

# POWER RELAY

## 2 POLE - 5A - 1.5mm contact gap

### FTR-F4G Series

#### ■ FEATURES

- 2 Pole, 5A
  - 2 Form A
  - Contact gap 1.5mm
  - Sealed type available
  - High insulation in small package (between coil and contact)
    - Insulation distance: min 8.0mm
    - Dielectric strength: 5,000VAC
    - Surge strength: 10,000V
  - Flammability UL94V-0 (plastics)
  - RoHS compliant
- Features cadmium-free contacts  
Please see page 5 for more information



#### ■ PARTNUMBER INFORMATION

[Example]      FTR-F4G    A    K    012    T    -    KW  
                          (a)    (b)    (c)    (d)    (e)    (f)

(a)	Relay type	FTR-F4G : FTR-F4G-Series	
(b)	Contact configuration	A	: 2 form A
(c)	Coil type	K	: Standard type (0.8W)
(d)	Coil rated voltage	012	: 3.....60 VDC Coil rating table at page 3
(e)	Contact material / TV rating	T	: Silver alloy / TV-3 rating
(f)	Optional type	Nil KW	: Flux free type : Plastic sealed type

Actual marking does not carry the type name : "FTR"  
 E.g.: Ordering code: FTR-F4GAK012T    Actual marking: F4GAK012T

# FTR-F4G SERIES

## ■ SPECIFICATION

Item			FTR-F4G flux free type	FTR-F4G-KW plastic sealed type
Contact Data	Configuration		2 form A	
	Material		Silver alloy	
	Resistance (initial)		Max. 100mΩ at 1A, 6VDC	
	Contact rating		5A, 250VAC (resistive)	
	Max. carrying current		5A	
	Max. switching current		5A	
	Max. switching voltage		400VAC	
	Max. switching power		1,250VA	
	Min. switching load (reference)		100 mA, 5VDC	
Life	Mechanical		Min. 500 x 10 <sup>3</sup> operations	
	Electrical (resistive)		5A, 250VAC Min. 100 x 10 <sup>3</sup> operations	5A, 250VAC Min. 20 x 10 <sup>3</sup> operations
				250VAC, 250W Min. 100 x 10 <sup>3</sup> operations
				110VAC, 250W Min. 100 x 10 <sup>3</sup> operations
Coil Data	Rated power (at 20 °C)		Approximately 0.8W	
	Operating temperature range		-40 °C to +70 °C (no frost)	
Timing Data	Operate (at nominal voltage)		Max. 12ms (without bounce)	
	Release (at nominal voltage)		Max. 5ms (without bounce)	
Insulation	Contact gap (initial)		Minimum 1.5mm	
	Resistance (initial)		Min. 1,000MΩ at 500VDC	
	Dielectric strength	Open contacts	1,500VAC, 1min.	
		Contacts sets	3,000VAC, 1min.	
		Coil and contacts	5,000VAC, 1min.	
	Surge strength	Coil to contacts	10,000V / 1.2 x 50μs standard wave	
Other	Vibration resistance	Misoperation	10 to 55Hz double amplitude 1.5 mm	
		Endurance	10 to 55Hz double amplitude 1.5 mm	
	Shock resistance	Misoperation	Min. 100m/s <sup>2</sup> (11 ± 1ms)	
		Endurance	Min. 1,000m/s <sup>2</sup> (6 ± 1ms)	
	Weight		Approximately 18 g	

## ■ COIL RATING

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC) *	Must Release Voltage (VDC) *	Rated Power (W)
003	3	11.3	2.1	0.15	Approx. 0.8
005	5	31	3.5	0.25	
006	6	45	4.2	0.3	
009	9	101	6.3	0.45	
012	12	180	8.4	0.6	
018	18	405	12.6	0.9	
024	24	720	16.8	1.2	
048	48	2,880	33.6	2.4	
060	60	4,500	42.0	6.0	

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

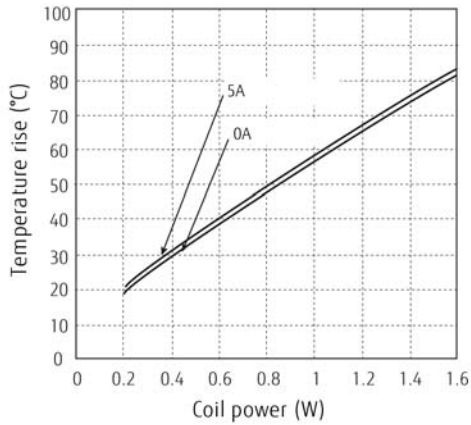
\* Specified operate values are valid for pulse wave voltage.

## ■ SAFETY STANDARDS

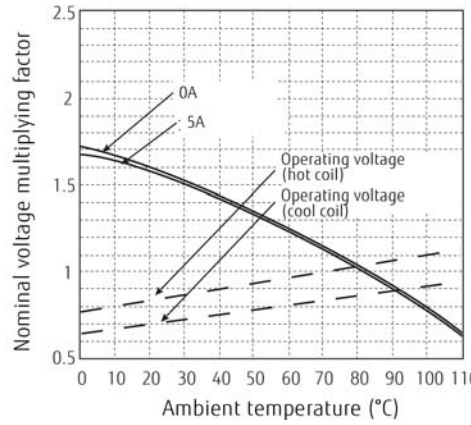
Type	Compliance	Contact rating
UL	UL 508	5A, 277VAC, resistive TV-3, 125VAC
	C22.2 No.14 (cULus)	
TUV	IEC/EN61810-1 EN60730-1 EN60335-1 EN60950-1 EN60065	5A, 250VAC (cosφ=1) 70°C 3 / 51A, 250VAC, 70°C

## ■ CHARACTERISTIC DATA

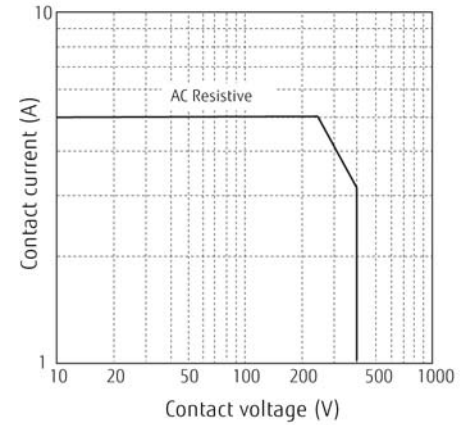
Coil temperature rise



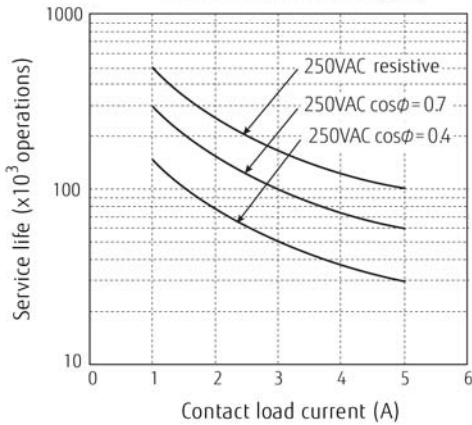
Operating range



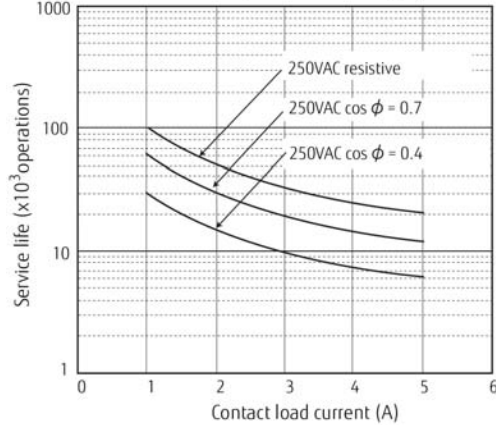
Maximum switching power



Life curve (Flux free type)

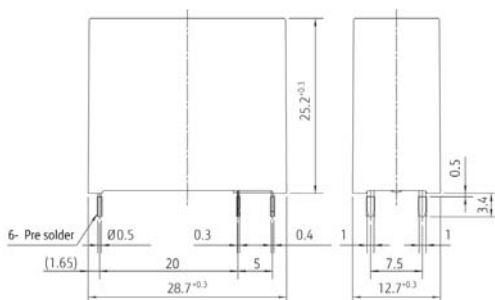


Life curve (Plastic sealed type)

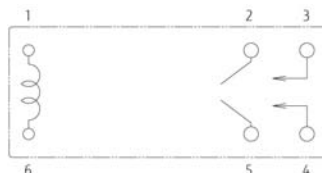


## ■ DIMENSIONS Unit: mm

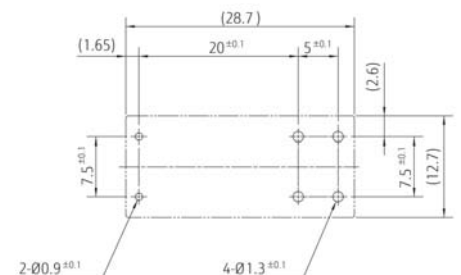
### ● Dimensions



### ● Schematics (BOTTOM VIEW)



### ● PC board mounting hole layout (BOTTOM VIEW)



## 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.

## Fujitsu Components International Headquarter Offices

### Japan

Fujitsu Component Limited  
Gotanda-Chuo Building  
3-5, Higashigotanda 2-chome, Shinagawa-ku  
Tokyo 141, Japan  
Tel: (81-3) 5449-7010  
Fax: (81-3) 5449-2626  
Email: [promothq@ft.ed.fujitsu.com](mailto:promothq@ft.ed.fujitsu.com)  
Web: [www.fcl.fujitsu.com](http://www.fcl.fujitsu.com)

### North and South America

Fujitsu Components America, Inc.  
250 E. Caribbean Drive  
Sunnyvale, CA 94089 U.S.A.  
Tel: (1-408) 745-4900  
Fax: (1-408) 745-4970  
Email: [components@us.fujitsu.com](mailto:components@us.fujitsu.com)  
Web: <http://us.fujitsu.com/components>

### Europe

Fujitsu Components Europe B.V.  
Diamantlaan 25  
2132 WV Hoofddorp  
Netherlands  
Tel: (31-23) 5560910  
Fax: (31-23) 5560950  
Email: [info@fceu.fujitsu.com](mailto:info@fceu.fujitsu.com)  
Web: [emea.fujitsu.com/components/](http://emea.fujitsu.com/components/)

### Asia Pacific

Fujitsu Components Asia Ltd.  
102E Pasir Panjang Road  
#01-01 Citilink Warehouse Complex  
Singapore 118529  
Tel: (65) 6375-8560  
Fax: (65) 6273-3021  
Email: [fcsl@fcsl.fujitsu.com](mailto:fcsl@fcsl.fujitsu.com)  
Web: <http://www.fujitsu.com/sg/services/micro/components/>

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