

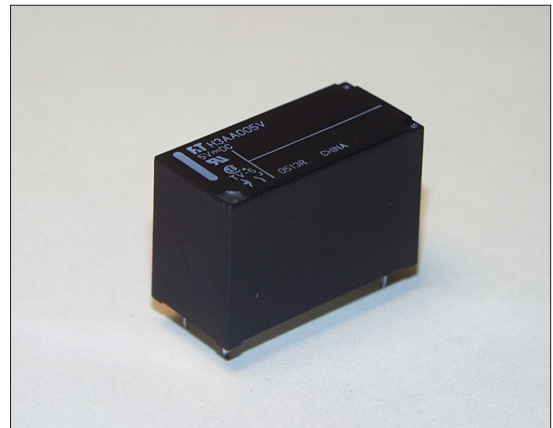
# SILENT POWER RELAY

# 1 POLE—10 A LOW PROFILE TYPE FTR-H3 SERIES

RoHS compliant

## ■ FEATURES

- Pin compatible with widely used VS and FTR-H1 series power relays
- Ultra silent relay with patented unique U-shape spring. Noise level is about 50dB at 5cm.
- Low profile (height 16.5 mm)/ cadmium free contacts
- High isolation in small package
  - Insulation distance : 8 mm (between coil and contacts)
  - Dielectric strength : 5,000 VAC
  - Surge strength : 10,000 V
- An electric life of 100,000 operations at rated load (10A, 250VAC, cos Phi 1) and satisfy at TV-5 standard.
- Plastic materials —UL94 flame class V-0
- UL (conforms to UL508, 873), CSA (conforms to CSA22.2 No.14), VDE (conforms to VDE 0435, 0631, 0700, 0860)
- Conforms to FIMKO, DEMKO
- Lead free and cadmium free contacts
- Sealed type relay



## ■ ORDERING INFORMATION

[Example]       $\frac{\text{FTR-H3}}{\text{(a)}} \quad \frac{\text{A}}{\text{(b)}} \quad \frac{\text{A}}{\text{(c)}} \quad \frac{\text{012}}{\text{(d)}} \quad \frac{\text{V}}{\text{(e)}}$

(a)	Series Name	FTR-H3: FTR-H3 Series			
(b)	Contact Arrangement	A	: 1 form A		
(c)	Coil Type	A	: Standard type		
(d)	Nominal Voltage	005	: 5 VDC	012	: 12 VDC
		009	: 9 VDC	024	: 24 VDC
(e)	Contact Material/TV TypeT	V	: Gold overlay silver alloy		

Ordering Code      Actual Marking  
FTR-H3AA05V      H3AA05V

# FTR-H3 SERIES

## ■ SPECIFICATIONS

Item		FTR-H3AA ( ) ( )	
Contact	Arrangement	1 Form A	
	Material	Silver alloy	
	Style	Single	
	Resistance (initial)	Max. 100 ohms (at 1A 6 VDC)	
	Rating	10A 250 VAC / 30 VDC	
	Max. carrying current	14A	
	Max. switching power	2,500VA/300W	
	Max. switching voltage	400VAC/300VDC	
	Min. switching load	10mA 5VDC	
	Max. inrush current	78A 120VAC (at lamp load)	
Coil	Nominal power (at 20° C)	530mW	
	Operate power (at 20° C)	260mW	
	Operating temperature	-40° C to +75° C (no frost)	
Time value	Operate (without diode)	Max. 10ms (at nominal voltage, without bounce)	
	Release (without diode)	Max. 5ms (at nominal voltage, without bounce)	
Insulation	Resistance (at 500VDC)	Min. 1,000 Mohms	
	Dielectric Strength	B/T contacts	1,000VAC, 1 minute
		B/T coil and contacts	5,000VAC, 1 minute
	Surge strength	Standard 10,000V (at 1.2x50 μsec.)	
Life	Mechanical	2x10 <sup>7</sup> operations minimum	
	Electrical (resistive load)	1x10 <sup>5</sup> operations min. (10A 250VAC/30VDC) 2.5x10 <sup>4</sup> operations min. (TV-5 rating)	
Vibration resistance	Misoperation	10 to 55 Hz at double amplitude of 1.65mm	
	Endurance	10 to 55 Hz at double amplitude of 3.3mm	
Shock resistance	Misoperation	Min. 100m/s <sup>2</sup> (11±1ms)	
	Endurance	Min. 1,000m/s <sup>2</sup> (6±1ms)	
Weight		Approx. 12g	
Average sound pressure		Approx. 50dB at 5cm	

# FTR-H3 SERIES

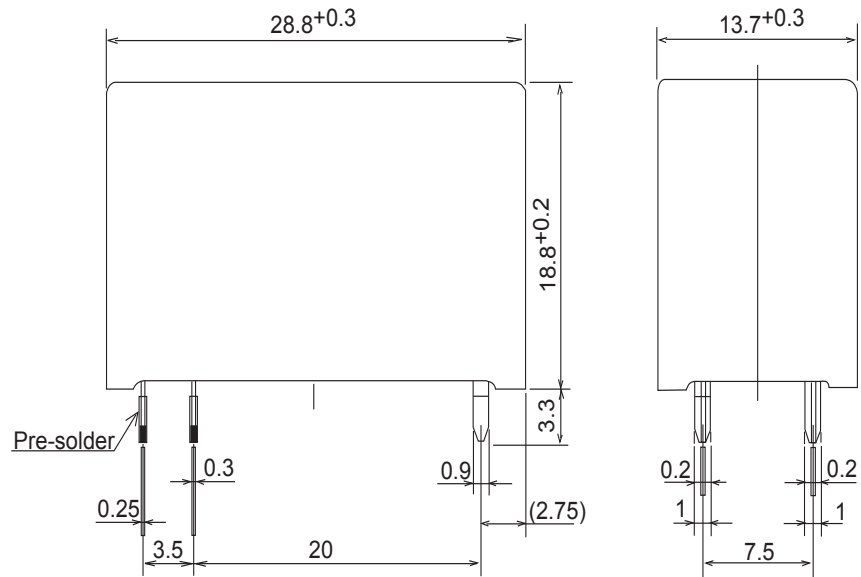
## ■ COIL DATA CHART

Coil Number	Nominal Voltage	Coil Resistance ( $\pm 10\%$ )	Operate Voltage	Release Voltage	Nominal Power ( $\pm 10\%$ )
005	5	47 $\Omega$	3.5 VDC	0.5 VDC	530mW
009	9	155 $\Omega$	6.3 VDC	0.9 VDC	
012	12	270 $\Omega$	8.4 VDC	1.2 VDC	
024	24	1,100 $\Omega$	16.8 VDC	2.4 VDC	

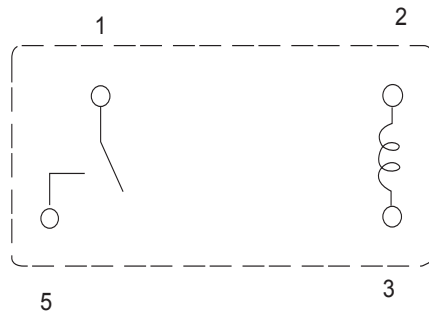
Note: All values in the table are measured at 20°C.

# FTR-H3 SERIES

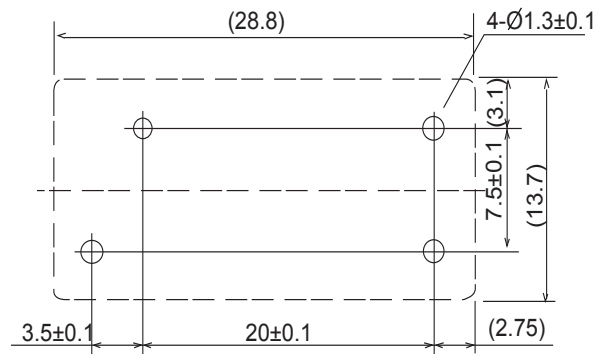
## ■ DIMENSIONS



## ● Schematics (BOTTOM VIEW)



## ● PC board mounting hole layout (BOTTOM VIEW)



Unit: mm

## RoHS Compliance and Lead Free Relay Information

### 1. General Information

- Relays produced after the specific date code that is indicated on each data sheet are lead-free now. Most of our signal and power relays are lead-free. Please refer to Lead-Free Status Info. (<http://www.fujitsu.com/us/downloads/MICRO/fcai/relays/lead-free-letter.pdf>)
- Lead free solder paste currently used in relays is Sn-3.0Ag-0.5Cu.
- All signal and most power relays also comply with RoHS. Please refer to individual data sheets. Relays that are RoHS compliant do not contain the 5 hazardous materials that are restricted by RoHS directive (lead, mercury, chromium IV, PBB, PBDE).
- It has been verified that using lead-free relays in leaded assembly process will not cause any problems (compatible).
- "LF" is marked on each outer and inner carton. (No marking on individual relays).
- To avoid leaded relays (for lead-free sample, etc.) please consult with area sales office.
- We will ship leaded relays as long as the leaded relay inventory exists.

Note: Cadmium was exempted from RoHS on October 21, 2005. (Amendment to Directive 2002/95/EC)

### 2. Recommended Lead Free Solder Profile

- Recommended solder paste Sn-3.0Ag-0.5Cu.

#### Reflow Solder condition

**Flow Solder condition:**

Pre-heating: maximum 120°C  
Soldering: dip within 5 sec. at  
260°C solder bath

**Solder by Soldering Iron:**

Soldering Iron  
Temperature: maximum 360°C  
Duration: maximum 3 sec.

**We highly recommend that you confirm your actual solder conditions**

### 3. Moisture Sensitivity

- Moisture Sensitivity Level standard is not applicable to electromechanical relays.

### 4. Tin Whisker

- Dipped SnAgCu solder is known as low risk tin whisker. No considerable length whisker was found by our in house test.

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