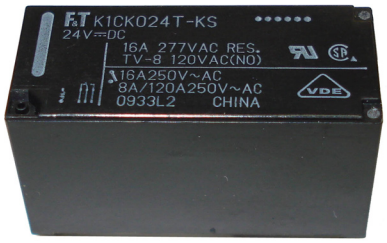
FUJITSU

POWER RELAY
1 POLE - 16A / Inrush 120A relay
FTR-K1-KS Series

■ FEATURES

- 1 pole 16A, 1 form A or 1 form C
- Peak inrush current 120A / TV-8
- Coil sensitive 400mW
- High insulation in small package (between coil and contacts
  - Insulation distance: 10mm min.
  - Dielectric strength: 5,000VAC
  - Surge strength: 10,000V
- UL1446 Class F coil insulation system
- Cadmium-free contacts for eco-program
- RoHS compliant

Please see page 5 for more information



■ PARTNUMBER INFORMATION

[Example] FTR-K1 (a) C (b) K (c) 005 (d) T (e) - KS (f)

(a)	Relay type	FTR-K1: FTR-K1 Series
(b)	Contact configuration	A : 1 form A C : 1 form C
(c)	Coil type	K : Standard (400mW)
(d)	Coil rated voltage	005 : 5.....48 VDC Coil rating table at page 3
(e)	Contact material / TV type	T : $AgSnO_2$ / TV-rating
(f)	Inrush type	KS : Inrush 120A type

Actual marking does not carry the type name : "FTR"
E.g.: Ordering code: FTR-K1CK005T-KS Actual marking: K1CK005T-KS

■ SPECIFICATION

Item			FTR-K1CK ( ) T-KS	FTR-K1AK ( )T-KS
Contact Data	Configuration		1 form C	1 form A
	Material		$AgSnO_2$	
	Resistance (initial)		≤ 100mOhm at 1A, 6VDC	
	Contact rating		16A, 250VAC	
	Max. carrying current		20A	
	Max. switching voltage		440VAC	
	Max. switching power		4,000VA	
	Min. switching load *		100 mA, 5VDC	
	Max. inrush current		120A, 250VAC (N.O. contact)	120A, 250VAC
Life	Mechanical		20 x 10^6 operations minimum	
	Electrical	Resistive load	30 x 10^3 operations min.	100 x 10^3 operations min.
		Lamp load (TV-8)	25 x 10^3 operations min. (N.O. contact)	25 x 10^3 operations min.
Coil Data	Operating temperature range		-40 °C to +85 °C (no frost)	
Timing Data	Operate (at nominal voltage)		≤ 15ms (no bounce included)	
	Release (at nominal voltage)		≤ 5ms (no diode, no bounce included)	
Insulation	Resistance (initial)		≥ 1,000MOhm at 500VDC	
	Dielectric strength	Open contacts	1,000VAC, 1min.	
		Contacts to coil	5,000VAC, 1min.	
	Surge strength	Coil to contacts	10,000V / 1.2 x 50μs standard wave	
Other	Vibration resistance	Misoperation ≥1μs	10 to 55Hz double amplitude 0.7mm	
		Endurance	10 to 55Hz double amplitude 1.5mm	
	Shock	Misoperation ≥1μs	Min. 100m/s^2 (11±1ms)	
		Endurance	Min. 1,000m/s^2 (6±1ms)	
	Weight		Approximately 13g	

* 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 contions and expected reliability levels.

■ COIL RATING

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC) *	Must Release Voltage (VDC) *	Rated Power (mW)
005	5	62	3.5	0.5	400
006	6	90	4.2	0.6	
009	9	202	6.3	0.9	
012	12	360	8.4	1.2	
018	18	810	12.6	1.8	
022	22	1,210	15.4	2.2	
024	24	1,440	16.8	2.4	
028	28	1,960	19.6	2.8	
048	48	5,360	33.6	4.8	430

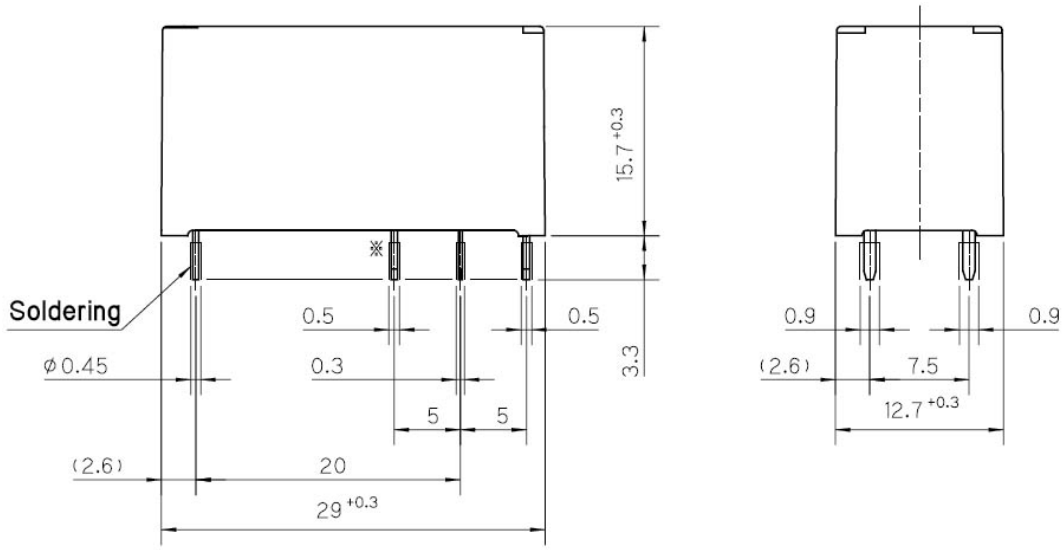
Note: All values in the table are valid for 20°C and zero contact current.
* Specified operate values are valid for pulse wave voltage.

■ SAFETY STANDARDS

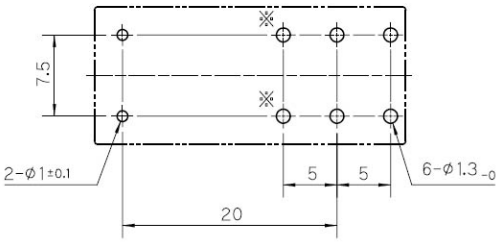
Type	Compliance	Contact rating
UL	UL 508	Flammability: UL 94-V0 (plastics)
		16A, 277VAC resistive TV-8, 120VAC (NO)
CSA	C22.2 No. 14	
VDE	0435, 0631, 0700, 0860	16A, 250VAC, cosØ=1, T85 8/120A, 250VAC, T85 (NO)

■ DIMENSIONS

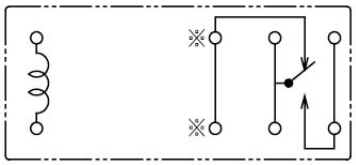
- **Dimensions**



- PC board mounting hole layout



- Schematics
  (BOTTOM VIEW)



Unit: mm

Note: In case of 1 form A, terminals marked ※ are omitted.

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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