

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 : Flux free type KW : 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 ³ operations
	Electrical (resistive)	5A, 250VAC Min. 100 x 10 ³ operations	5A, 250VAC Min. 20 x 10 ³ operations
			250VAC, 250W Min. 100 x 10 ³ operations
			110VAC, 250W Min. 100 x 10 ³ 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 ² (11 ± 1ms)
		Endurance	Min. 1,000m/s ² (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.

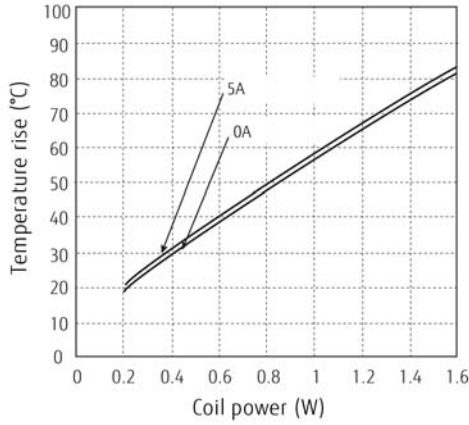
* Specified operate values are valid for pulse wave voltage.

■ SAFETY STANDARDS

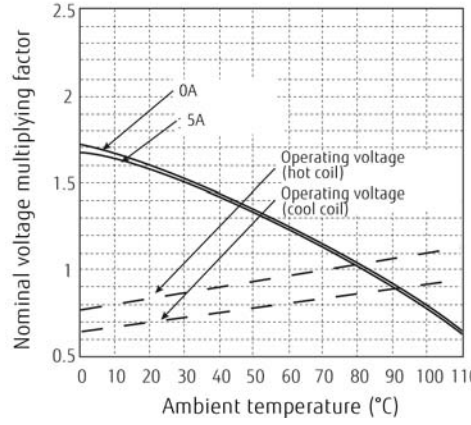
Type	Compliance	Contact rating
UL	UL 508	5A, 277VAC, resistive TV-3, 125VAC
	C22.2 No.14 (cULus)	
TUV	IEC/EN61810-1 EN60730-1 EN60335-1 EN60950-1 EN60065	5A, 250VAC ($\cos\phi=1$) 70°C 3 / 51A, 250VAC, 70°C

CHARACTERISTIC DATA

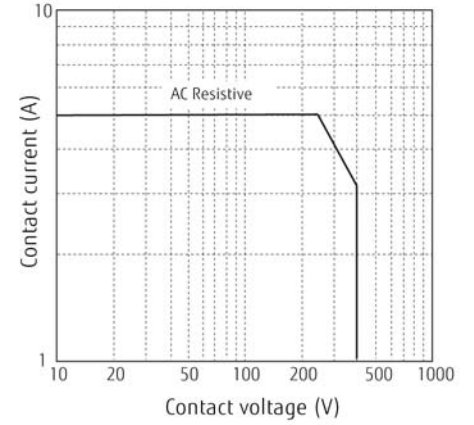
Coil temperature rise



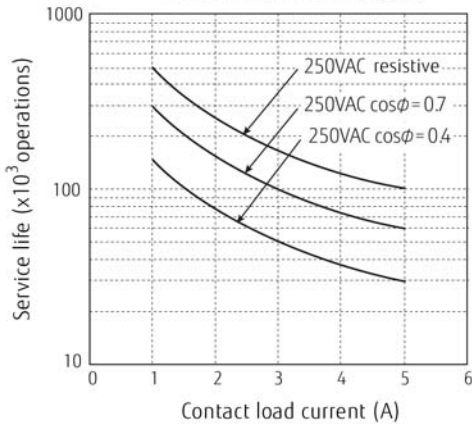
Operating range



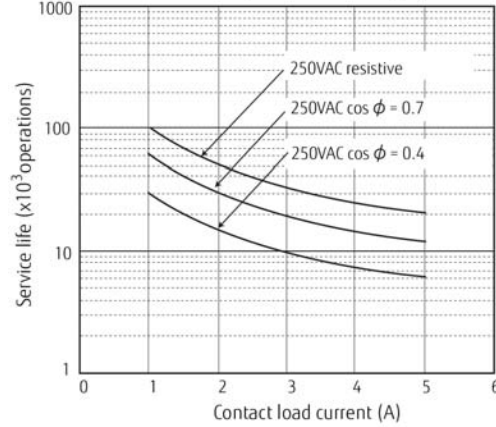
Maximum switching power



Life curve (Flux free type)

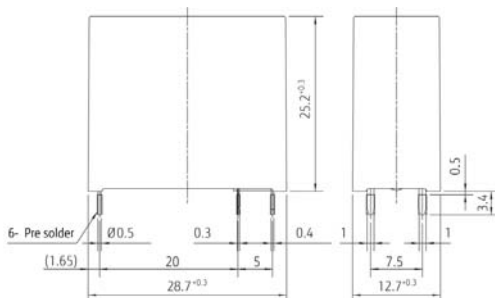


Life curve (Plastic sealed type)

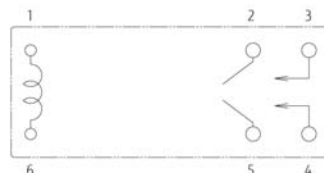


DIMENSIONS Unit: mm

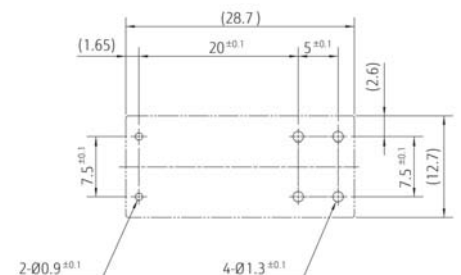
Dimensions



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
Web: 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
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
Web: 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: fcal@fcal.fujitsu.com
Web: <http://www.fujitsu.com/sg/services/micro/components/>

©2011 Fujitsu Components Europe B.V. All rights reserved. All trademarks or registered trademarks are the property of their respective owners.

The contents, data and information in this datasheet are provided by Fujitsu Component Ltd. as a service only to its user and only for general information purposes.

The use of the contents, data and information provided in this datasheet is at the users' own risk.

Fujitsu has assembled this datasheet with care and will endeavor to keep the contents, data and information correct, accurate, comprehensive, complete and up to date.

Fujitsu Components Europe B.V. and affiliated companies do however not accept any responsibility or liability on their behalf, nor on behalf of its employees, for any loss or damage, direct, indirect or consequential, with respect to this datasheet, its contents, data, and information and related graphics and the correctness, reliability, accuracy, comprehensiveness, usefulness, availability and completeness thereof.

Nor do Fujitsu Components Europe B.V. and affiliated companies accept on their behalf, nor on behalf of its employees, any responsibility or liability for any representation or warrant of any kind, express or implied, including warranties of any kind for merchantability or fitness for particular use, with respect to these datasheets, its contents, data, information and related graphics and the correctness, reliability, accuracy, comprehensiveness, usefulness, availability and completeness thereof. Rev. April 15, 2011