	5000VAC 1min
	Between open contacts	1500VAC 1min
Surge voltage (between coil & contacts)	10kV (1.2 / 50μs)	
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 temperature	-40°C to 85°C	
Termination	PCB	
Unit weight	Approx. 15g	
Construction	Flux proofed	

Notes: 1) The data shown above are initial values.

2) * Index is not that of relay length direction.

COIL

Coil power	Approx. 400mW
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COIL DATA

at 23°C

Coil Code	Nominal Voltage VDC	Pick-up Voltage VDC max. ¹⁾	Drop-out Voltage VDC min. ¹⁾	Coil Resistance Ω
5	5	≤3.75	≥0.5	62 x (1±10%)
6	6	≤4.50	≥0.6	90 x (1±10%)
9	9	≤6.75	≥0.9	200 x (1±10%)
12	12	≤9.00	≥1.2	360 x (1±10%)
18	18	≤13.50	≥1.8	810 x (1±10%)
24	24	≤18.00	≥2.4	1440 x (1±10%)

Notes: 1) The data shown above are initial values.

SAFETY APPROVAL RATINGS

UL/CUL/VDE	4A 420VDC at 85°C
	10A 300VDC at 85°C
	16A 180VDC at 85°C
	12A 277VAC at 85°C
	13A 180VAC at 85°C
	14.5A 160VAC at 85°C

Notes: 1) Only typical loads are listed above. Other load specifications can be available upon request.



HONGFA RELAY

ISO9001, ISO/TS16949, ISO14001, OHSAS18001, IECQ QC 080000 CERTIFIED

2019 Rev. 1.00

ORDERING INFORMATION

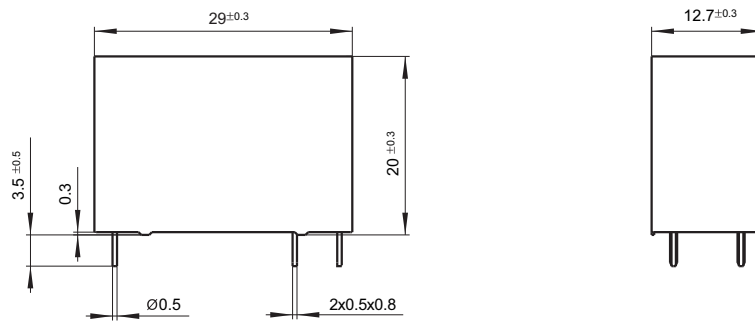
Type	HF158F-V /	12	-H	2	T	(XXX)
Coil voltage	5, 6, 9, 12, 18, 24VDC					
Contact arrangement	H: 1 Form A					
Version	2: 5.0mm 1 pole					
Contact material	T: AgSnO ₂					
Special code ³⁾	XXX: Customer special requirement		Nil: Standard			

- Notes:** 1) We recommend flux proofed types for a clean environment (free from contaminations like H₂S, SO₂, NO₂, dust, etc.);
 2) Storage, transportation and installation can not have a strong magnetic field around;
 3) The customer special requirement express as special code after evaluating by Hongfa;
 4) Product contains magnet, so there will be mutual exclusion or attraction between products. During the installation, please consider the installation mounting distance.

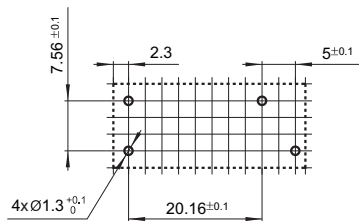
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Outline Dimensions



PCB Layout (Bottom view)



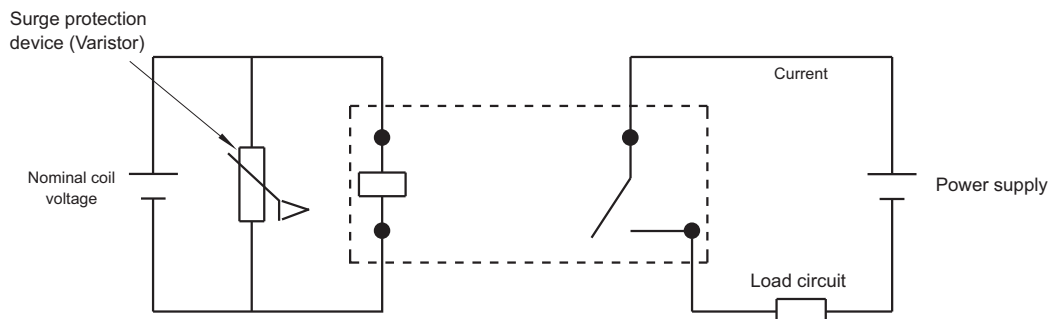
Wiring Diagram (Bottom view)



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

CIRCUIT

Load circuit and input circuit (Bottom view)



Notes:

- 1) The output contact terminals and the input coil terminal are no polarity to distinguish.
- 2) Please use varistor as surge protection device. If varistor will not be used, the electrical life need to be derated.
- 3) Varistor surge protection device should be connect parallel to coils. Suitable voltage of varistor is 3 times the coil voltage.
- 4) Avoid using relay under the strong magnetic field, which will decrease the blast function and magnetic, thus cause the arc can not be interrupted and relay damaged.
- 5) To avoid using relays under strong magnetic field because it will change the parameters of relay such as pull-in and drop-out voltage.
- 6) There is magnetic element inside, the magnetism would make the relays stick to each other, in order to avoid the sticking that may lead to deformation or parameter change inside the relay, gap is needed between the relay units.
- 7) There is magnetic element inside, the magnetism would make the relays repel each other. When more than one relay need in board layout, there should be gap between each units, in order to avoid the repel and soldering issue.

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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