

# POWER RELAY

## 1 POLE - 25A - Latching relay

### FTR-K3L-WG Series

#### ■ FEATURES

- 1 pole, 25A
- 2 coils latching type
- 1 Form A
- Contact gap 1.5mm  
2.5kV surge breakdown voltage  
Compliance with European photovoltaic standard (VDE0126)
- High insulation in small package (between coil and contact)
  - Insulation distance: Clearance > 6.4mm  
Creepage > 9.5mm
  - Dielectric strength: 5,000VAC
  - Surge strength: 8,500V
- Flammability UL94V-0 (plastics)
- RoHS compliant  
Please see page 6 for more information  
Contains no lead and features cadmium-free contacts



#### ■ PARTNUMBER INFORMATION

[Example]      FTR-K3L    A    B    012    W    -    WG  
                   (a)    (b)    (c)    (d)    (e)    (f)

(a)	Relay type	FTR-K3L : FTR-K3L-Series
(b)	Contact configuration	A : 1 form A
(c)	Coil type	B : Standard sensitive (900mW)
(d)	Coil rated voltage	012 : 5.....24 VDC Coil rating table at page 3
(e)	Contact material	W : Silver alloy
(f)	Version	WG : Contact gap 1.5mm

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

E.g.: Ordering code: FTR-K3LAB012W-WG

Actual marking: K3LAB012W-WG

# FTR-K3L-WG SERIES

## ■ SPECIFICATION

Item			FTR-K3L-WG
Contact Data	Configuration		1 form A (contact gap 1.5mm)
	Material		Silver alloy
	Resistance (initial)		Max. 100mΩ at 1A, 6VDC
	Contact rating		25A / 250VAC (resistive)
	Max. carrying current		30A
	Max. switching power		6,250VA
	Max. switching voltage		250VAC
	Max. switching current		25A
	Min. switching load (reference)		100mA, 5VDC
Life	Mechanical		Min. 1 x 10 <sup>6</sup> operations
	Electrical	Resistive	25A, 250VAC, 100 x 10 <sup>3</sup> operations
		Inductive	25A, 250VAC (cosφ 0.8), 30 x 10 <sup>3</sup> operations
		Inductive (overload)	37.5A, 250VAC (cosφ 0.8), 50 operations
Coil Data	Rated power (at 20 °C)		900mW
	Operating temperature range (no frost)		-40 °C to +85 °C
Timing Data	Set (at nominal voltage)		Max. 20ms (without bounce)
	Reset (at nominal voltage)		Max. 20ms (without bounce)
	Coil excitation time (at nominal voltage)		Min. 30ms, max. 1000ms
Insulation	Contact gap		Min. 1.5 mm
	Resistance		Min. 1,000MΩ at 500VDC
	Dielectric strength	Open contacts	2,500VAC, 1 min.
		Coil and contacts	5,000VAC, 1 min.
	Surge strength	Coil to contacts	8,500V/ 1.2 x 50μs standard wave
	Creepage		6.4mm
	Clearance		9.5mm
Other	Vibration resistance	Misoperation	10 to 55Hz double amplitude 1.5 mm
		Endurance	10 to 55Hz double amplitude 1.5 mm
	Shock resistance	Misoperation	Min. 200m/s <sup>2</sup> (11 ± 1ms)
		Endurance	Min. 1,000m/s <sup>2</sup> (6 ± 1ms)
	Weight		Approximately 25 g

\* 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-K3L-WG SERIES

## ■ COIL RATING

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Set Voltage (VDC)*	Must Reset Voltage (VDC) *	Max. Set/Reset Voltage (VDC)	Rated Power (mW)
005	5	P 28	+4.0	-	9.0	900
		S 28	-	+4.0		
006	6	P 40	+5.4	-	10.8	
		S 40	-	+5.4		
012	12	P 160	+9.6	-	21.6	
		S 160	-	+9.6		
024	24	P 640	+19.2	-	43.2	
		S 640	-	+19.2		

Note: All values in the tables are valid for 20°C and zero contact current.  
 \* Specified operate values are valid for pulse wave voltage.

P: Set coil    S: Reset coil

## ■ SAFETY STANDARDS

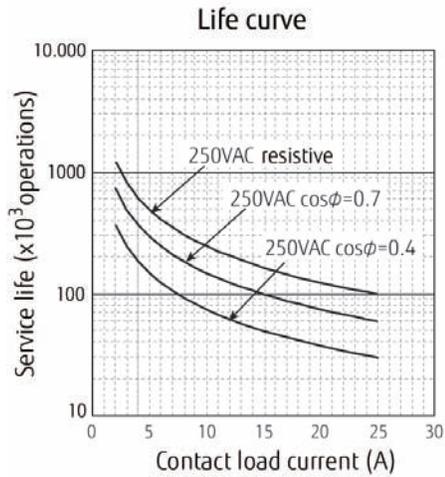
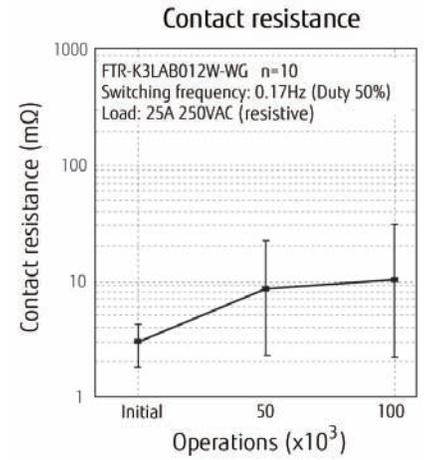
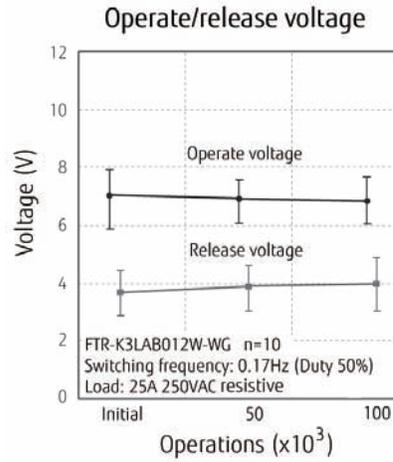
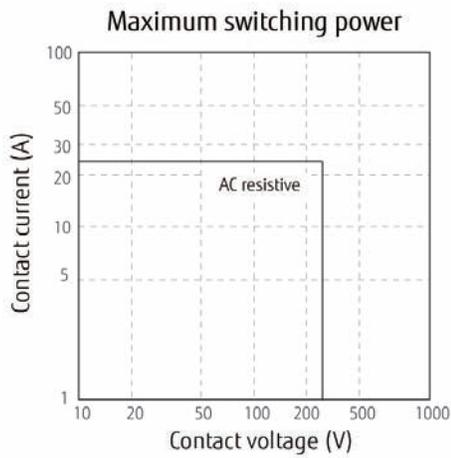
Type	Compliance	Contact rating
UL	UL 508	Flammability: UL 94-V0 (plastics)
	CSA 22.2 No.14 (by cULus)	25A, 277VAC (resistive, at 60°C)
VDE	IEC61810-1	25A, 250VAC, (cosφ=1) at 60°C

# FTR-K3L-WG SERIES

## CHARACTERISTIC DATA

The graphs are based on measurement data and are typical values.

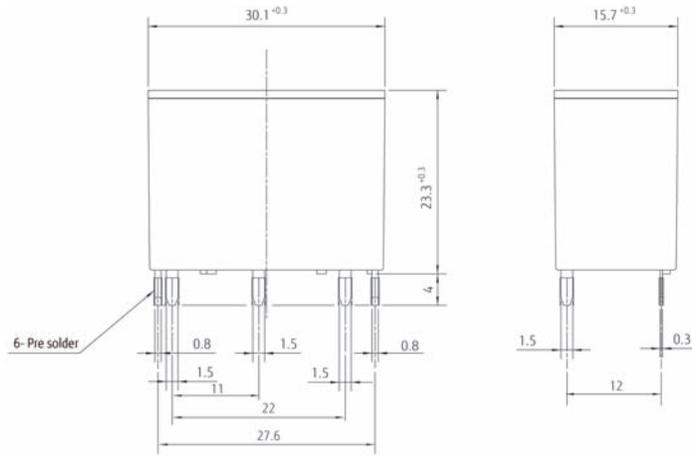
Electrical life tests (resistive load)



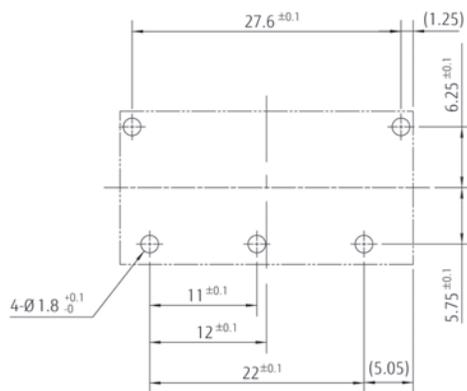
# FTR-K3L-WG SERIES

## ■ DIMENSIONS

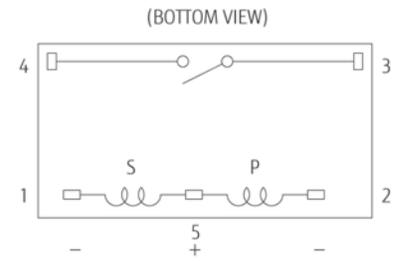
### ● Dimensions



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



### ● Schematics



P: Set coil  
S: Reset coil

Contacts drawn in reset condition.  
To operate (set), apply (+) to pin 5 and (-) to pin 2.  
To release (reset), apply (+) to pin 5 and (-) to pin 1.

## 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.

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