

POWER RELAY

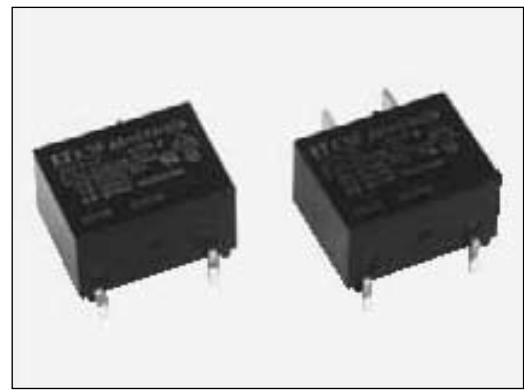
1 POLE - 25A Heavy Load Control

FTR-K3F Series

RoHS compliant

■ FEATURES

- High heat resistance with UL94V-0
- Low profile (height 18.2mm)
- High contact rating (25A) with #250 tab terminal
- Low coil power (780mW)
- Cadmium free contacts, lead free
- SAFETY STANDARDS
UL, CSA, VDE, CQC approved
- RoHS Compliant



■ ORDERING INFORMATION

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

(a)	Series Name	FTR-K3F: FTR-K3F Series			
(b)	Contact Arrangement	A	: 1 form A (PCB terminal)		
		J	: 1 form A (Tab terminal)		
(c)	Coil Power	B	: Standard (780 mW)		
(d)	Nominal Coil Voltage	005	006	009	012
		: 5 VDC,	: 6VDC,	: 9VDC	: 12VDC
		018	024	048	
		: 18 VDC	: 24VDC,	: 48VDC	
(e)	Contact Material	W	: AgSnO2		
(f)	Special Designation	Special specification			

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

E.g.: Ordering code: FTR-K3FJB024W Actual marking: K3FJB024W

FTR-K3F Series

■ PART NUMBERS

400mW type

Ordering Part Number	Series	Contact	Coil Power	Coil Voltage	Contact Material
FTR-K3FAB005W	FTR-K3F	A: 1 form A PCB terminal	B: 780 mW	5	W: AgSnO ₂
FTR-K3FAB006W				6	
FTR-K3FAB009W				9	
FTR-K3FAB012W				12	
FTR-K3FAB018W				18	
FTR-K3FAB024W				24	
FTR-K3FAB048W				48	
FTR-K3FJB005W		J: 1 form A Tab terminal		5	
FTR-K3FJB006W				6	
FTR-K3FJB009W				9	
FTR-K3FJB012W				12	
FTR-K3FJB018W				18	
FTR-K3FJB024W				24	
FTR-K3FJB048W				48	

■ COIL DATA CHART

Coil Voltage	Nominal Voltage (VDC)	Maximum Coil Voltage* ¹ (VDC)	Coil Resistance (±10%)	Must Operate Voltage* ²	Must Release Voltage* ²	Nominal Power
005	5	9	32 Ω	3.5 VDC	0.5 VDC	780mW
006	6	10.8	46 Ω	4.2 VDC	0.6 VDC	
009	9	16.2	105 Ω	6.2 VDC	0.9 VDC	
012	12	21.6	185 Ω	8.4 VDC	1.2 VDC	
018	18	32.4	415 Ω	12.6 VDC	1.8 VDC	
024	24	43.2	740 Ω	16.8 VDC	2.4 VDC	
048	48	86.4	2,955 Ω	33.6 VDC	4.8 VDC	

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

*1: No contact current at 20°C. Please see 'operating range' data for other conditions.

*2: Specified values are subject to pulse wave voltage

FTR-K3F Series

■ SPECIFICATIONS

Item		FTR-K3F	
Contact	Arrangement	1 form A	
	Material	AgSnO ₂	
	Configuration	Single	
	Resistance (initial)	Maximum 100 mΩ at 1 A, 6 VDC	
	Rating		25 A, 250 VAC (resistive)
			Inrush 80A (0.38) cosØ=0.7, rated 20A cosØ=0.9 250VAC (motor load)
			Inrush 200A ()x rated 20A 100VAC (inverter load)
	Maximum Carrying Current*1	25A	
	Maximum Switching Current	25A	
	Maximum Switching Power	6,250VA	
	Maximum Switching Voltage	250 VAC	
Minimum Switching Load*2	100 mA 5VDC (Reference)		
Coil	Nominal Power (at 20°C)	780mW	
	Operate Power (at 20°C)	380 mW	
	Operating Temperature	-40°C to +60°C (no frost)	
Time Value	Operate	Maximum 20ms (at nominal voltage, no bounce)	
	Release	Maximum 10ms (at nominal voltage, no bounce)	
Life	Mechanical	20 x 10 ⁶ operations minimum	
	Electrical	Resistive	100 x 10 ³ operations min.
		Motor	200 x 10 ³ operations min.
		Inverter	30 x 10 ³ operations min.
Other	Vibration Resistance	Misoperation	10 to 55 Hz, at double amplitude of 1.5 mm
		Endurance	10-55Hz, at double amplitude of 1.5 mm
	Shock Resistance	Misoperation	Min. 200m/s ² (11±1ms)
		Endurance	Min. 1,000m/s ² (6±1ms)

*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 the actual load before production since reference values may vary according to switching frequencies, environmental conditions and expected reliability levels.

FTR-K3F Series

■ INSULATION

Item	FTR-K3F	Note
Resistance	Minimum 1,000 MΩ	at 500 VDC
Dielectric Strength	between open contacts	1,000 VAC (50/60 Hz) 1 min.
	between coil and contacts	5,000 VAC (50/60 Hz) 1 min.
Surge Voltage (between coil and contact)	8,500 V	1.2 x 50μs standard wave
Clearance / Creepage distance	6.4mm / 9.5mm	
Insulation (DIN EN61810-1 VDE0435) Voltage Pollution Isolation material group	250V 3 III a	

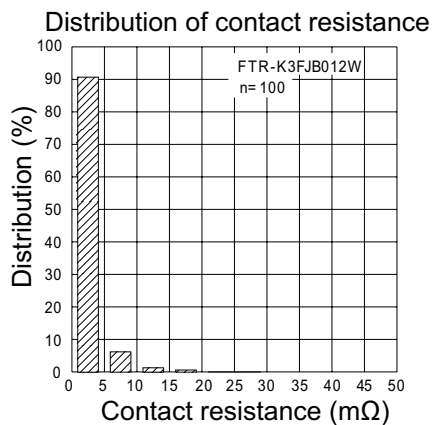
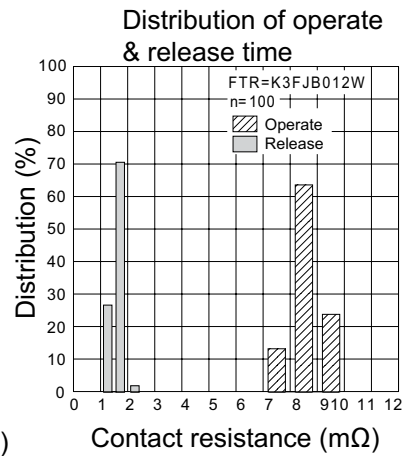
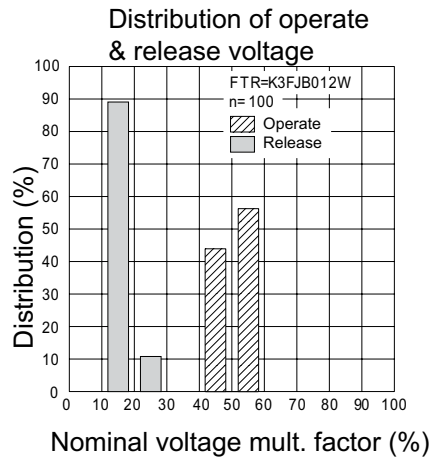
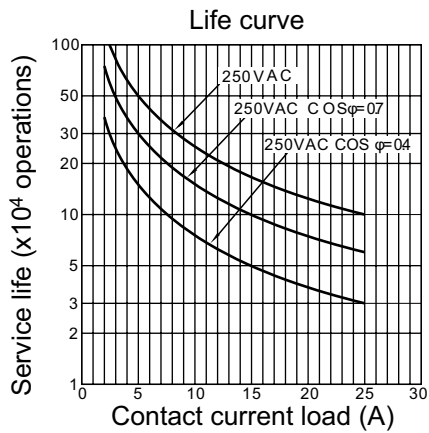
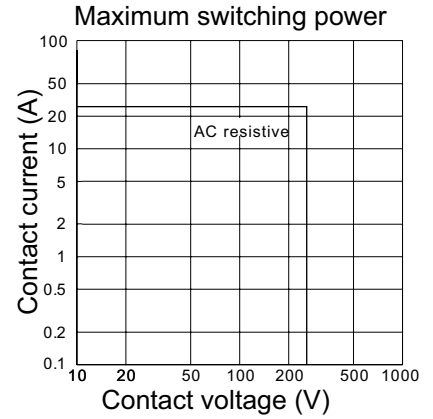
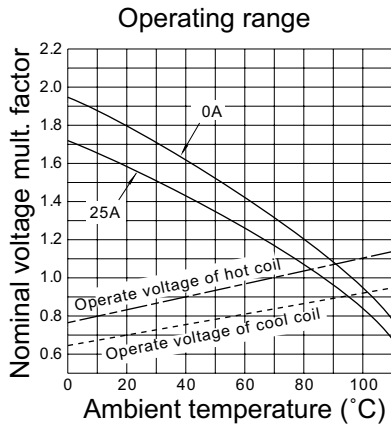
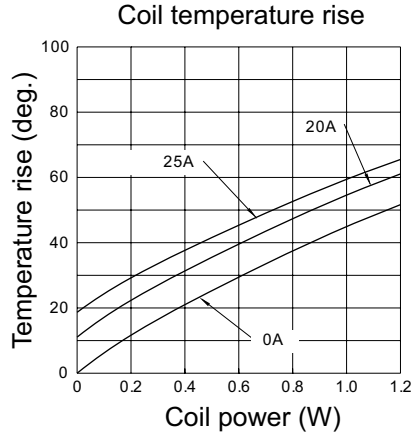
■ SAFETY STANDARDS

Type	Compliance	Contact rating
		FTR-K3F
UL	UL 508 E63614	Flammability: UL 94-V0 (plastics) 25A, 250 VAC (resistive) 1 HP, 125VAC 2 HP, 277VAC, 100,000 ops.
CSA	C22.2 No. 14 LR 40304	
VDE	0435	25A, 250VAC (cosφ=1) 60°C
CQC	GB15092.1, GB8898 04001009179	25A, 250VAC

■ PACKAGING

Package	MOQ	Weight of relay
Tube	300 pieces	Approximately 25 g

CHARACTERISTIC DATA

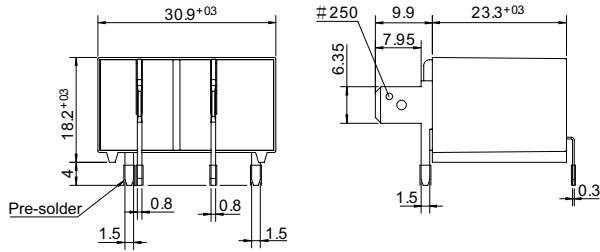


FTR-K3F Series

■ DIMENSIONS

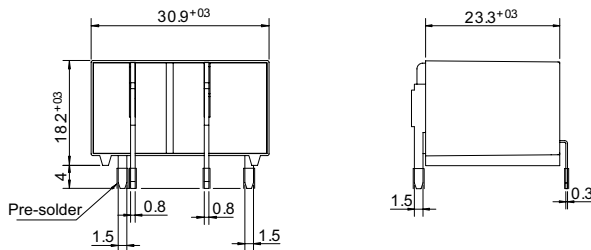
● Dimensions

FTR-K3FJB



● Dimensions

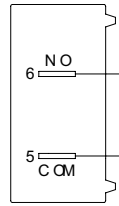
FTR-K3FAB



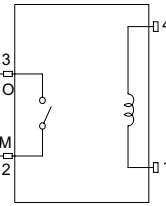
● Schematics

FTR-K3FJB

(SIDE VIEW)



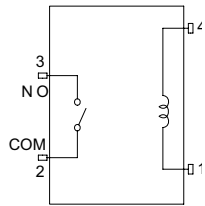
(BOTTOM VIEW)



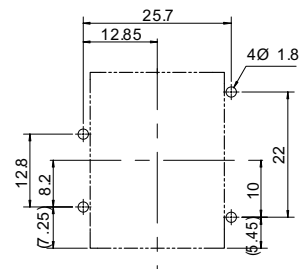
● PC board mounting hole layout

FTR-K3FAB

(BOTTOM VIEW)



● PC board mounting hole layout (BOTTOM VIEW)



Unit: mm

RoHS Compliance and Lead Free Relay Information

1. General Information

- If applicable, Relays produced after the specific date code that is indicated on each data sheet are lead-free now. All 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 plating currently used in relays is Sn-3.0Ag-0.5Cu.
- All signal and 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, deca BDE and PFOS).
- 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 lead containing relay inventory exists, if allowed.

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 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.

Fujitsu Components International Headquarter Offices

Japan

Fujitsu Component Limited
Gotanda-Chuo Building
3-5, Higashigotanda 2-chome, Shinagawa-ku
Tokyo 141, Japan
Tel: (81-3) 5449-7010
Fax: (81-3) 5449-2626
Email: promothq@ft.ed.fujitsu.com
Web: www.fcl.fujitsu.com

North and South America

Fujitsu Components America, Inc.
250 E. Caribbean Drive
Sunnyvale, CA 94089 U.S.A.
Tel: (1-408) 745-4900
Fax: (1-408) 745-4970
Email: components@us.fujitsu.com
Web: <http://www.fujitsu.com/us/services/edevice/components/>

Europe

Fujitsu Components Europe B.V.
Diamantlaan 25
2132 WV Hoofddorp
Netherlands
Tel: (31-23) 5560910
Fax: (31-23) 5560950
Email: info@fceu.fujitsu.com
Web: emea.fujitsu.com/components/

Asia Pacific

Fujitsu Components Asia Ltd.
102E Pasir Panjang Road
#01-01 Citilink Warehouse Complex
Singapore 118529
Tel: (65) 6375-8560
Fax: (65) 6273-3021
Email: fcal@fcal.fujitsu.com
Web: <http://www.fujitsu.com/sg/services/micro/components/>

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