

POWER RELAY

1 POLE - 10A Slim Type Relay

FTR-F3 Series

■ FEATURES

- High density mounting
Slim type with 7mm width and 142mm² 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
- RoHS compliant
Please see page 5 for more information



■ PARTNUMBER INFORMATION

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

(a)	Relay type	FTR-F3 :FTR-F3-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 table at page 3
(e)	Contact material	E : AgNi
(f)	Enclosure	HC : Flux proof type HK : Sealed type

Actual marking does not carry the type name : "FTR"
 E.g.: Ordering code: FTR-F3AA012E Actual marking: F3AA012E

■ SPECIFICATION

Item			FTR-F3		
			FTR-F3AA()E-HC	FTR-F3AA()E-HK	
Contact Data	Configuration		1 form A (SPST-NO)		
	Construction		Single		
	Material		AgNi		
	Resistance (initial)		Max. 100mOhm at 1A, 6VDC		
	Contact rating (resistive)		10A, 250VAC, 30VDC		
	Max. carrying current		10A		
	Max. switching voltage		277VAC, 30VDC		
	Max. switching power		2,500VA, 150W		
	Min. switching load *		100 mA, 5VDC		
Life	Mechanical		Min. 5 x 10 ⁶ operations		
	Electrical (at rated load)		Min. 50 x 10 ³ operations	Min. 10 x 10 ³ operations	
Coil Data	Rated power (20 °C)		200mW		
	Operate power		113mW		
	Operating temperature range		-40 °C to +85 °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	Resistance (initial)		Min. 1,000MOhm at 500VDC		
	Dielectric strength	Open con- tacts	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		
	Clearance		6mm		
	Creepage		6mm		
	EN61810-1, VDE0435	Voltage		250V	
		Pollution degree		2	
Material group		III			
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 4g		
	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

200mW type

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC) *	Must Release Voltage (VDC) *	Max. Coil Voltage (VDC)	Rated Power (mW)
005	5	125	3.75	0.5	12	200
006	6	180	4.5	0.6	14.4	
009	9	405	6.75	0.9	21.6	
012	12	720	9	1.2	28.8	
018	18	1,620	13.5	1.8	43.2	
024	24	2,880	18	2.4	57.6	

Note: All values in the tables are valid for 20°C and zero contact current.

* Specified operate values are valid for pulse wave voltage.

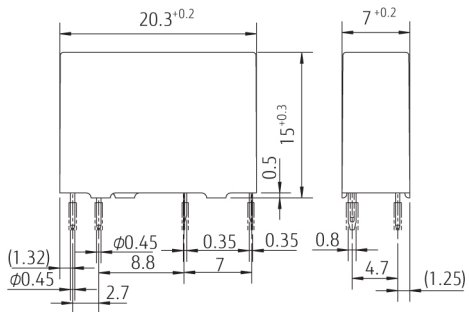
■ SAFETY STANDARDS (Plan)

Type	Compliance	Contact rating	
		FTR-F3AA()E-HC	FTR-F3AA()E-HK
UL	UL 508 E63614	Flammability: UL 94-V0 (plastics)	
CSA	C22.2 No. 14 LR 40304	10A, 30 VDC/ 277 VAC (resistive)	10A, 30 VDC/ 277 VAC (resistive)
VDE	0435 40015024	10A, 250 VAC, $\cos\phi = 1$, 50×10^3 , 85°C 8A, 30 VDC, $\tau = 0\text{msec}$, 50×10^3 , 105°C	10A, 250 VAC, $\cos\phi = 1$, 10×10^3 , 85°C 8A, 30 VDC, $\tau = 0\text{msec}$, 50×10^3 , 105°C

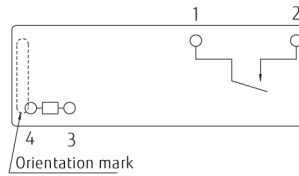
■ DIMENSIONS

Standard type

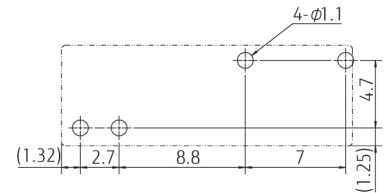
● Dimensions



● 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 30-60W
Temperature: 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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