FUJITSU

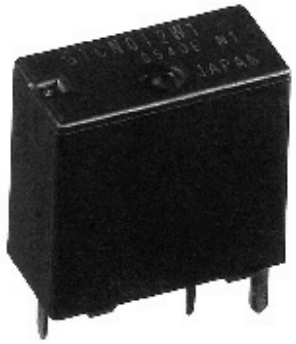
COMPACT POWER RELAY

1 POLE - 25A (For Automotive Applications)

FTR-G1 Series

■ FEATURES

- Compact for high density packaging
- High contact capacity with proven contact material (min. 100,000 operations, 14V, 25A)
- Coil power savings (640mW nominal achived with state-of-the-art magnetic analysis/design)
- Ease of PCB layout (all terminals on perimeter, coil and contact terminals separated)
- Lower noise (57dB average at 5cm)
- RoHS compliant
  Please see page 5 for more information



■ APPLICATIONS

- Power window
- Door lock
- Tilt steering
- Sunroof
- Power seat
- Wiper/IWW
- Retractable antenna

■ PARTNUMBER INFORMATION

	FTR-G1	C	N	010	W1
[Example]	(a)	(b)	(c)	(d)	(e)

(a)	Relay type	FTR-G1: FTR-G1 Series	
(b)	Contact configuration	C	: 1 form C
(c)	Contact gap	N	: 0.25mm
(d)	Coil rated voltage	010	: 9....12VDC Coil rating table at page 3
(e)	Contact material	W1	: Silver-tin oxide indium

Actual marking does not carry the type name: "FTR"
E.g.: Ordering code: FTR-G1CN010W1 Actual marking: G1CN010W1

■ SPECIFICATION

Item			FTR-G1
Contact Data	Configuration		1 form C
	Material		Silver-tin oxide indium ($AgSnO_2$)
	Contact voltage drop		Max. 100mV at 1A, 6VDC (after stabilization)
	Contact rating		25A at 14VDC (locked motor load)
	Max. carrying current *1		25A/1 hour (25 °C, 100% rated coil voltage)
	Max. switching voltage		16VDC (reference)
	Max. switching current		35A (reference)
	Min. switching load * 2		1A, 6VDC
Life	Mechanical		Min. 1 x 10^6 operations
	Electrical		* Min. 100 x 10^3 operations, 14VDC, 25A inrush power window motor (1 operation: 1 forward and 1 reverse) * Min. 100 x 10^3 operations 14VDC, 20A inrush door locked motor
Coil Data	Rated power		640mW
	Operate power		237mW
	Operating temperature range		-40 °C to +85 °C (no frost)
Timing Data	Operate (at nominal voltage)		Max. 10 ms (without bounce)
	Release (at nominal voltage)		Max. 5 ms (without bounce, no diode)
Insulation	Resistance (initial)		Min. 100MΩ at 500VDC
	Dielectric withstanding voltage	Open contacts	500VAC , 1 min.
		Between coil and contacts	500VAC, 1 min.
Other	Vibration resistance	Misoperation	10 to 55Hz double amplitude 1.5mm
	Shock	Misoperation	100m/s² minimum (10G)
		Endurance	1,000m/s² minimum (100G)
	Weight		Approximately 3.5 g
	Sealing		Plastic sealed cat III

* 1 Need to consider the heat to PCB when max. current is more than 10A
* 2 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.

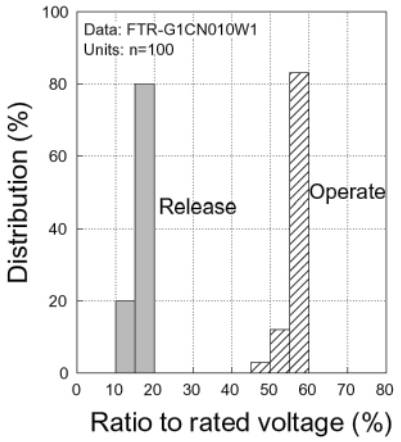
■ COIL RATING

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC) *	Must Release Voltage (VDC) *	Coil Power at Nominal Voltage (W)
009	9	126	5.4	0.75	0.64
			6.8 (at 85 °C)		
010	10	160	6.5	0.8	
			8.2 (at 85 °C)		
012	12	225	7.3	1	
			9.2 (at 85 °C)		

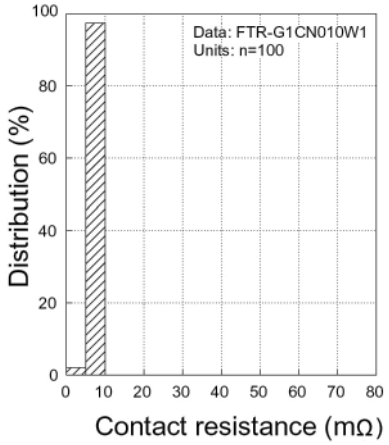
Note: All values in the table are valid for 20°C and zero contact current, unless otherwise indicated.
* Specified operate values are valid for pulse wave voltage.

■ REFERENCE DATA

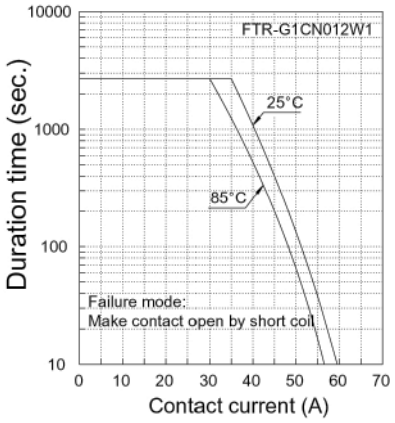
Operate/release voltage distribution



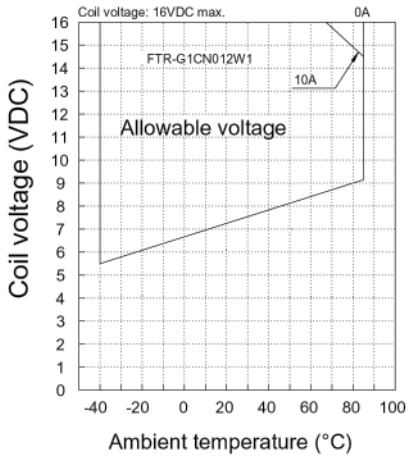
Contact resistance distribution



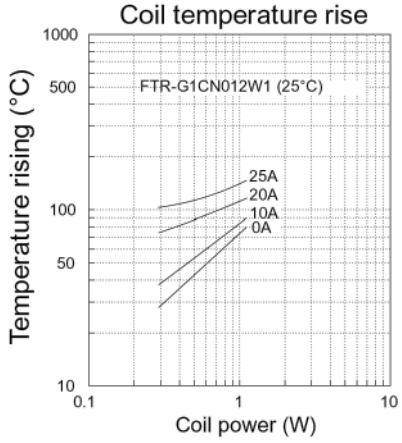
Contact current



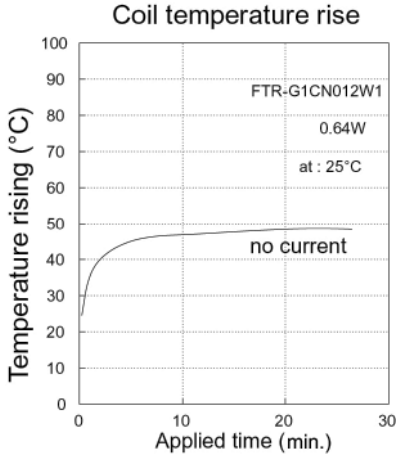
Ambient temperature vs voltage

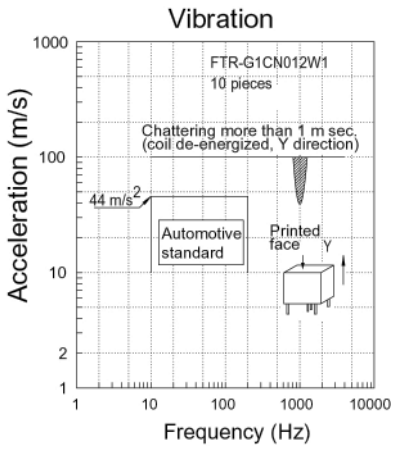


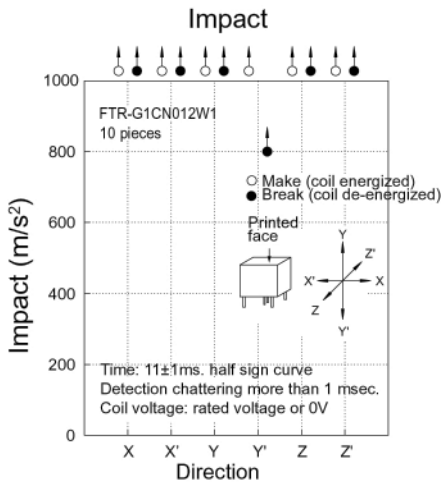
Coil temperature rise



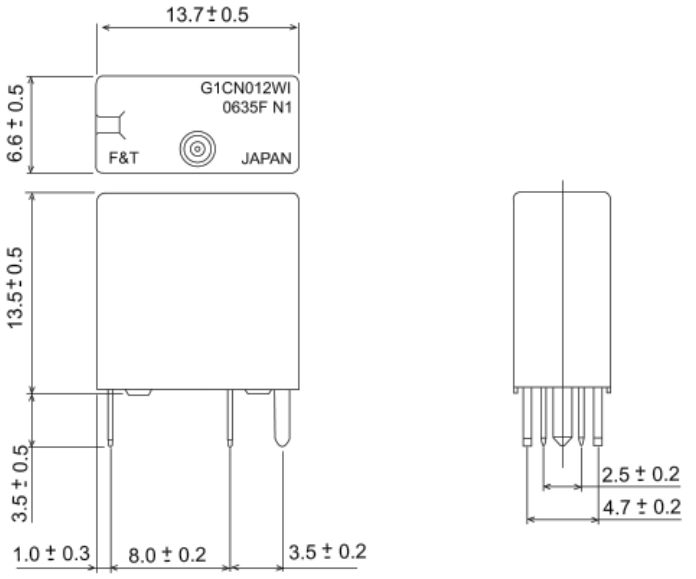
Coil temperature rise



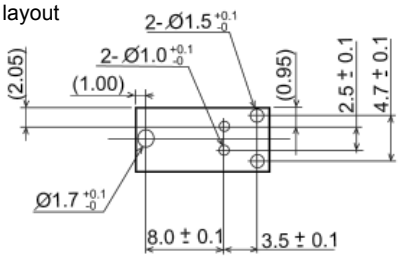




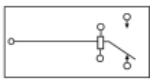
■ DIMENSIONS



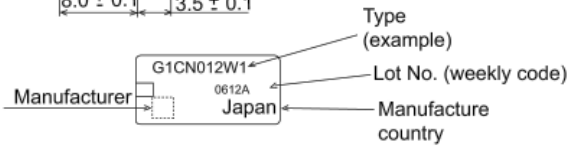
- Mounting hole layout (bottom view)



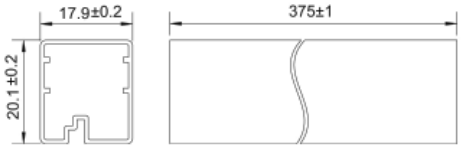
- Schematics



- Marking (example)



- Tube



Unit: mm

RoHS Compliance and Lead Free Information

1. General Information

- All automotive 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 our automotive relays are lead-free.
- 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 through hole mounted 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. January 11, 2011

Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001
Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

http://moschip.ru/get-element

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:
moschip.ru
moschip.ru_4
moschip.ru_6
moschip.ru_9