FUJITSU

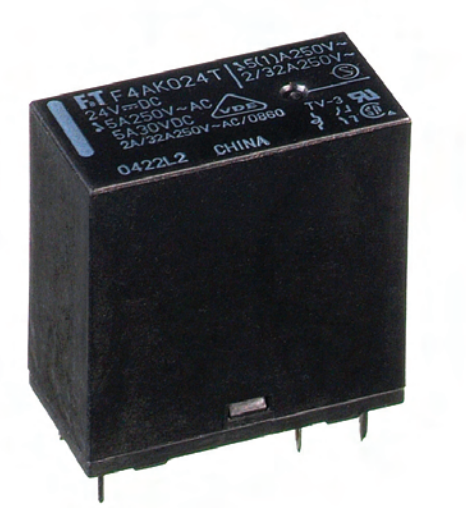
POWER RELAY

2 POLE 5A/TV-3 RATED COMPACT TYPE

FTR-F4 Series

■ FEATURES

- Small high density type relay 288mm2 save 24% compared to VB
- UL/CSA/VDE/SEMKO/CQC approved
- Insulation distance: minimum 6 mm between coil and contacts IEC60065
  Dielectric strength: 4 KV
  Surge strength: 10 KV
- Card separation system for high noise resistance between coil and contacts
- Flux proof type, RTII
- RoHS compliant
  Please see page 6 for more information



■ APPLICATIONS

- CRT monitor EMI protection
- Audio system speaker protection

■ PARTNUMBER INFORMATION

	FTR-F4	A	K	012	T	-	**
[Example]	(a)	(b)	(c)	(d)	(e)		(f)

(a)	Relay type	FTR-F4 : FTR-F4 Series	
(b)	Contact configuration	A	: 2 form A (DPST)
(c)	Coil type	K	: Standard type (530mW)
(d)	Coil rated voltage	012	: 5....48VDC Coil rating table at page 3
(e)	Contact material / TV type	T	: TV 3; $AgSnO_2$
(f)	Special type	**	: Customer specific type designation

Actual marking does not carry the type name : "FTR"
E.g.: Ordering code: FTR-F4AK012T Actual marking: F4AK012T

■ SPECIFICATION

Item			FTR-F4
Contact Data	Configuration		2 form A (DPST-NO)
	Construction		Single
	Material		Silver alloy ($AgSnO_2$)
	Resistance (initial)		Max. 100 mOhm at 1 A, 6 VDC
	Contact rating (resistive)		5A, 250VAC, 30VDC
	Max. carrying current		5A
	Max. switching voltage		400 VAC / 300VDC
	Max. switching power		1,250 VA / 150W
	Max. switching current		5A
	Min. switching load *		100mA, 5 VDC
	Max. inrush current		120VAC, 51A (TV-3)
Life	Mechanical		Min. 2 x 10^6 operations
	Electrical	Contact rating	Min. 100 x 10^3 operations
		Lamp load (TV-3)	Min. 25 x 10^3 operations
Coil Data	Rated power		530mW
	Operate power		300mW
	Operating temperature range		-40 °C to +70 °C (no frost)
Timing Data	Operate (at nominal voltage)		Max. 15ms (without bounce)
	Release (at nominal voltage)		Max. 5ms (no diode)
Insulation	Resistance (initial)		Min. 1,000MOhm at 500VDC
	Dielectric strength	Open contacts	1,000VAC (50/60Hz) 1min
		Contacts to coil	3,000VAC (50/60Hz) 1min
		Adjacent contacts	4,000VAC (50/60Hz) 1min.
	Surge strength	Coil to contacts	10,000V/ 1.2 x 50μs standard wave
Other	Vibration Resistance	Misoperation	10 to 55Hz double amplitude 1.5mm
		Endurance	10 to 55Hz double amplitude 1.5mm
	Shock	Misoperation	200m/s^2 (11±1ms)
		Endurance	1,000m/s^2 (6±1ms)
	Weight		Approximately 12g
	Sealing		Flux proof, RTII

* 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	47	3.75	0.25	530
006	6	68	4.5	0.3	
009	9	155	6.75	0.45	
012	12	270	9.0	0.6	
024	24	1,100	18.0	1.2	
048	48	4,400	36.0	2.4	

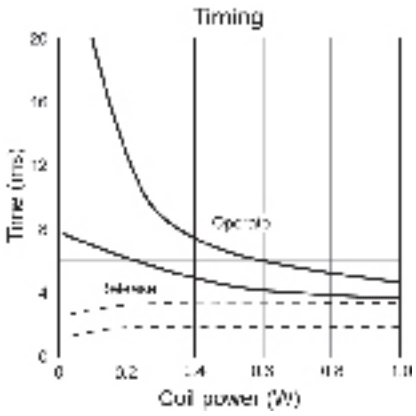
Note: All values in the table are valid for 20°C and zero contact current.
* Specified operate values are valid for pulse wave voltage.

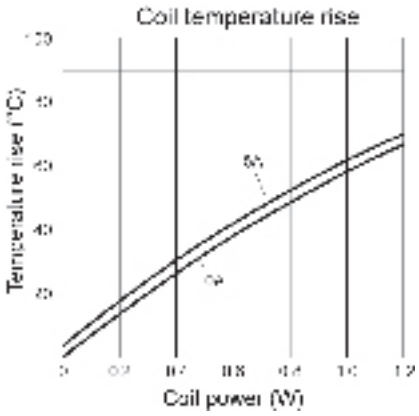
■ SAFETY STANDARDS

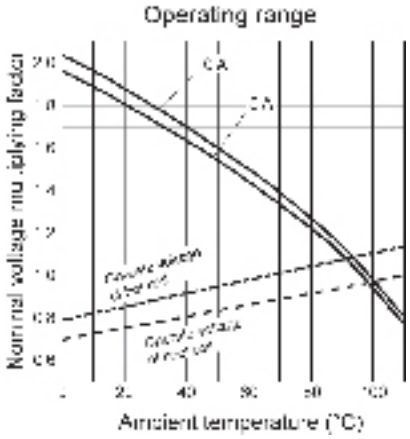
Type	Compliance	Contact rating
UL	UL 508 E63614	Flammability: UL 94-V0 (plastics) 5A, 277VAC/30VDC (resistive) 1/6 HP, 125VAC 1/4 HP, 277VAC Pilot duty: C300 TV-3 120VAC
CSA	C22.2 No. 14 LR 40304	
VDE	0435, 0860 40015180	5A, 250VAC (cos φ 1) 50K 2A, 250VAC (cos φ 0.4) 100K 5A, 30VDC (0msec) 100K

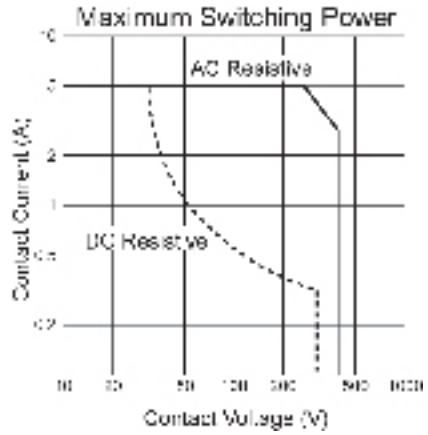
Complies with CQC, SEMKO

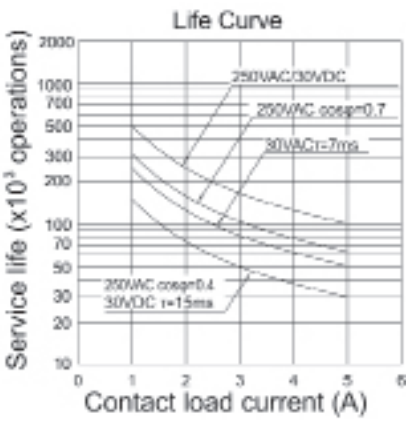
■ CHARACTERISTIC DATA



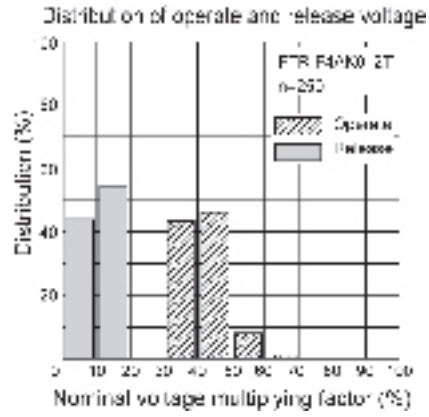


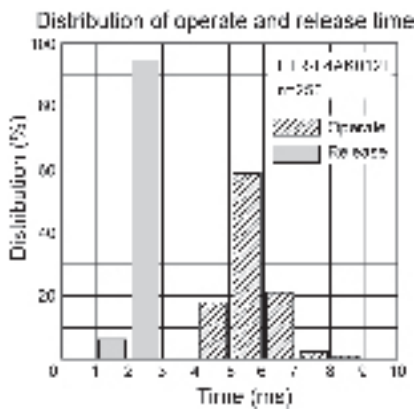


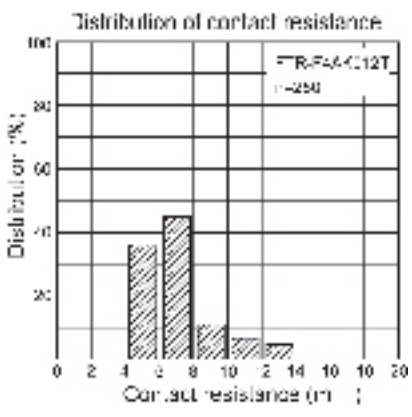


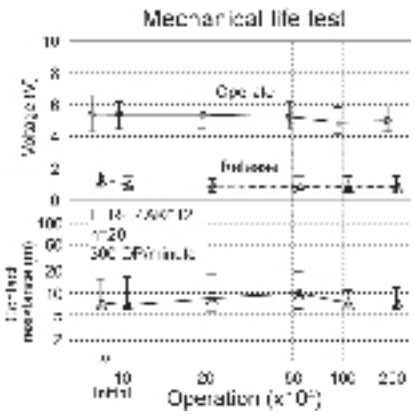


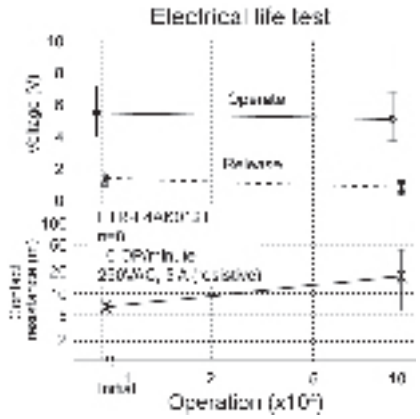
■ REFERENCE DATA

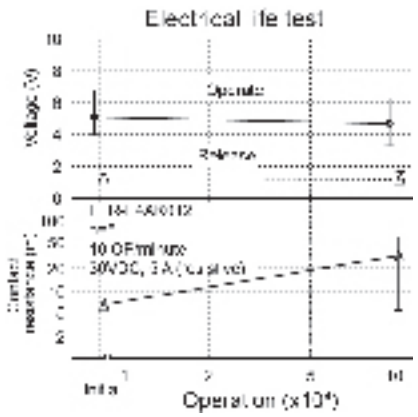








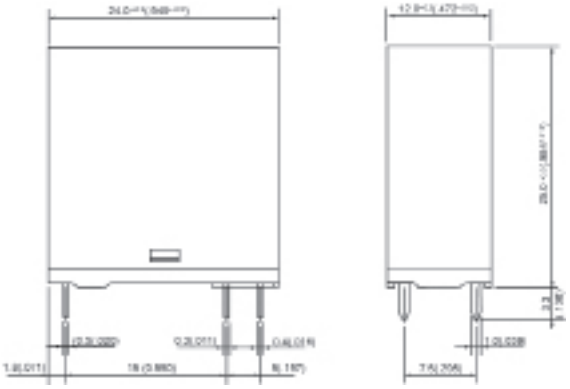




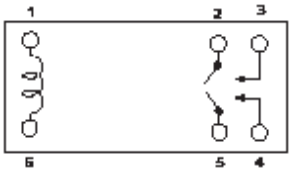
■ DIMENSIONS

- **Dimensions**

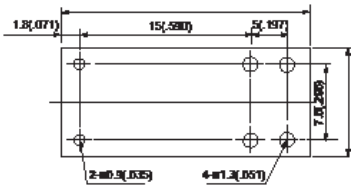
FTR-F4 type



- **Schematics**
(BOTTOM VIEW)



- **PC board mounting hole layout**
(BOTTOM VIEW)



Unit: mm (in.)

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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