HF178F-T MINIATURE HIGH POWER RELAY

File No:E133481

File No:R50440273

File No.:CQC19002230674

Features

- High Temperature:105˚C
- 4kV dielectric strength(between coil and contacts,for type 1 PCB layout)
- Creepage distance:＞4.5mm
  Clearance distance:＞5mm(for type 1PCB layout)
- Flux proofed type

RoHS compliant

CONTACT DATA

Contact arrangement	1A
Contact resistance	10mΩ max.(20A 6VDC)
Contact material	$AgSnO_2$
Contact rating(Res. load)	32A 277VAC
Max. switching voltage	277VAC
Max. switching current	32A
Max. switching power	8864VA
Mechanical endurance	3×10^5 OPS
Electrical endurance	1×10^4OPS (25A 250VAC, Resistive load, at 105˚C, 1s on 9s off)

CHARACTERISTICS

Insulation resistance		1000MΩ (500VDC)
Dielectric strength	Between open contacts	1000VAC 1min
	Between coil & contacts	4000VAC 1min(type1) 2500VAC 1min(type2)
Operate time (at nomi. volt.)		15ms max.
Release time (at nomi. volt.)		10ms 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 105˚C
Termination		PCB
Unit weight		Approx.16g
Construction		Flux proofed

Notes: The data shown above are initial values.

COIL

Coil power	Standard type:Approx.1.67W Sensitive type:Approx.1.2W
Holding voltage	30% to 80%U_N(at 23˚C) 40% to 45%U_N(at 105˚C)

Notes:1)The coil holding voltage is the voltage value after the rated voltage is applied to the coil for 200ms.
2)To apply higher holding voltage than specified during long time is forbidden to prevent overheating.
3)Apply 100% to 120% of the rated coil voltage for 200ms in order for the relay to operate correctly.

COIL DATA at 23˚C

Standard type：

Nominal Voltage VDC	Pick-up Voltage VDC max.1)	Drop-out Voltage VDC min.1)	Max. Voltage VDC 2)	Coil Resistance Ω
12	9.6	0.6	13.2	86 x (1±10%)
24	19.2	1.2	26.4	345 x (1±10%)
48	38.4	2.4	52.8	1380 x (1±10%)

Sensitive type：

Nominal Voltage VDC	Pick-up Voltage VDC max.1)	Drop-out Voltage VDC min.1)	Max. Voltage VDC 2)	Coil Resistance Ω
12	9.6	0.6	13.2	120 x (1±10%)
24	19.2	1.2	26.4	480 x (1±10%)
48	38.4	2.4	52.8	1920 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	32A 277VAC 85˚C 35A 277VAC 70˚C 25A 277VAC 105˚C Making 5A,Carrying 32A，Breaking 5A,277VAC 105˚C Sensitive type: Making 5A,Carrying 32A，Breaking 5A,277VAC 105˚C
TÜV	32A 277VAC 85˚C 35A 277VAC 70˚C 25A 277VAC 105˚C Making5A,Carrying 32A，Breaking 5A,277VAC 105˚C Sensitive type: Making5A,Carrying 32A，Breaking 5A,277VAC 105˚C

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

ORDERING INFORMATION

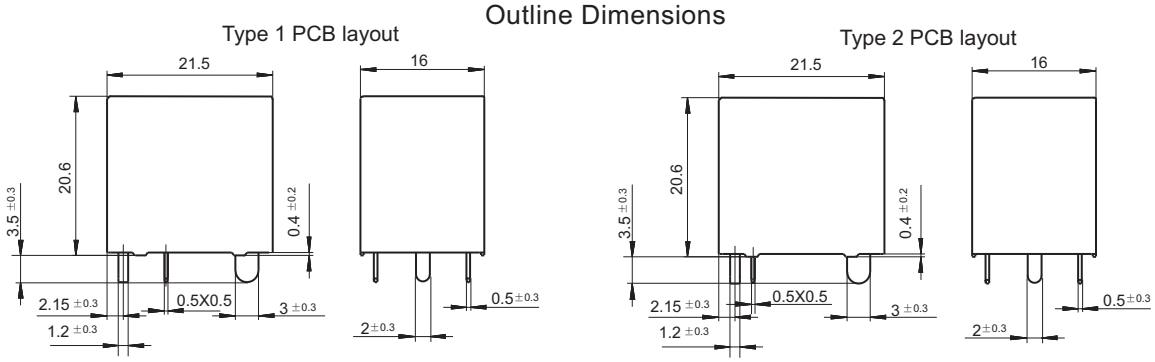
	HF178F-T/	12	-H	1	L	T	F	(XXX)
Type								
Coil voltage	12, 24, 48VDC							
Contact arrangement	**H:**1 Form A							
Construction	**1:**Type 1 PCB layout **2:**Type 2 PCB layout							
Coil power	**L:**Sensitive type(1.2W) **Nil:** Standard(1.67W)							
Contact material	**T:** $AgSnO_2$							
Insulation standard	**F:** Class F							
Special code[1)]	**XXX:** Customer special requirement **Nil:** Standard							

Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

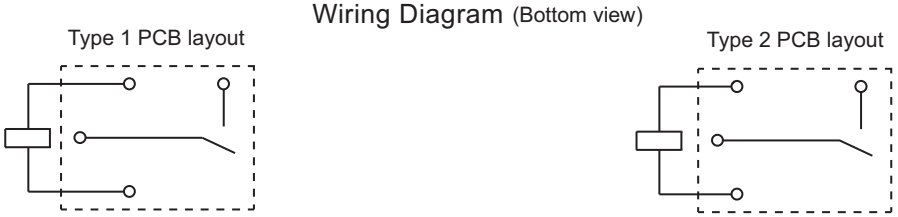
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

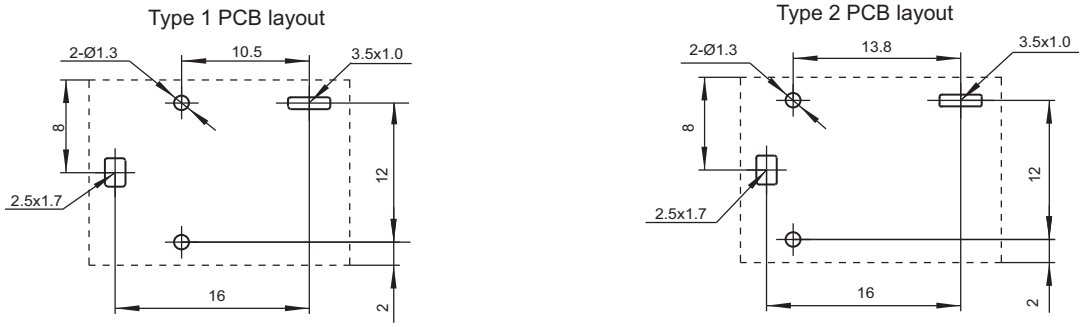
Outline Dimensions



Wiring Diagram (Bottom view)



PCB Layout (Bottom view)



Notes: 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.

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.