

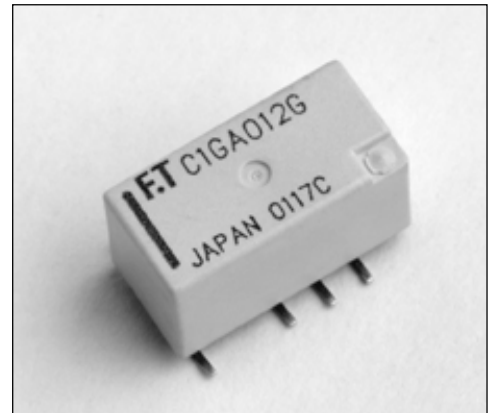
# ULTRA MINIATURE RELAY SIGNAL RELAY

## FTR-C1 Series

### ■ FEATURES

- Dimensions of large contact gap relay
  - Height: 9.3 mm maximum (THT)  
9.65 mm maximum (SMT)
  - Length: 15 mm maximum
  - Width: 7.5 mm maximum
- Conforms to IEC60950 / EN60950 / UL1950/ C22.2  
No.950 spacing & high breakdown voltage
  - Clearance: 2.0 mm ( coil and contacts)
  - Creepage: 2.5 mm ( coil and contacts)
- HIGH RELIABILITY
  - Bifurcated contacts
- Low power consumption 280 mW (latching type  
140mW)

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### ■ ORDERING INFORMATION

[Example] FTR-C1 C A 012 G \*

(a) (b) (c) (d) (e)

(a)	Series Name	FTR-C1
(b)	Terminal Appearance	C: Through hole type G: Surface mount type
(c)	Operation Function	A: Standard Type B: Single coil latching type
(d)	Coil Number	Nominal Voltage
(e)	Contact Material	G: Silver alloy

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

Ordering code                      Actual marking  
FTR-C1CA03G                      →                      C1CA03G

\* If ordering tape and reel package, please add "B05" after the partnumber (tape and reel is only available for SMT type, example: FTR-C1GA003G-B05)

# FTR-C1 Series

## ■ COIL DATA CHART

Standard type

Model		Nominal Voltage	Coil Resistance (±10%)	Must Operate Voltage	Must Release Voltage	Nominal Operating Power (±10%)
THT	SMT					
FTR-C1(C)(A)003-G	FTR-C1(G)(A)003-G	3 VDC	32.1 Ω	2.25 VDC	0.3 VDC	280 mW
FTR-C1(C)(A)04.5-G	FTR-C1(G)(A)04.5-G	4.5 VDC	72.3 Ω	3.38 VDC	0.45 VDC	280 mW
FTR-C1(C)(A)005-G	FTR-C1(G)(A)005-G	5 VDC	89.3 Ω	3.75 VDC	0.5 VDC	280 mW
FTR-C1(C)(A)012-G	FTR-C1(G)(A)012-G	12VDC	514 Ω	9.00 VDC	1.2 VDC	280 mW
FTR-C1(C)(A)024-G	FTR-C1(G)(A)024-G	24VDC	1920 Ω	18.0 VDC	2.4 VDC	300 mW

Note: All values in the table are measured at 20°C.

Single coil latching type

Model		Nominal Voltage	Coil Resistance (±10%)	Set Voltage	Reset Voltage	Nominal Operating Power (±10%)
THT	SMT					
FTR-C1(C)(B)003-G	FTR-C1(C)(B)003-G	3 VDC	64 Ω	2.25 VDC	2.25 VDC	140 mW
FTR-C1(C)(B)04.5-G	FTR-C1(C)(B)04.5-G	4.5 VDC	145 Ω	3.38 VDC	3.38 VDC	140 mW
FTR-C1(C)(B)005-G	FTR-C1(C)(B)005-G	5 VDC	179 Ω	3.75 VDC	3.75 VDC	140 mW
FTR-C1(C)(B)012-G	FTR-C1(C)(B)012-G	12VDC	1029 Ω	9.00 VDC	9.00 VDC	140 mW
FTR-C1(C)(B)024-G	FTR-C1(C)(B)024-G	24VDC	3200 Ω	18.0 VDC	18.0 VDC	180 mW

Note: - All values in the table are measured at 20°C.  
 - Single coil latching type is applying to the standard now.

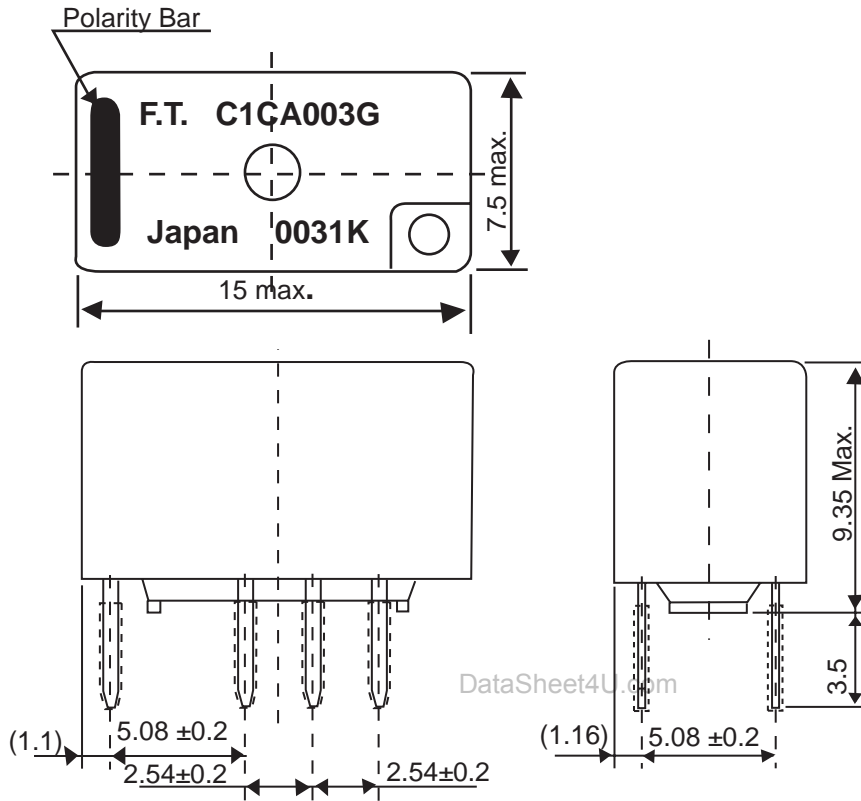
# FTR-C1 Series

## ■ SPECIFICATIONS

Item		FTR-C1CA ( )G FTR-C1GA ( )G	
Contact	Arrangement	2 Form C	
	Material	Silver alloy	
	Resistance (initial)	Max. 100m ohm (at 1A 6VDC)	
	Max. Switching Power	37.5AV / 30W	
	Max. Switching Voltage	250VAC, 220 VDC	
	Max. Switching Current	1 A	
Coil	Operating Temperature	-40° C to + 85° C (no frost)	
	Max. Allowable Voltage	150% nominal voltage (at 20° C)	
Time Value	Operate Time	Max. 10ms (at nominal voltage, without bounce)	
	Release Time (without diode)	Max. 10ms (at nominal voltage, without bounce)	
Insulation	Resistance (at 500 VDC)		Min. 1,000M ohmS
	Dielectric Strength	Between open contacts	1,500VAC, 1 minute
		Between adjacent contacts	1,500VAC, 1 minute
		Between coil and contacts	3,000VAC, 1 minute
	Surge Strength	Between open contacts	2,500V (at 2/10 microsec)
		Between adjacent contacts	2,500V (at 2/10 microsec)
Between coil and contacts		5,000V (at 2/10 microsec)	
Life	Mechanical	10x10 <sup>6</sup> operations min. (at 10Hz)	
	Electrical (resistive load)	100x10 <sup>3</sup> operations min. at 1A, 30VDC, 0.5Hz 100x10 <sup>3</sup> operations min. at 0.1A, 48VDC, 0.5Hz 100x10 <sup>3</sup> operations min. at 0.3A, 125VDC, 0.5Hz	
Vibration Resistance	Misoperation	10 to 55 Hz at double amplitude of 3.3 mm	
	Endurance	10 to 55 Hz at double amplitude of 5 mm	
Shock Resistance	Misoperation	Min. 500 m/s <sup>2</sup>	
	Endurance	Min. 1,000 m/s <sup>2</sup>	
UL / CSA	Contact Rating	0.3A 125 VAC 1A 30VDC 0.3 110VDC	
IEC060950 UL1950 C22.2 No.950 EN60950	Insulation Class		Supplementary Insulation
	Working Voltage		250 V
	Pollution Degree		2
	Clearance		2.0 mm (between coil and contacts)
	Creepage Distance		2.5 mm (between coil and contacts)

## ■ DIMENSIONS AND SCHEMATICS

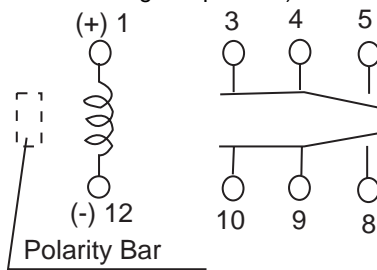
Through hole type



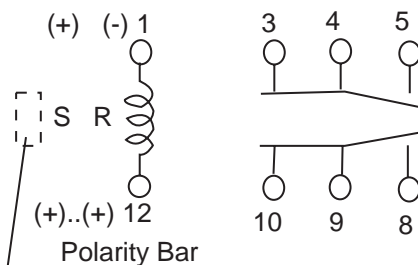
Unit: mm

## ■ TERMINAL DESIGNATIONS

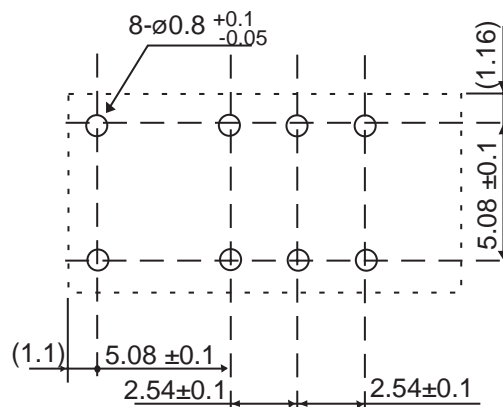
Standard type  
(Bottom view de-energized position)



Single Coil Latching type  
(Bottom view reset position)



## ■ RECOMMENDED MOUNTING PAD

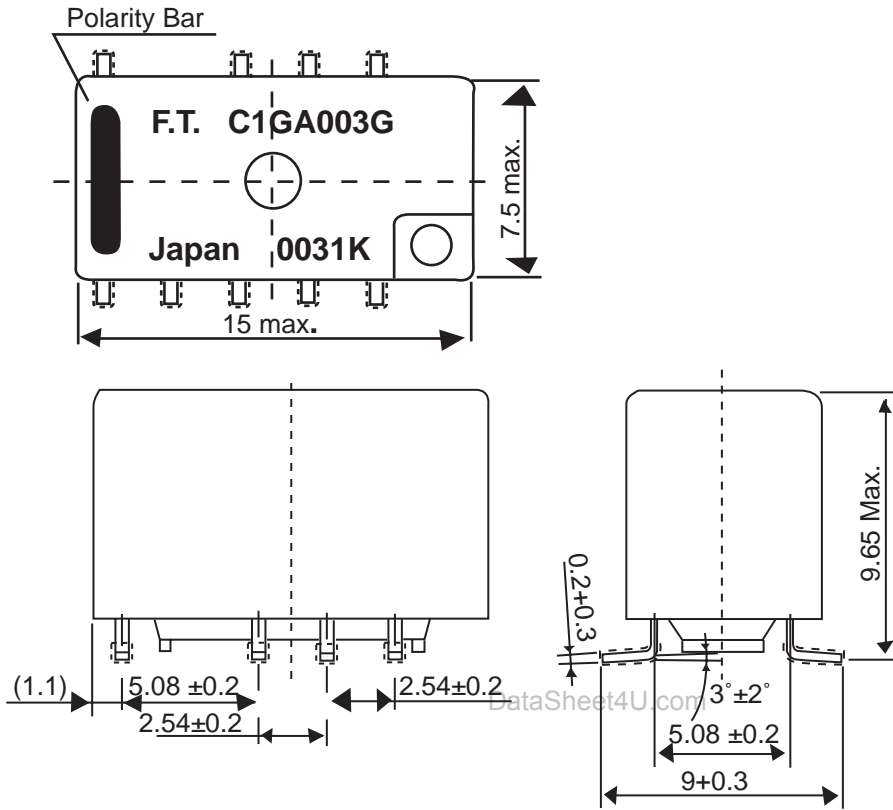


S shows the polarity of set position  
R shows the polarity of reset position

Unit: mm

## ■ DIMENSIONS AND SCHEMATICS

Surface mount type

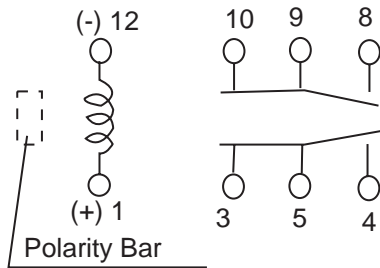


Unit: mm

## ■ TERMINAL DESIGNATIONS

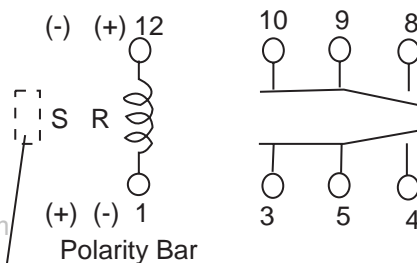
Standard type

(Top view de-energized position)

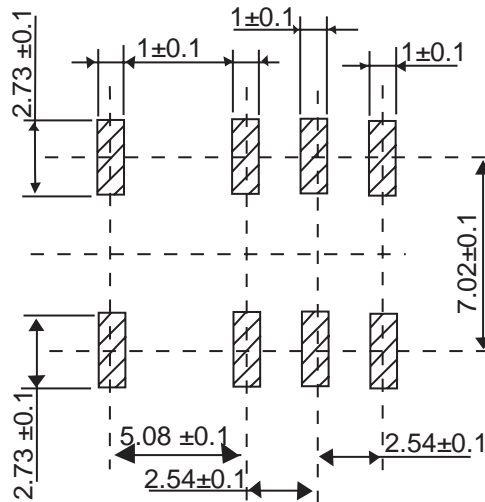


Single Coil Latching type

(Bottom view reset position)



## ■ RECOMMENDED MOUNTING PAD

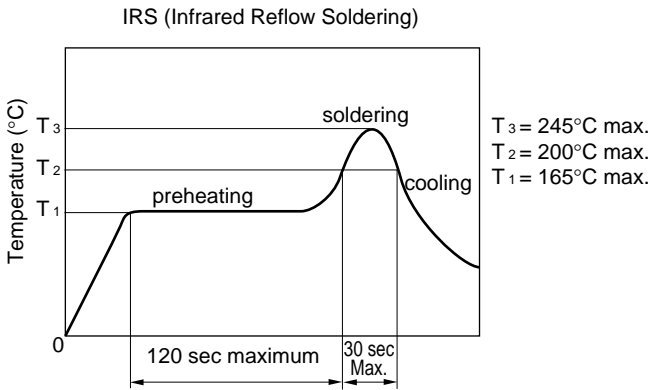


S shows the polarity of set position  
R shows the polarity of reset position

Unit: mm

# FTR-C1 Series

## RECOMMENDED SOLDERING CONDITIONS (TEMPERATURE PROFILE)

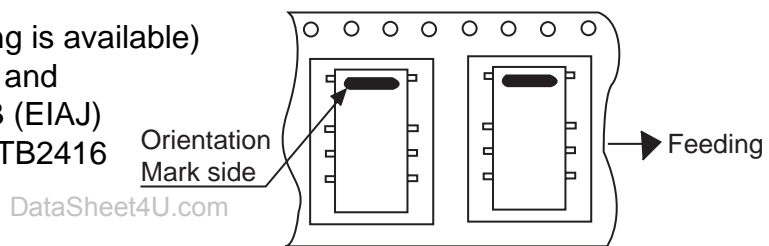


- Note:
1. Temperature profiles show the temperature of PC board surface.
  2. Please perform soldering test with your actual PC board before mass production, since the temperatures of PC board surfaces vary according to the size of PC board, status of parts mounting and heating method.

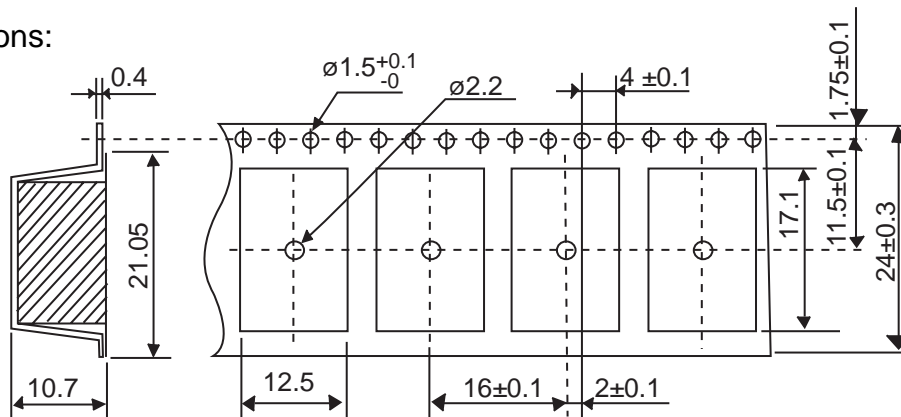
## PACKAGING

Packaging method (only tape packaging is available)

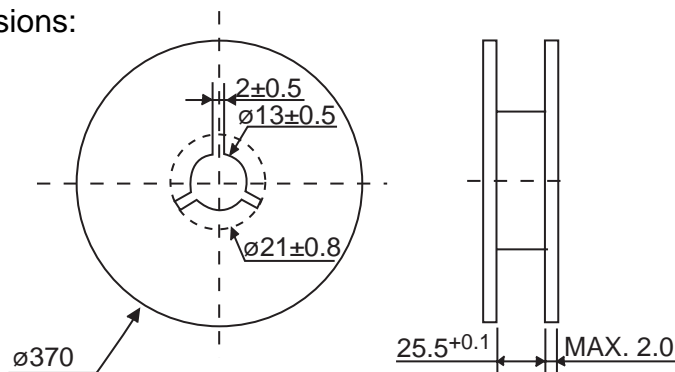
1. Taping standards: JIS C 0806 and RC-10092B (EIAJ)
2. Reel type: TB2416 or TB2416
3. Reel type: RD24D
4. Quantity of 1 reel: 500 pieces



Tape Dimensions:



Reel Dimensions:



Unit: mm

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