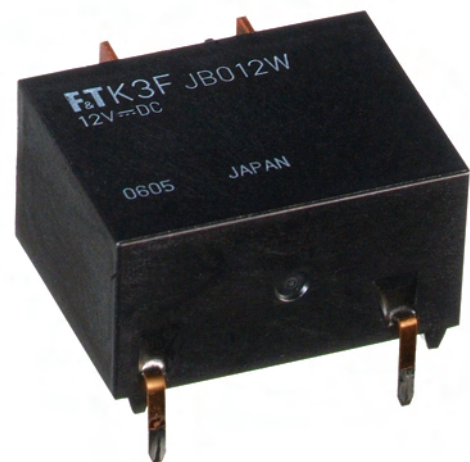


# POWER RELAY

## 1 POLE -25A Flat High Current Power Relay FTR-K3F Series

### ■ FEATURES

- Low profile (height 18.2mm)
  - High contact rating (25A) with #250 tab terminals
  - Low coil power (780mW)
  - Cadmium free contacts, lead free
  - Safety standards
    - UL, CSA, VDE, CQC approved
    - UL, CSA TV-5 rating approved (1 form A type)
  - Flux proof, RTII
  - RoHS compliant
- Please see page 6 for more information



### ■ PARTNUMBER INFORMATION

[Example]      FTR-K3F   J   B   012   W   -   \*\*  
                          (a)   (b)   (c)   (d)   (e)   (f)

(a)	Relay type	FTR-K3F: FTR-K3F Series			
(b)	Contact configuration	A	: 1 form A (PCB terminal)		
		J	: 1 form A (PCB + Tab terminals)		
(c)	Coil type	B	: Standard type (780mW)		
(d)	Coil rated voltage	012	: 5...48VDC Coil rating table at page 3		
(e)	Contact material	W	: AgSnO <sub>2</sub>		
(f)	Option	**	: Customer specific type designation		

Actual marking does not carry the type name : "FTR"

E.g.: Ordering code: FTR-K3FJB012W

Actual marking: K3FJB012W

# FTR-K3F SERIES

## ■ SPECIFICATION

Item			FTR-K3F
Contact Data	Configuration		1 form A
	Construction		Single
	Material		AgSnO2
	Resistance (initial)		Max. 100mOhm at 1A, 6VDC
	Contact rating	Resistive	25A, 250VAC
		Motor load	Inrush 80A (0.38) cosφ=0.7, rated 20A cosφ=0.9 250VAC
		Inverter load	Inrush 200A peak / rated 20A 100VAC
	Max. carrying current *1		25A
	Max. switching current		25A
	Max. switching voltage		250VAC
	Max. switching power		6,250VA
	Min. switching load *2		100mA , 5VDC (reference value)
Life	Mechanical		Min. 2 x 10 <sup>6</sup> operations
	Electrical	Resistive	Min. 100 x 10 <sup>3</sup> operations
		Motor	Min. 200 x 10 <sup>3</sup> operations
		Inverter	Min. 30 x 10 <sup>3</sup> operations
Coil Data	Rated power (20 °C)		780mW
	Operate power (20 °C)		380mW
	Operating temperature range		-40 °C to +60 °C (no frost)
Timing Data	Operate (at nominal voltage)		Max. 20ms (without bounce)
	Release (at nominal voltage)		Max. 10ms (no diode)
Insulation	Resistance (initial)		Min. 1,000MOhm at 500VDC
	Dielectric strength	Open contacts	1,000VAC (50/60Hz) 1min
		Contacts to coil	5,000VAC (50/60Hz) 1min
	Surge strength	Coil to contacts	8,500V at 1.2 x 50μs standard wave
	Clearance		6.4mm
	Creepage		9.5mm
	EN61710-1, VDE0435	Voltage	250V
		Pollution degree	3
		Material group	III a
Other	Vibration resistance	Misoperation	10 to 55Hz double amplitude 1.5mm
		Endurance	10 to 55Hz double amplitude 1.5mm
	Shock	Misoperation	Min. 200m/s <sup>2</sup> (11±1ms)
		Endurance	Min. 1,000m/s <sup>2</sup> (6±1ms)
	Weight		Approximately 25g
	Sealing		Flux proof, RTII

\*1 Need to consider the heat from PCB when max. current is more than 10A. Please confirm at actual condition.

\*2 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-K3F SERIES

## ■ COIL RATING

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC) *	Must Release-Voltage (VDC) *	Max. Coil Voltage (VDC)	Rated Power (mW)
005	5	32	3.5	0.5	9	780
006	6	46	4.2	0.6	10.8	
009	9	105	6.2	0.9	16.2	
012	12	185	8.4	1.2	21.6	
018	18	415	12.6	1.8	32.4	
024	24	740	16.8	2.4	43.2	
048	48	2,955	33.6	4.8	86.4	

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

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

## ■ SAFETY STANDARDS

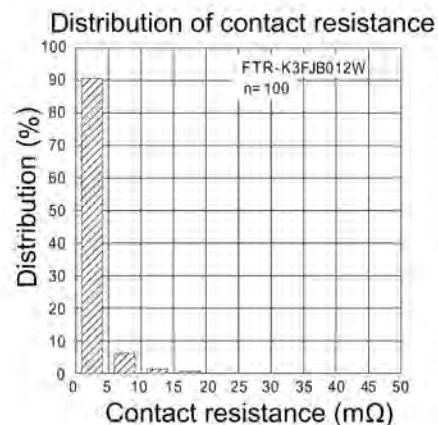
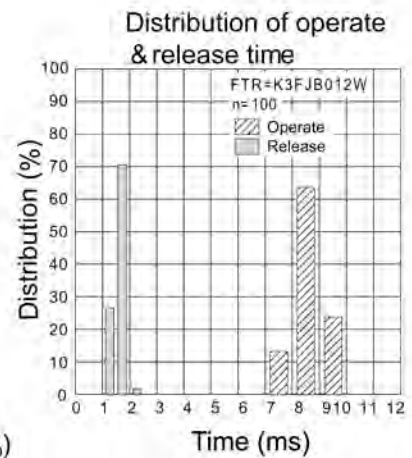
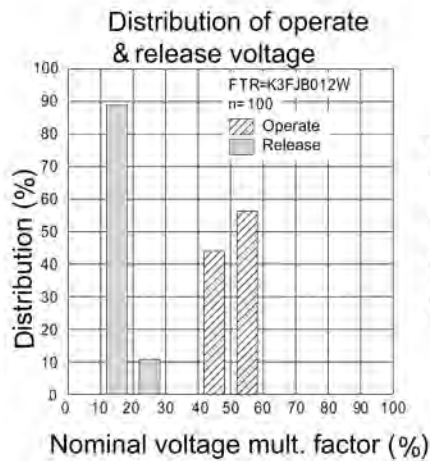
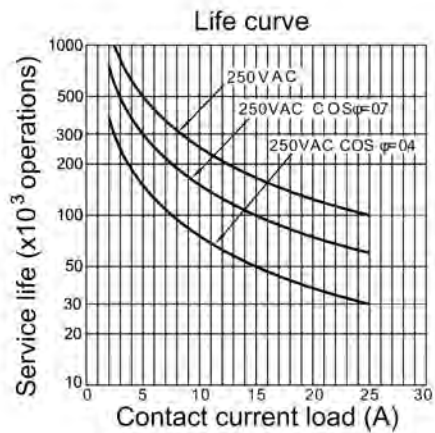
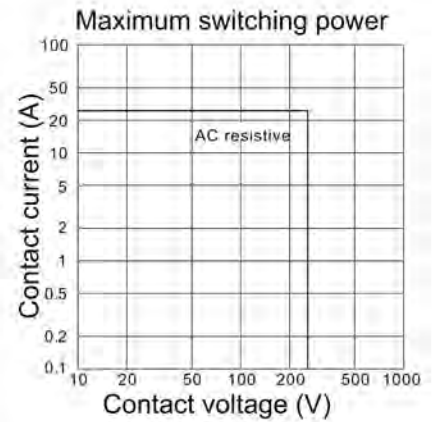
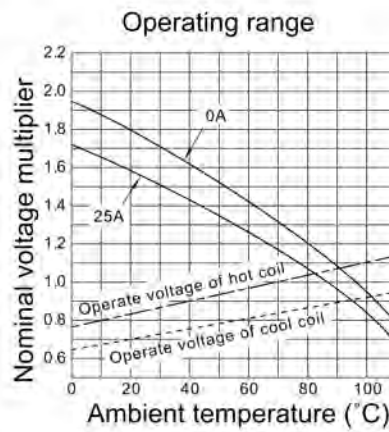
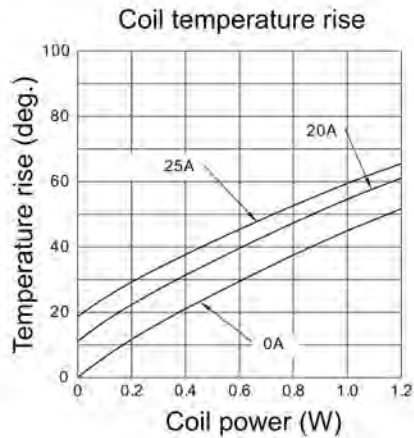
Type	Compliance	Contact rating
UL	UL 508	Flammability: UL 94-V0 (plastics)
	E63614	25A, 250 VAC (resistive) 1 HP, 125VAC
CSA	C22.2 No. 14 LR 40304	2 HP, 277VAC, 100,000 cycles
VDE	0435 40011330	25A, 250 VAC (cosφ=1) 60°C, 100K ops.
CQC	GB15092.1, GB8898 04001009179	25A, 250VAC

## ■ PACKAGING

Package	MOQ
Tube	300pcs

# FTR-K3F SERIES

## ■ CHARACTERISTIC DATA

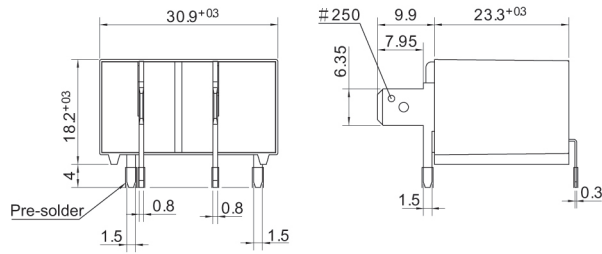


# FTR-K3F SERIES

## ■ DIMENSIONS

### ● Dimensions

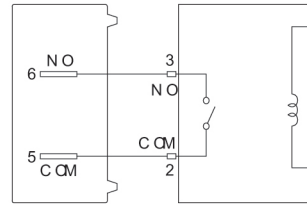
FTR-K3FJB



### ● Schematics

FTR-K3FJB

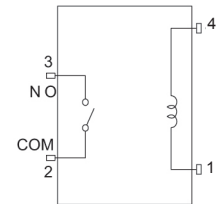
(SIDE VIEW) (BOTTOM VIEW)



### ● PC board mounting hole layout

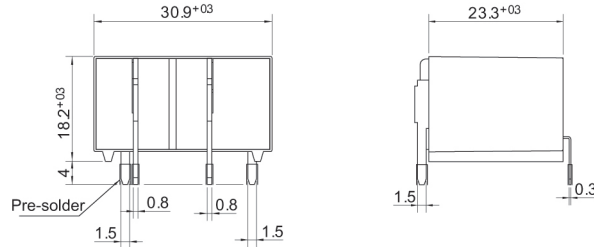
FTR-K3FAB

(BOTTOM VIEW)

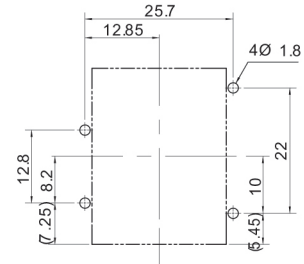


### ● Dimensions

FTR-K3FAB



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



Unit: mm

## RoHS Compliance and Lead Free Information

### 1. General Information

- All signal and power relays produced by Fujitsu Components are compliant with RoHS directive 2002/95/EC 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.

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