HF163F-L16 SUBMINIATURE INTERMEDIATE POWER LATCHING RELAY

File No.:E133481

File NO.:40051265

File No.: B0532860028

File No.: CQC19002212710

Features

- Low height 15.7mm
- Dielectric strength(between contact and coil): 5,000 V
- TV-8 rating certified
- 16A switching capacity
- Max. switching capacity 20A
- Inrush current capacity 192A/1.2ms
- For LED load

RoHS compliant

CONTACT DATA

Contact arrangement	1A
Contact resistance 1)	30mΩ max. (at 1A 6VDC)
Contact material	$AgSnO_2$
Contact rating	16A 277VAC,1 x 10^5(Resistive, at 85°C) 20A 250VAC,5 x 10^4(Resistive, at 85°C) 600W 120VAC,2.5 x10^4 (Incandescent lamp,at 50°C) 8A 277VAC,6 x10^3 (Standard ballast,at 50°C) 5A 120VAC,6x10^3 (Electronic ballast,at 40°C) 8A 240VAC,2.5x10^4(TV-8,40°C)
Max. switching voltage	277VAC
Max. switching current	20A
Max. switching power	5000VA
Mechanical endurance	1 x 10^6ops
Electrical endurance	See “contact rating”

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	1000VAC 1min
Set time		15ms max.
Reset time		15ms 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	coil termination	PCB
	load termination	PCB
Unit weight		Approx. 7g
Construction		Plastic sealed, Flux proofed

Notes: The data shown above are initial values.

COIL

Rated power	Standard type	Single coil latching: Approx. 0.4W Double coils latching: Approx. 0.6W
	Sensitive type	Single coil latching: Approx. 0.2W Double coils latching: Approx. 0.4W

COIL DATA at 23°C

Single coil latching

Nominal Voltage VDC	Set / Reset Voltage VDC 1)2) max.	Pulse Duration ms min.	Coil Resistance x (1±10%) Ω	
			Sensitive type	Standard type
3	2.4	50	45	22.5
5	4.0	50	125	62.5
6	4.8	50	180	90
9	7.2	50	405	202.5
12	9.6	50	720	360
24	19.2	50	2880	1440

Double coils latching

Nominal Voltage VDC	Set / Reset Voltage VDC 1)2) max.	Pulse Duration ms min.	Coil Resistance x (1±10%) Ω	
			Sensitive type	Standard type
3	2.4	50	22.5+22.5	15+15
5	4.0	50	62.5+62.5	42+42
6	4.8	50	90+90	60+60
9	7.2	50	202.5+202.5	135+135
12	9.6	50	360+360	240+240
24	19.2	50	1440+1440	960+960

Notes:1) The data shown above are initial values.
2) The above set voltage, reset voltage are the test value for relay without load. Please use 1~1.5 times of rated voltage to drive the relay for your application.

SAFETY APPROVAL RATINGS

UL/CUL	Resistive:16A 277VAC 85°C(Flux proofed) Resistive:20A 250VAC 85°C(Flux proofed) Resistive:5A 30VDC 85°C(Flux proofed) Incandescent lamp:600W 120VAC 50°C(Flux proofed) Standard ballast:8A 277VAC 50°C(Flux proofed) Electronic ballast:5A 120VAC 40°C(Flux proofed) TV-8:8A 240VAC 40°C(Flux proofed)
TUV	Resistive:16A 277VAC 85°C(Flux proofed) Resistive:20A 250VAC 85°C(Flux proofed) Resistive:5A 30VDC 85°C(Flux proofed)
VDE	Resistive:16A 277VAC 85°C(Flux proofed) Resistive:20A 250VAC 70°C(Flux proofed) Resistive:5A 30VDC 85°C(Flux proofed)

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

ORDERING INFORMATION

	HF163F-L16	/12	-H	1A-	S	L	T	L2	(XXX)
Type									
Coil voltage	3,5,6,9,12,24 VDC								
Contact arrangement	**H:** 1 Form A								
Termination	**Nil:** Standard		**1A:** Wide pin type						
Construction	**S:** Plastic sealed(uncertified)		**Nil:** Flux proofed						
Coil power	**Nil:** Standard		**L:** Sensitive type						
Contact material	**T:** $AgSnO_2$								
Coil type	**L1:** Single coil latching		**L2:** Double coils latching						
Special code [1)2)]	**XXX:**Customer special requirement								

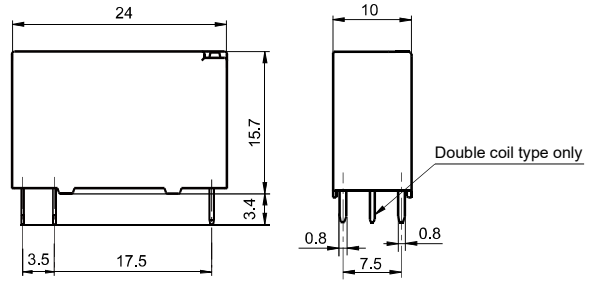
Notes: 1) For clean environment (free from contamination, such as H_2S, SO_2, NO_2, dust, etc.), flux proofed type is recommended. For contaminated environment, plastic sealed type is recommended and shall be confirmed in actual application.
2) If water cleaning or surface treatment is required after assembling relay on print circuit board, please contact us to confirm the suitable soldering conditions and specifications.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PCB LAYOUT

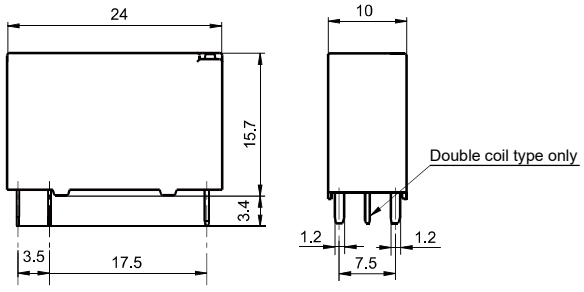
Unit: mm

Outline Dimensions

HF163F-L16/XX-HXT-X



HF163F-L16/XX-H1A-XT-X



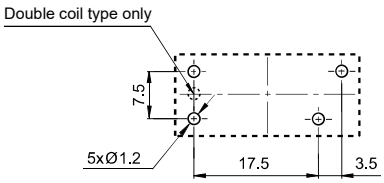
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PCB LAYOUT

Unit: mm

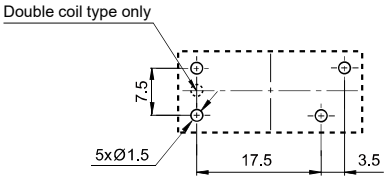
PCB Layout

(Bottom view)

HF163F-L16/XX-HXT-X



HF163F-L16/XX-H1A-XT-X



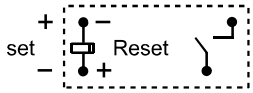
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be±0.2mm; outline dimension ＞1mm and ≤5mm, tolerance should be±0.3mm; outline dimension ＞5mm, tolerance should be ±0.4mm.

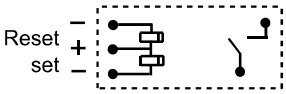
2) The tolerance without indicating for PCB layout is always ±0.1mm.

Wiring Diagram

(Bottom view)

Reset Status

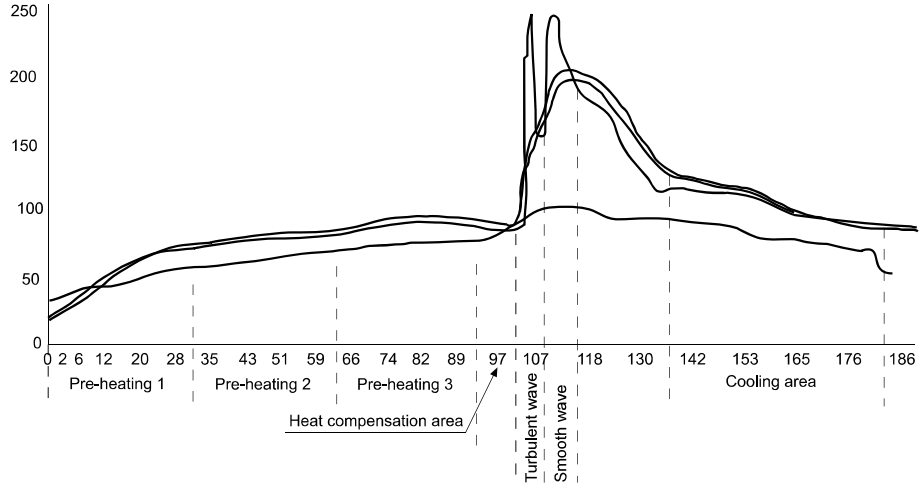




CAUTIONS

1) The recommended soldering temperature range is 250±10°C with the duration of 2～5s. It is not suggested to apply reflow soldering method, if it is required indeed, please contact with our technicians. It is general required that the wave soldering temperature at 250°C shall not more than 2s; The above chart is the wave soldering temperature distribution chart we recommended for your reference.
2) Relay is on the "reset" or "set" status when delivery, with the consideration of shock risen from transit and relay mounting, relay would be changed to "set" or "reset" status, therefore, when application (connecting the power supply),please reset the relay to "set" or "reset" status on request.
3) In order to maintain "set" or "reset" status, energized voltage applied across the coil should reach the rated voltage, impulse width should be 5 times more than "set" or "reset" time. Do not energize voltage to "set" coil and "reset" coil simultaneously. And also long energized time (more than 1 min) should be avoided.
4) Keep the product away from strong magnetic field during transportation, storage and application, to avoid change of set/reset voltage.

Wave soldering temperature distribution chart



Disclaimer

The specification is for reference only. 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.