FUJITSU

SIGNAL RELAY

2 POLES - 2A High Isolation Wide Contact Gap

FTR-C2 Series

■ FEATURES

- DPDT 2A
- Contact gap: more than 2.0mm
- Conforms to IEC60950 / EN60950 / UL1950/ CSA C22.2 No.950
  Working voltage 250V
- Insulation:
  Clearance 2.0 mm (between open contacts, coil and contacts, contact sets)
  Creepage 2.5 mm (between open contacts,coil and contacts, contact sets)
- High reliability bifurcated contacts
- Power consumption 300 mW
- Latching types available
- RoHS compliant
  Please see page 7 for more information
- Plastic sealed

■ PARTNUMBER INFORMATION

	FTR-C2	C	A	012	G
[Example]	(a)	(b)	(c)	(d)	(e)

(a)	Relay type	FTR-C2	: FTR-C2-Series
(b)	Terminal type	C G	: Through hole type : Surface mount type
(c)	Coil type	A B	: Standard type : Latching type
(d)	Coil rated voltage	012	: 3.....24 VDC Coil rating table at page 3
(e)	Contact material	G	: Gold plated silver alloy

Remarks: Actual marking on relay would not carry code FTR and be as below:
Ordering code: FTR-C2CA012G Actual marking: C2CA012G

Note: FTR-C2 series available in tube packaging only.

■ SPECIFICATION

Item			Standard type	Latching type
			FTR-C2 ( ) A	FTR-C2 ( ) B
Contact Data	Configuration		2 form C	
	Construction		Bifurcated contacts	
	Material		Gold overlay silver palladium (stationary contact) Silver palladium (movable contact)	
	Resistance (initial)		Max. 150 mΩ at 1 A, 6 VDC	
	Contact rating (resistive)		0.3A, 125VAC / 1A, 30VDC	
	Max. carrying current		2A	
	Max. switching voltage		250 VAC / 220VDC	
	Max. switching power		62.5VA / 30W	
	Min. switching load *		0.01A, 10mVDC	
Life	Mechanical		Min. 10 x 10^6 operations (at 10 Hz)	
	Electrical	DC contact rating	Min. 100 x 10^3 operations	
		AC contact rating	Min. 100 x 10^3 operations	
Coil Data	Rated Power		300 mW	150 mW
	Operate Power		169 mW	85 mW
	Operating temperature range		-40 °C to +85 °C (no frost)	
Timing Data	Operate (at nominal voltage)		Max. 15 ms (without bounce)	
	Release (at nominal voltage)		Max. 15 ms (no diode, without bounce)	
Insulation	Resistance (initial)		Min. 1,000MΩ at 500VDC	
	Dielectric strength	Open contacts	1,500VAC (50/60Hz) 1min	
		Adjacent contacts	1,500VAC (50/60Hz) 1min	
		Contacts to coil	2,000VAC (50/60Hz) 1min	
	Surge strength	Coil to contacts	2,500V/ 2 x 10μs standard wave	
	Clearance	Adjacent contacts	2.0 mm	
		Open contacts	2.0 mm	
		Coil and contacts	2.0 mm	
	Creepage	Adjacent contacts	2.0 mm	
		Open contacts	2.0 mm	
		Coil and contacts	2.5 mm	
Other	Vibration resistance	Misoperation	10 to 55Hz double amplitude 3.3mm	
		Endurance	10 to 55Hz double amplitude 5.0mm	
	Shock	Misoperation	300m/s²	
		Endurance	1,000m/s²	
	Weight		Approximately 3.7g	
	Sealing		RT III (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

Standard 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)
003	3	30	2.25	0.3	7.2	300
005	5	83.3	3.75	0.5	12	
012	12	480	9	1.2	28.8	
024	24	1,920	18	2.4	57.6	

Latching type (1 coil)

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Set voltage (VDC) *	Reset voltage (VDC) *	Max. Coil Voltage (VDC)	Rated Power (mW)
003	3	60	+2.25	-2.25	7.2	150
005	5	167	+3.75	-3.75	12	
012	12	960	+9	-9	28.8	
024	24	3,840	+18	-18	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.

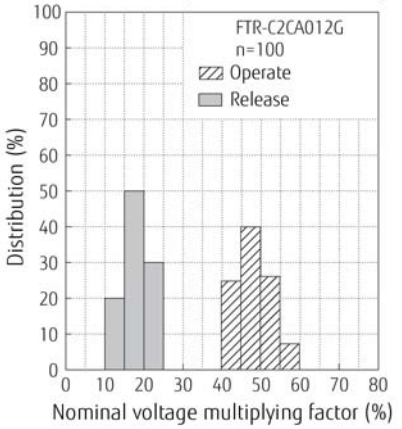
■ SAFETY STANDARDS

Type	Compliance	Contact rating
UL	UL 508 E 63615	Flammability: UL 94-V0 (plastics) 0.3A, 125VAC (resistive) 1A, 30VDC 2A, 30VDC 0.3A, 110VDC
CSA	C22.2 No. 14 LR 40304	

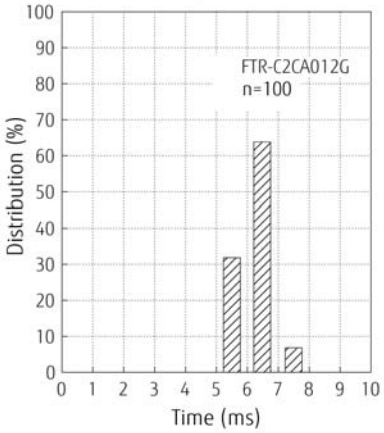
Comply with Telcordia specifications and meet BSI, IEC 60950-1:2006
Marking only for UL, CSA

■ CHARACTERISTIC DATA

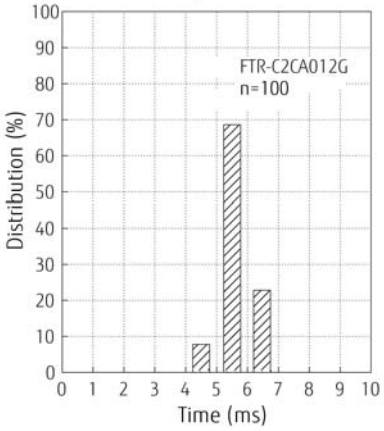
Distribution of operate/release voltage



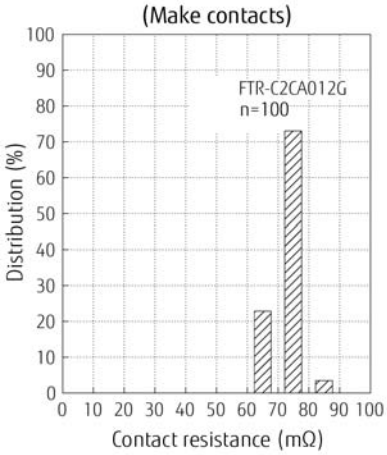
Distribution of operate/release time



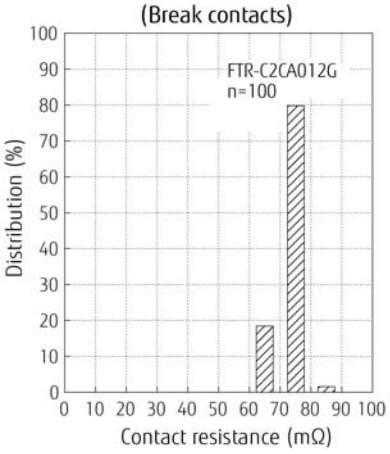
Distribution of operate/release time



Distribution of contact resistance
(Make contacts)



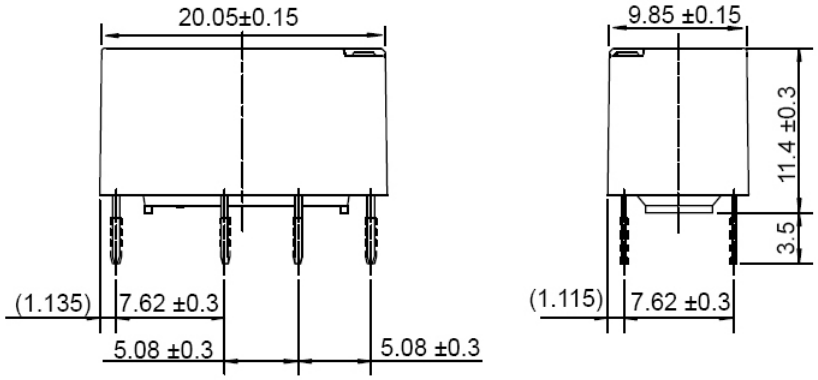
Distribution of contact resistance
(Break contacts)



■ DIMENSIONS

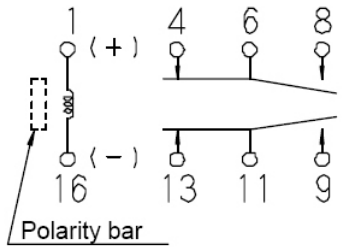
Through hole type

- **Dimensions**

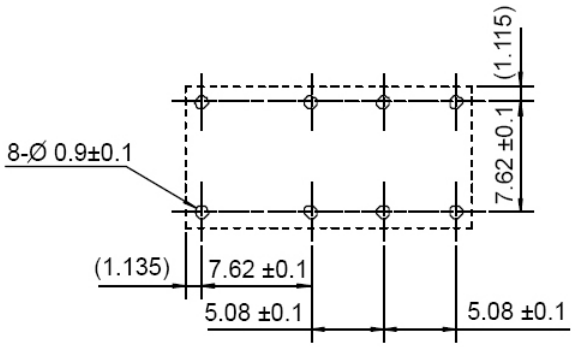


- **Terminal designations**

(Bottom view de-energized position)

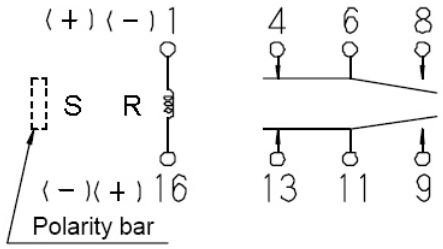


- **Recommended mounting pad**



Single Coil Latching type
(Bottom view reset position)

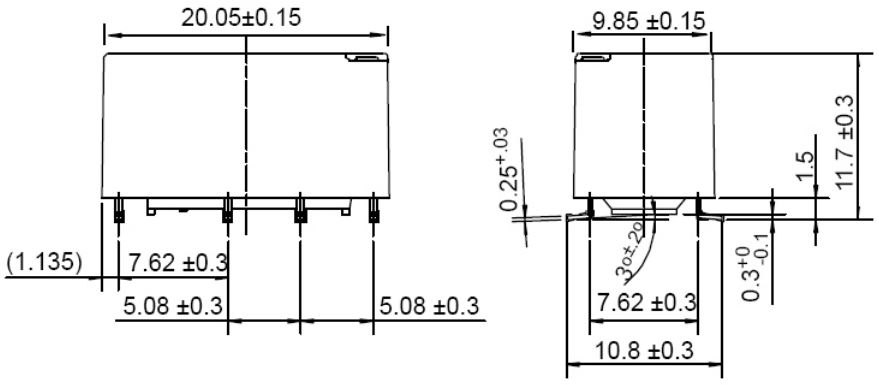
Unit: mm



S shows the polarity of set position
R shows the polarity of reset position

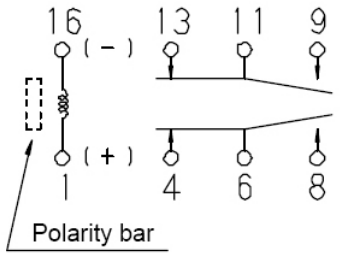
Surface mount type

- **Dimensions**

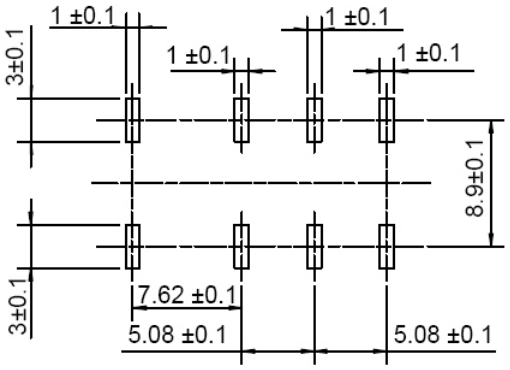


- **Terminal designations**

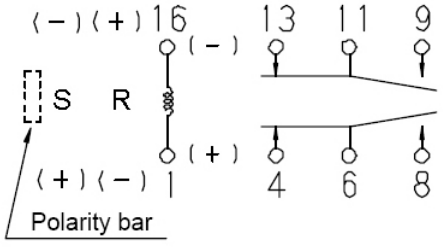
(Top view de-energized position)



- **Recommended mounting pad**



Single Coil Latching type
(Top view reset position)



Unit: mm

S shows the polarity of set position
R shows the polarity of reset position

RoHS Compliance and Lead Free Information

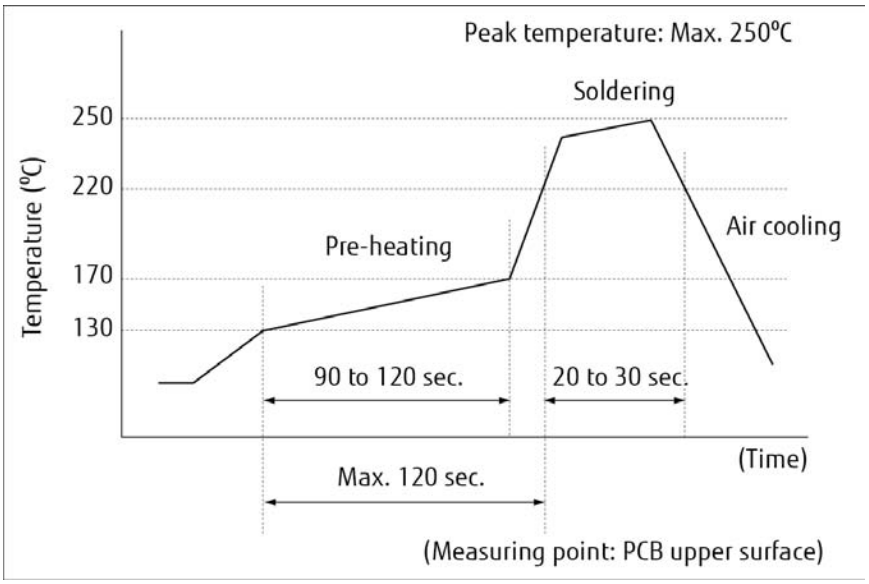
1. General Information

- 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.

Reflow Solder condition for SMT



Flow Solder Condition:

Pre-heating:	maximum 120˚C within 9 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.

REFLOW
Note:
1.Temperature profiles show the temperature of PC board surface.
2. Please perform soldering test with your actual PC board before mass production, since the temperatures of PC board surfaces can vary, depending on the size of PC board, status of parts mounting and heating method.

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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