

# POWER RELAY

## 1 POLE - 5A change over relay

### FTR-F3 Series

#### ■ FEATURES

- High density mounting
    - Height: 15mm
    - Mounting space: 164 mm<sup>2</sup>
  - High insulation
    - Insulation distance: 7mm between coil and contact (conforms to IEC 60065)
    - Dielectric strength: 4KV
    - Surge strength: 10KV
  - Cadmium free contact for eco-program
  - Safety standards
    - UL, CSA, VDE, SEMKO, CQC
  - Plastic sealed relay, RTIII
  - RoHS compliant
- Please see page 5 for more information



#### ■ PARTNUMBER INFORMATION

**[Example]**     $\frac{\text{FTR-F3}}{\text{(a)}}$      $\frac{\text{C}}{\text{(b)}}$      $\frac{\text{A}}{\text{(c)}}$      $\frac{\text{012}}{\text{(d)}}$      $\frac{\text{E}}{\text{(e)}}$

(a)	Relay type	FTR-F3 :FTR-F3-Series
(b)	Contact configuration	C : 1 form C
(c)	Coil type (power)	A : 360mW
(d)	Coil rated voltage	012 : 5.....24 VDC Coil rating table at page 3
(e)	Contact material	E : AgNi

Actual marking does not carry the type name : "FTR"  
 E.g.: Ordering code: FTR-F3CA012E    Actual marking: F3CA012E

# FTR-F3 SERIES

## ■ SPECIFICATION

Item	FTR-F3		
Contact Data	Configuration	1 form C	
	Construction	Single	
	Material	AgNi	
	Resistance (initial)	Max. 100mΩ at 1A, 6VDC	
	Contact rating (resistive)	5A, 250VAC, 30VDC	
	Max. carrying current	5A	
	Max. switching voltage	277VAC, 150VDC	
	Max. switching power	1,250VA, 150W	
	Min. switching load *	10 mA, 5VDC	
Life	Mechanical	Min. 20 x 10 <sup>6</sup> operations	
	Electrical	Min. 100 x 10 <sup>3</sup> operations (3A, 250VAC/30VDC) Min. 50 x 10 <sup>3</sup> operations (5A, 250VAC/30VDC)	
Coil Data	Rated power (20 °C)	360mW	
	Operate power	200mW	
	Operating temperature range	-40 °C to +85 °C (no frost)	
Timing Data	Operate (at nominal voltage)	Max. 10ms (without bounce)	
	Release (at nominal voltage)	Max. 10ms (without bounce)	
Insulation	Resistance (initial)	Min. 1,000MΩ at 500VDC	
	Dielectric strength	Open contacts	750VAC (50/60Hz) 1min
		Contacts to coil	4,000VAC (50/60Hz) 1min
	Surge strength	Contacts to coil	10,000V / 1.2 x 50μs standard wave
	Clearance		7mm
	Creepage		7mm
	EN61810-1, VDE0435	Voltage	250V
		Pollution degree	2
Material group		III	
Other	Vibration resistance	Misoperation	10 to 55Hz double amplitude 1.5mm
		Endurance	10 to 55Hz double amplitude 1.5mm
	Shock	Misoperation	Min. 100m/s <sup>2</sup> (11±1ms)
		Endurance	Min. 1,000m/s <sup>2</sup> (6±1ms)
	Weight		Approximately 6g
	Sealing		Plastic sealed RTIII

\* Minimum switching loads mentioned above are reference values. Please perform the confirmation test with actual load before production since reference values may vary according to switching frequencies, environmental conditions and expected reliability levels.

# FTR-F3 SERIES

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-34970699  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## ■ COIL RATING

360mW type

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC) *	Must Release Voltage (VDC) *	Rated Power (mW)
005	5	69	3.75	0.5	360
006	6	100	4.5	0.6	
009	9	225	6.75	0.9	
012	12	400	9	1.2	
018	18	900	13.5	1.8	
024	24	1,600	18	2.4	

Note: All values in the tables are valid for 20°C and zero contact current.

\* Specified operate values are valid for pulse wave voltage.

## ■ SAFETY STANDARDS

Type	Compliance	Contact rating
UL	UL 508	Flammability: UL 94-V0 (plastics)
	E63614	5A, 30 VDC / 250VAC (resistive) 3A, 30 VDC / 250 VAC (resistive)
CSA	C22.2 No. 14 LR 40304	1/10 HP, 250VAC /125VAC 1/8 HP, 277VAC Pilot duty: D300
VDE	0435 40015024	5A, 250 VAC, $\cos\phi=1$ , $50 \times 10^3$ , 70°C 5A, 30 VDC, $\tau=0$ msec, $100 \times 10^3$ , 70°C 3A, 250 VAC, $\cos\phi=1$ , $50 \times 10^3$ , 70°C 3A, 30 VDC, $\tau=0$ msec, $200 \times 10^3$ , 70°C

# FTR-F3 SERIES

## ■ DIMENSIONS

Change-over-contact type

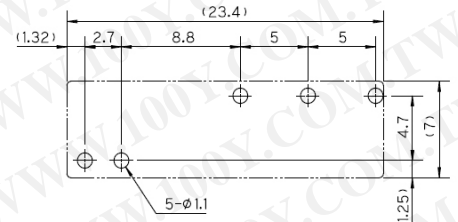
### ● Dimensions



### ● Schematics (BOTTOM VIEW)



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



Unit: mm

勝特力材料 886-3-5753170  
勝特力电子(上海) 86-21-34970699  
勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## RoHS Compliance and Lead Free Information

### 1. General Information

- All signal and power relays produced by Fujitsu Components are compliant with RoHS directive 2002/95EC including amendments.
- Cadmium as used in electrical contacts is exempted from the RoHS directives on October 21st, 2005. (Amendment to Directive 2002/95/EC)
- All of our signal and power relays are lead-free. Please refer to Lead-Free Status Info for older date codes at: <http://www.fujitsu.com/us/downloads/MICRO/fcai/relays/lead-free-letter.pdf>
- Lead free solder plating on relay terminals is Sn-3.0Ag-0.5Cu, unless otherwise specified. This material has been verified to be compatible with PbSn assembly process.

### 2. Recommended Lead Free Solder Profile

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

#### 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, unless otherwise indicated.

### 4. Tin Whiskers

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