

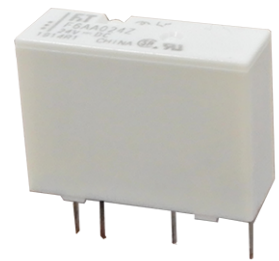
# POWER RELAY

## 1 POLE - 3A Slim Type Relay

### FTR-F6 Series

#### ■ FEATURES

- High density mounting  
Slim type with 7mm width and 142mm<sup>2</sup> mounting space
- High insulation  
Insulation distance: Minimum 6mm between coil and contact (conforms to IEC 60065)  
Dielectric strength: 4KV  
Surge strength: 10KV
- Cadmium free contact for eco-program
- Safety standards  
UL, CSA
- Plastic sealed relay, RTIII
- RoHS compliant  
Please see page 6 for more information



#### ■ PARTNUMBER INFORMATION

[Example]  $\frac{\text{FTR-F6}}{(a)} \frac{A}{(b)} \frac{A}{(c)} \frac{012}{(d)} \frac{Z}{(e)}$

(a)	Relay type	FTR-F6 : FTR-F6 Series
(b)	Contact configuration	A : 1 form A (SPST-NO)
(c)	Coil type (power)	A : 200mW
(d)	Coil rated voltage	012 : 5...24 VDC Coil rating tagle at page 3
(e)	Contact material	Z : Au+AgNi

Actual marking does not carry the type name: "FTR"  
E.g.: Ordering code: FTR-F6AA012Z Actual marking: F6AA012Z

# FTR-F6 SERIES

## ■ SPECIFICATION

Item			FTR-F6
			FTR-F6AA( )Z
Contact Data	Configuration		1 form A (SPST-NO)
	Construction		Single
	Material		Au+AgNi
	Resistance (initial)		Max.30mOhm at 1A, 6VDC
	Contact rating (resistive)		3A, 125VAC, 30VDC
	Max. carrying current		5A
	Max. switching voltage		277VAC, 30VDC
	Max. switching power		750VA, 90W
	Min. switching load *		10mA, 5VDC
Life	Mechanical		Min. 20 x 10 <sup>6</sup> operations
	Electrical (at rated load)		Min. 200 x 10 <sup>3</sup> operations
Coil Data	Rated power (20°C)		200mW
	Operate power		82mW
	Operating temperature range		-40°C to +90°C (no frost)
Timing Data	Operate (at nominal voltage)		Max. 10ms (without bounce, no diode)
	Release (at nominal voltage)		Max. 10ms (without bounce, no diode)
Insulation	Resistive (initial)		Min. 1,000MOhm at 500VDC
	Dielectric strength	Open contacts	750VAC (50/60Hz) 1 min.
		Contacts to coil	4,000VAC (50/60Hz) 1 min.
	Surge strength	Contacts to coil	10,000V / 1.2 x 50μ standard wave
	Clearance		6mm
	Creepage		6mm
Other	Vibration resistance	Misoperation	10 to 55 to 10 Hz single amplitude 0.75mm
		Endurance	10 to 55 to 10 Hz single amplitude 0.75mm
	Shock	Misoperation	Min. 100m/s <sup>2</sup> (11±1ms)
		Endurance	Min. 1,000m/s <sup>2</sup> (6±1ms)
	Weight		Approximately 4g
	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.

## ■ COIL RATING

200mW type

Coil Code	Rated coil voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC)*	Must Release Voltage (VDC)*	Rated Power (mW)
4.5	4.5	101	2.88	0.45	200
005	5	125	3.2	0.5	
006	6	180	3.84	0.6	
009	9	405	5.76	0.9	
012	12	720	7.68	1.2	
018	18	1,620	11.52	1.8	
024	24	2,880	15.36	2.4	

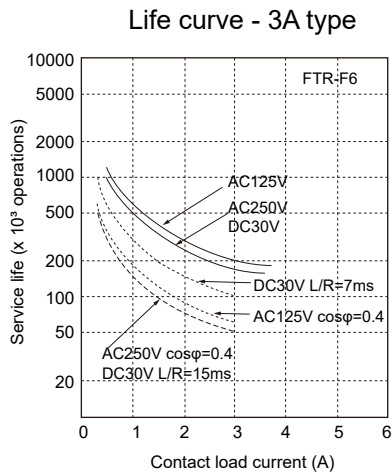
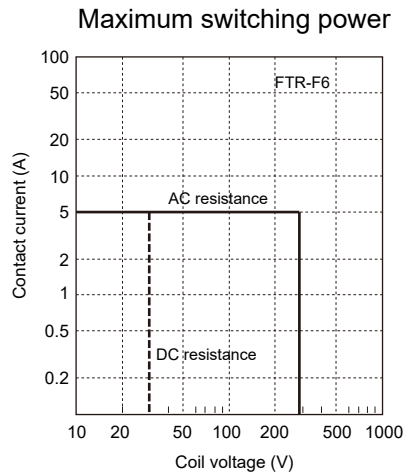
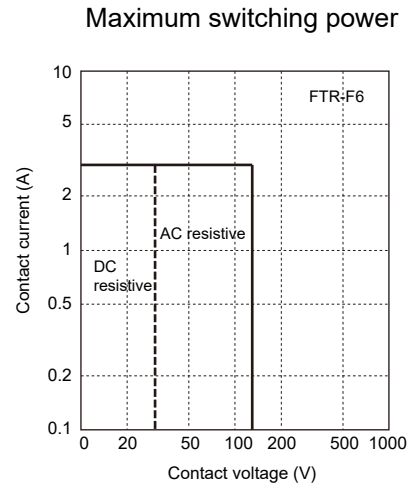
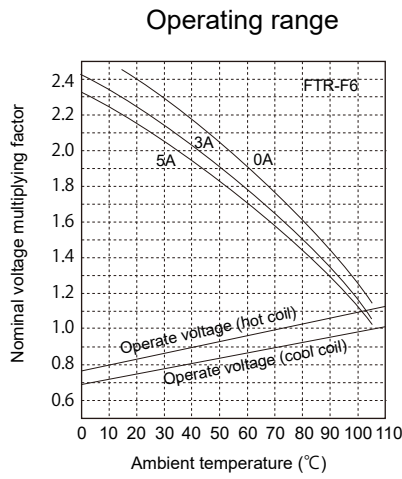
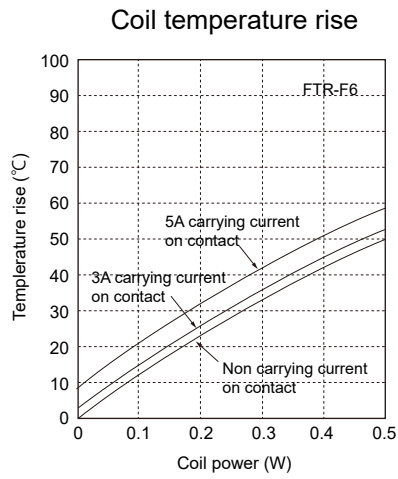
Note 1: All values given in the coil table(s) are valid at 20°C ambient temperature, at zero contact current, without pre-energizing and are specified at pulse wave voltage.

Note 2: When applying a higher than rated coil voltage, please refer to the “coil temperature rise” and “operating range”. Reference graphs for the effects on the relay operating behaviour.

## ■ SAFETY STANDARDS

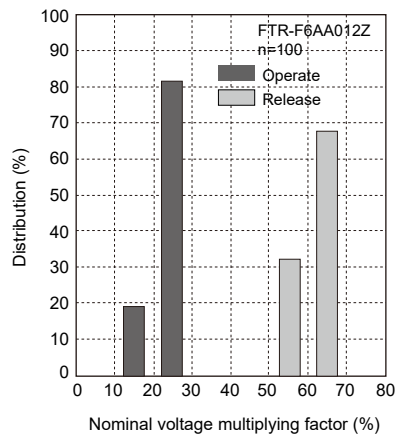
Type	Compliance	Contact rating
UL	UL 508	Flammability: UL 94-V0 (plastics)
	E63614	5A, 30VDC/277VAC (resistive) 3A, 30VDC/277VAC (resistive)
CSA	C22.2 No.14	1/10 HP, 125VAC 1/8 HP, 277VAC
	LR 40304	Pilot duty: D300

## CHARACTERISTIC DATA (Reference)

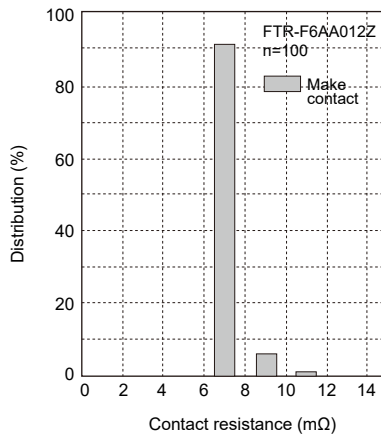


## REFERENCE DATA

Distribution of operate/release voltage



Distribution of contact resistance

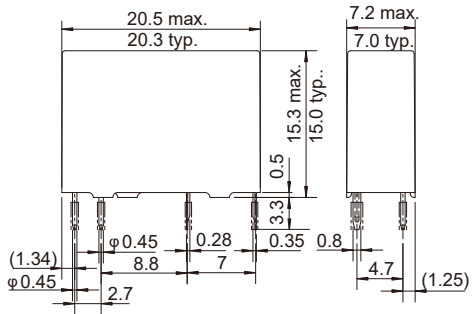


# FTR-F6 SERIES

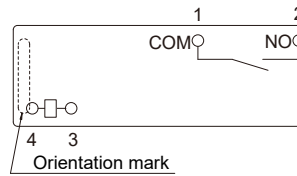
## ■ DIMENSIONS

Standard type

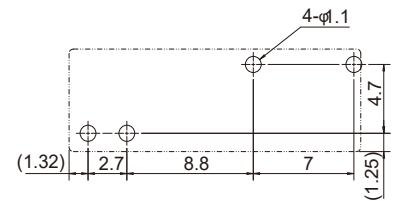
### ● Dimensions



### ● Schematics (BOTTOM VIEW)



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



Unit: mm

## CAUTIONS

- All values mentioned in this datasheet are provided under ideal conditions. Please perform the confirmation test before actual use.
- Reflow soldering is prohibited.
- Do not use relays in the atmosphere with sulfide gas, chloride gas or nitric oxide. Contact resistance may increase.
- Do not use silicon or silicon-containing product or materials near relays. It may cause contact failure.

## GENERAL INFORMATION

### 1. ROHS Compliance

- All relays produced by FCL Components are compliant with RoHS directive 2011/65/EU, including commission delegated directive 2015/863.

### 2. Recommended lead free solder condition

- 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.
- Recommended solder for assembly: Sn-3.0Ag-0.5Cu.

#### Flow Solder Condition:

Pre-Heating: Maximum 120°C within 90 sec.

Soldering: Eip within 5 sec. at 255°C±5°C solder bath

Relay must be cooled by air immediately after soldering

#### Solder by Soldering Iron:

Soldering Iron: 30-60W

Temperature: Maximum 340-360°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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