

POWER RELAY

16A/TV-5 RATED COMPACT TYPE

FTR-K2 Series

RoHS compliant

■ FEATURES

- HIGH DENSITY MOUNTING
Saves space by 26% compared to FTR-H1 type
- HIGH ISOLATION
Insulation distance: minimum 6mm between coil and contact (conforms to IEC 60065)
Dielectric strength: 4 kVAC
Surge strength: 10 kV
- HIGH NOISE RESISTANCE
Uses card separation for high noise resistance between coil and contact
- HEAT RESISTANCE, FLAMMABILITY 94V-0
- CADMIUM FREE CONTACT FOR ECO-PROGRAM
- SAFTY STANDARDS
UL, CSA, VDE, SEMKO approved
UL, CSA TV-5 rating approved, TV-8 rating available
- RoHS compliant since date code: 0437L2
Please see page 7 for more information



■ ORDERING INFORMATION

[Example] FTR-K2 A K 012 T -TH
 (a) (b) (c) (d) (e) (f)

(a)	Series Name	FTR-K2: FTR-K2 Series (16A)		
(b)	Contact Arrangement	A	: 1 form A	
(c)	Coil Type	K	: Standard type (530 mW)	
(d)	Nominal Voltage	005	: 5 VDC, 006 : 6VDC, 009 : 9VDC	
		012	: 12VDC, 024 : 24VDC, 048 : 48VDC	
(e)	Contact Material	T	: Silver alloy (TV-5 rating approved)	
(f)	Custom Designation	TH: TV-8 rating (Special number for customized products)		

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

E.g.: Ordering code: FTR-K2AK012T

Actual marking: K2AK012T

FTR-K2 SERIES

■ SAFETY STANDARD AND FILE NUMBERS

UL508 (File No. E63615)

C22.2 No.1 and No. 14 (File No. LR40304)

VDE 0435, 0860

	Nominal voltage	Contact rating
FTR-K2	5 to 48 VDC	TV-5: 120 VAC 1/3 HP: 125VAC/1HP:277VAC 10A: 277VAC 16A: 30VDC/125VAC resistive Pilot duty: C300

FTR-K2 SERIES

■ SPECIFICATIONS

		FTR-K2 Series	
		Standard	
Contact	Arrangement	1 Form A (SPST-NO)	
	Material	Silver Alloy	
	Resistance (initial)	Maximum 100mΩ (at 1A 6VDC)	
	Rating (resistive)	250VAC/(125VAC) / DC30VDC, 16A	
	Maximum Carrying Current	16A	
	Maximum Switching Rating	4000VA/480W	
	Maximum Switching Voltage	400VAC/300VDC	
	Maximum Switching Current	16A	
	Minimum Switching Load *1	100 mA, 5VDC	
	Maximum Inrush Current	78A, 120VAC (at lamp load)	
Coil	Nominal Power (at 20° C)	530mW	
	Operate Power (at 20° C)	260mW	
	Operating Temperature	-40° C to +70° C (no frost)	
Time Value	Operate Time (at nominal voltage)	Maximum 15ms	
	Release Time (at nominal voltage)	Maximum 5ms	
Insulation	Resistance (at 500VDC)	Minimum 1,000 MΩ	
	Dielectric Strength	Between open contacts	1,000 VAC 1 minute
		Between coil and contacts	4,000 VAC 1 minute
	Surge Strength	10,000V (at 1.2 x 50 μs)	
Life	Mechanical	2 x 10 ⁶ operations minimum	
	Electrical	Contact Rating	100 x 10 ³ operations minimum
		Lamp Load	25 x 10 ³ operations minimum
Other	Vibration Resistance	Misoperation	10-55 Hz (double amplitude of 1.5mm)
		Endurance	10-55 Hz (double amplitude of 1.5mm)
	Shock Resistance	Misoperation	200m/s ² (11±1ms)
		Endurance	1,000m/s ² (6±1ms)
	Weight	Approximately 12g	

*1 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-K2 SERIES

COIL DATA CHART

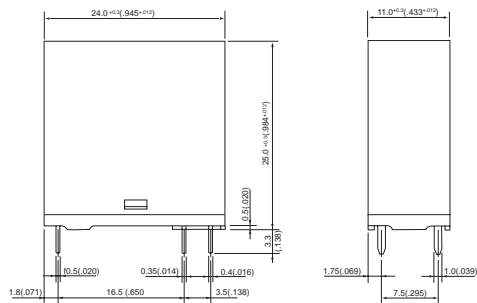
Standard type

MODEL	Nominal Voltage	Coil Resistance (± 10%)	Must Operate Voltage	Must Release Voltage
FTR-K2 Series				
FTR-K2AK005T	5VDC	47Ω	3.5VDC	0.25VDC
FTR-K2AK006T	6VDC	68Ω	4.2VDC	0.3VDC
FTR-K2AK009T	9VDC	155Ω	6.3VDC	0.45VDC
FTR-K2AK012T	12VDC	270Ω	8.4VDC	0.6VDC
FTR-K2AK018T	18VDC	610Ω	12.6VDC	0.9VDC
FTR-K2AK024T	24VDC	1,100Ω	16.8VDC	1.2VDC
FTR-K2AK048T	48VDC	4,400Ω	33.6VDC	2.4VDC

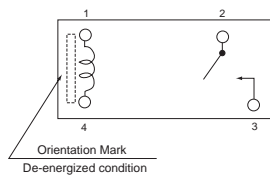
Note: All values in the table are measured at 20°C.

DIMENSIONS

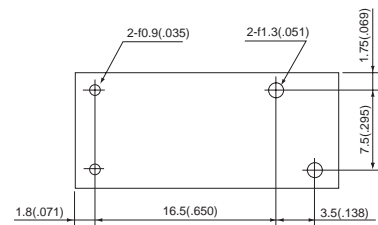
● Dimensions



● Schematics (BOTTOM VIEW)



● PC board mounting hole layout (BOTTOM VIEW)



Unit: mm (in.)

RoHS Compliance and Lead Free Relay Information

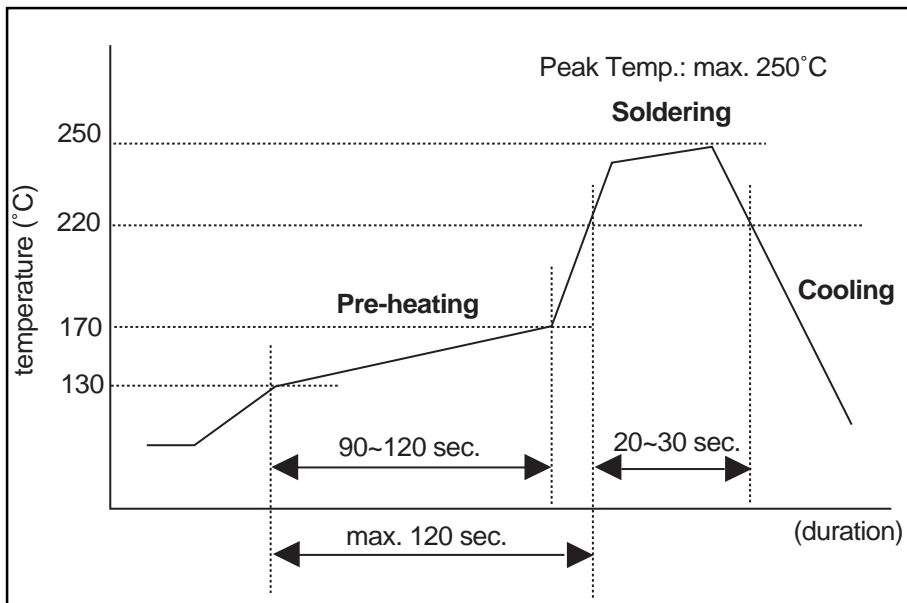
1. General Information

- Relays produced after the specific date code that is indicated on each data sheet are lead-free now. Most of our signal and power relays are lead-free. Please refer to Lead-Free Status Info. (<http://www.fcai.fujitsu.com/pdf/LeadFreeLetter.pdf>)
- Lead free solder paste currently used in relays is Sn-3.0Ag-0.5Cu. From February 2005 forward Sn-3.0Cu-Ni will be used for FTRB3 and FTR-B4 series relays.
- Most signal and some power relays also comply with RoHS. Please refer to individual data sheets. Relays that are RoHS compliant do not contain the 6 hazardous materials that are restricted by RoHS directive (lead, mercury, cadmium, chromium IV, PBB, PBDE).
- It has been verified that using lead-free relays in lead 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 leaded relay inventory exists.

2. Recommended Lead Free Solder Profile

- Recommended solder paste Sn-3.0Ag-0.5Cu and Sn-3.0 Cu-Ni (only FTR-B3 and FTR-B4 from February 2005)

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 standard is not applicable to electromechanical relays.

4. Tin Whisker

- SnAgCu solder is known as low risk of tin whisker. No considerable length whisker was found by our in-house test.

5. Solid State Relays

- Each lead terminal will be changed from solder plating to Sn plating and Nickel plating. A layer of Nickel plating is between the terminal and the Sn plating to avoid whisker.

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