Preliminary

New relay, production not started,
engineering samples available

FUJITSU

POWER RELAY
1 POLE - 10A changeover relay
FTR-F3 Series

■ FEATURES

- Low profile and space saving
  - Height: 15mm
  - Mounting space: 164mm^2
- High insulation
  - Insulation distance: 7mm between coil and contacts
  - Dielectric strength: 4,000VAC between coil and contacts
  - Surge strength: 10,000V between coil and contacts
- Plastic materials
  - UL94 flame class V-0
- Cadmium free relay
- Lead free relay
- Plastic sealed type
- RoHS compliant

Please see page 4 for more information

■ PARTNUMBER INFORMATION

[Example] FTR-F3 (a) C (b) A (c) 012 (d) E (e) - HC (f)

(a)	Relay type	FTR-F3	:FTR-F3-Series
(b)	Contact configuration	C	: 1 form C
(c)	Coil type (power)	A	: 360mW
(d)	Coil rated voltage	012	: 5.....24 VDC Coil rating table at page 3
(e)	Contact material	E	: Ag Alloy
(f)	Enclosure	HC HK	: Flux proof type : Sealed type

Actual marking does not carry the type name : "FTR"
E.g.: Ordering code: FTR-F3CA012E Actual marking: F3CA012E

■ SPECIFICATION

Item			FTR-F3	
			FTR-F3CA( )E-HC	FTR-F3CA( )E-HK
Contact Data	Configuration		1 form C (SPDT)	
	Construction		Single	
	Material		Ag Alloy	
	Resistance (initial)		Max. 100mOhm at 1A, 6VDC	
	Contact rating (resistive)		10A, 250VAC	
	Max. carrying current		10A	
	Max. switching voltage		277VAC	
	Max. switching power		2,500VAC	
	Min. switching load *		100 mA, 5VDC	
Life	Mechanical		Min. 20 x 10^6 operations	
	Electrical (at rated load)		Make: 50 x 10^3 operations Break: 10 x 10^3 operations	Make: 10 x 10^3 operations Break: 6 x 10^3 operations
Coil Data	Rated power (20 °C)		360mW	
	Operating temperature range		-40 °C to +85 °C (no frost)	
Timing Data	Operate (at nominal voltage)		Max. 10ms (without bounce)	
	Release (at nominal voltage)		Max. 10ms (without bounce)	
Insulation	Resistance (initial)		Min. 1,000MOhm at 500VDC	
	Dielectric strength	Open contacts	750VAC (50/60Hz) 1min	
		Contacts to coil	4,000VAC (50/60Hz) 1min	
	Surge strength	Contacts to coil	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	Min. 100m/s^2 (11±1ms)	
		Endurance	Min. 1,000m/s^2 (6±1ms)	
	Weight		Approximately 6g	
	Enclosure		Flux proof	Plastic sealed

* 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

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC) *	Must Release Voltage (VDC) *
005	5	69	3.75	0.5
006	6	100	4.5	0.6
009	9	225	6.75	0.9
012	12	400	9	1.2
018	18	900	13.5	1.8
024	24	1,600	18	2.4

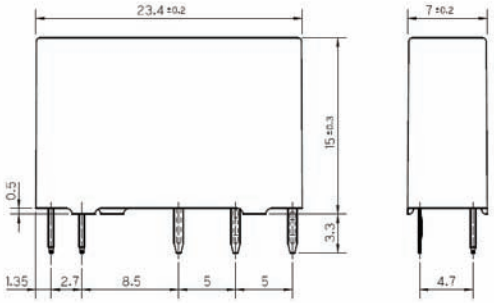
Note: All values in the tables are valid for 20°C and zero contact current.
* Specified operate values are valid for pulse wave voltage.

■ SAFETY STANDARDS (Plan)

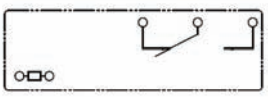
Type	**Contact rating**	
	FTR-F3CA( )E-HC	FTR-F3CA( )E-HK
UL	Flammability: UL 94-V0 (plastics)	
CSA	10A, 250VAC (resistive)	10A, 250VAC (resistive)
VDE		

■ DIMENSIONS

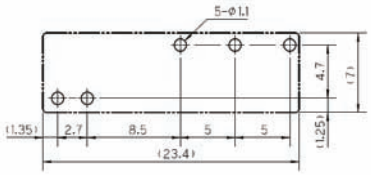
- **Dimensions**



- **Schematics**
(BOTTOM VIEW)



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



Unit: mm

RoHS Compliance and Lead Free Information

1. General Information

- All relays produced by Fujitsu Components are compliant with RoHS directive 2011/65/EU including amendments.
- Cadmium as used in electrical contacts is exempted from the RoHS directives.
  As per Annex III of directive 2011/65/EU.
- All relays are lead-free. Please refer to Lead-Free Status Info for older date codes at:
  http://www.fujitsu.com/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 Condition

- Recommended solder Sn-3.0Ag-0.5Cu.

Flow Solder Condition:

Pre-heating:	maximum 120˚C within 90 sec.
Soldering:	dip 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 Temperature:	30-60W maximum 350-360˚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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