

MICRO SURFACE MOUNT RELAY

1 POLE—25 A

(For Automotive Applications)

FTR-P6 Series

RoHS Compliant

■ FEATURES

- Surface mount relays for automotive applications
- Miniature size (67% of the volume of FTR-P3 relays)
- High contact capacity with proven contact material
- (100,000 operations, 14V, 25A achieved even with reduced size).
- Coil power savings (800mW nominal achieved with state-of-the-art magnetic analysis design)
- Semi-quiet relay (average acoustic noise level: 60dB distance 5cm).
- RoHS Compliant since production



■ ORDERING INFORMATION

[Example] FTR-P6 G N 012 WA **
 (a) (b) (c) (d) (e) (f)

(a)	Series Name	FTR-P6 : FTR-P6 Series
(b)	Contact Arrangement	G : 1 Form C
(c)	Contact Gap	N : 0.25 mm Gap
(d)	Nominal Voltage	010 : 10 VDC 012 : 12 VDC
(e)	Contact Material	WA : Silver-tin oxide alloy
(f)	Special product specification	Symbol to specify special specification product

Note: The part number on the relay cover does not include 'FTR'

Example: Ordering part number: FTR-P6GN010WA
 Stamped part number: P6GN010WA

■ TYPICAL APPLICATIONS

Power window Door lock	Power seat Sun roof	Wiper
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FTR-P6 Series

■ SPECIFICATIONS

Item		Specification	
Contact	Arrangement	1 FormC	
	Material	Silver Oxide Tin-Indium	
	Voltage drop (resistance)	Max. 100 mV (1A, 12VDC)	
	Contact rating	DC 14V, 25A (motor locked)	
	Maximum Carrying Current	25 A/ 1 hour (20° C, nominal voltage applied to coil)	
	Maximum Inrush Current	35 A	
	Contact Resistance	100mΩ maximum(at 6VDC, 1A after stabilization)	
	Minimum Switching Load (reference)	1A, 6VDC	
Coil	Coil Power Consumption	Approximately 0.8 W (at rated coil voltage)	
	Operating Temperature Range	-40° C to +85° C (no frost)	
	Storage Temperature Range	-40° C to +100° C (no frost)	
	Operating Humidity	45 to 85%RH	
Insulation	Initial resistance	100MΩ maximum at 500VDC	
	Dielectric withstanding voltage	500 VAC	
Time	Operate (at nominal voltage)	10 ms maximum	
	Release (at nominal voltage)	5 ms maximum	
Life	Mechanical	1x10 ⁷ operations minimum (with no load for contact)	
	Electrical	1x10 ⁶ operations minimum (14VDC 25A locked motor)	
Other	Vibration resistance	Misoperation	10-55Hz, 1.5mm double amplitude, 10 to 100Hz (45m/s ²)
		Endurance	10 to 100Hz (45m/s ²)
	Shock resistance	Misoperation	100 m/s ² (11ms)
		Endurance	1000 m/s ² (11ms)
	Weight	Approximately 3.3 grams	

■ COIL DATA CHART

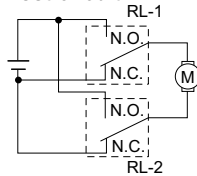
Model	Nominal Coil Voltage	Coil Resistance (±10% at 20° C)	Must Operate Voltage	Coil Power at Nominal Voltage
FTR-P6GN010WA	10VDC	135	6.3VDC (at 20° C) 7.9VDC (at 85° C)	0.8W
FTR-P6GN012WA	12VDC	180	7.3VDC (at 20° C) 9.2VDC (at 85° C)	0.8W

CHARACTERISTIC DATA

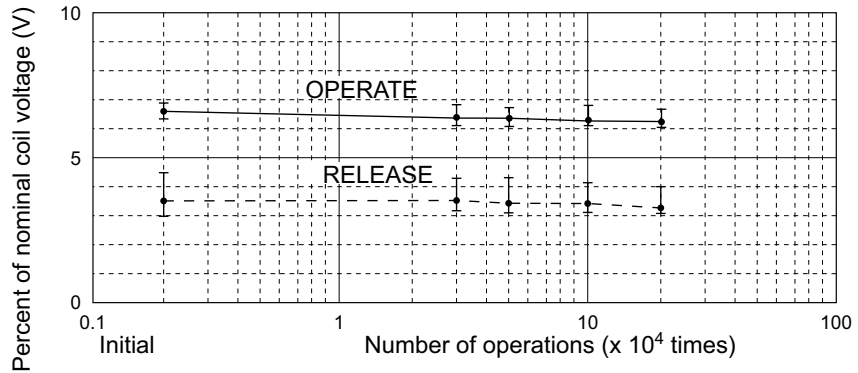
1. LIFE TEST (EXAMPLES)

- Test item
Inrush current: 25A
16VDC
motor locked
Min. 100K operations
0.5 seconds ON
5.5 seconds OFF

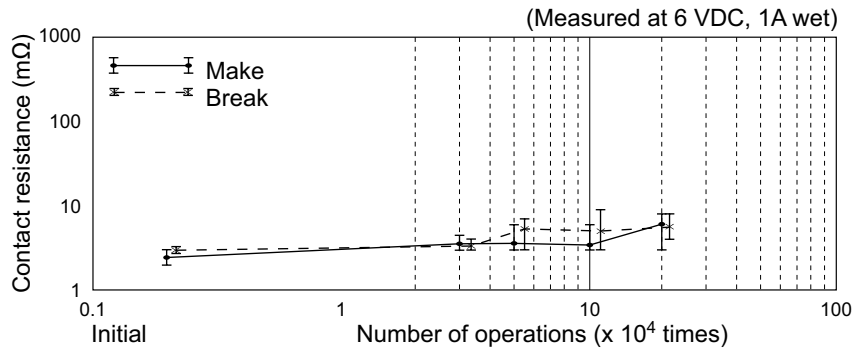
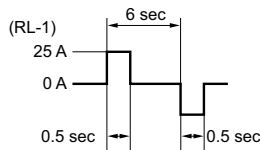
- Test circuit



- Change of operate and release voltage

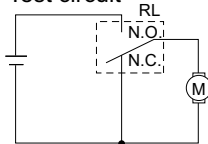


- Current wave form

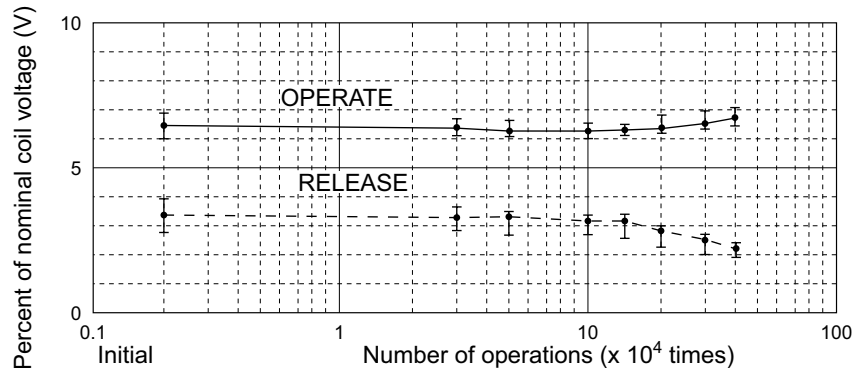


- Test item
Inrush current: 20A
16VDC
motor free
Min. 400K operations
1.5 seconds ON
2.0 seconds OFF

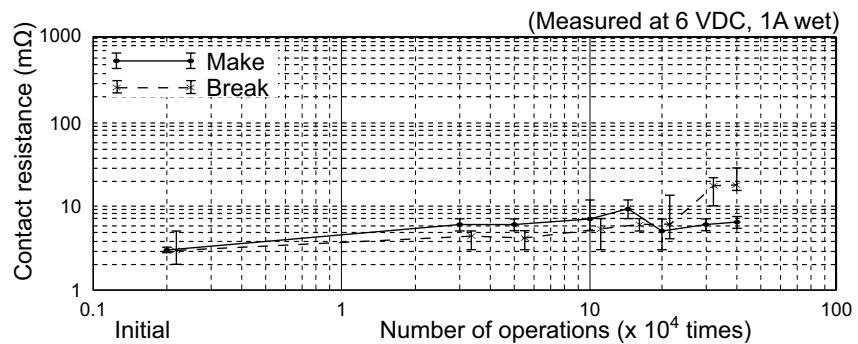
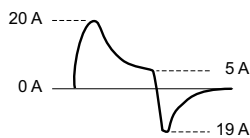
- Test circuit



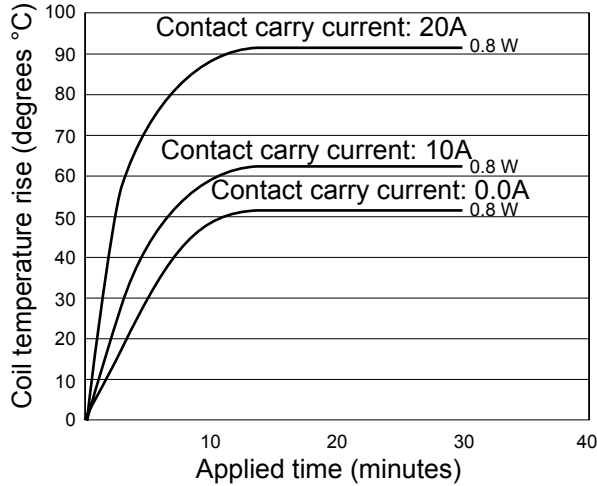
- Change of operate and release voltage



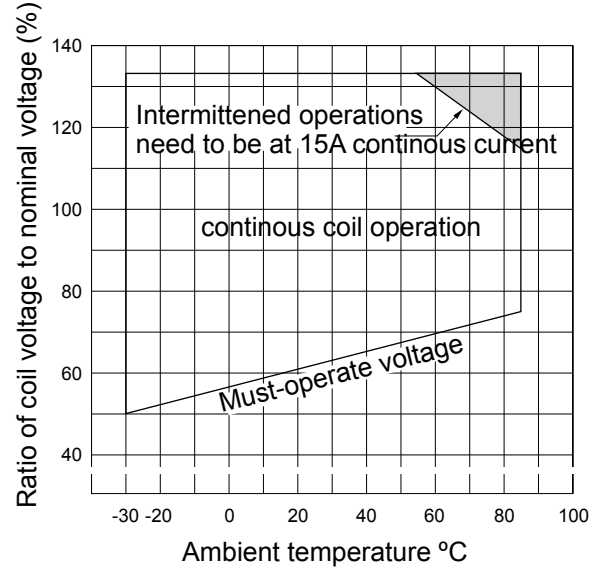
- Current wave form



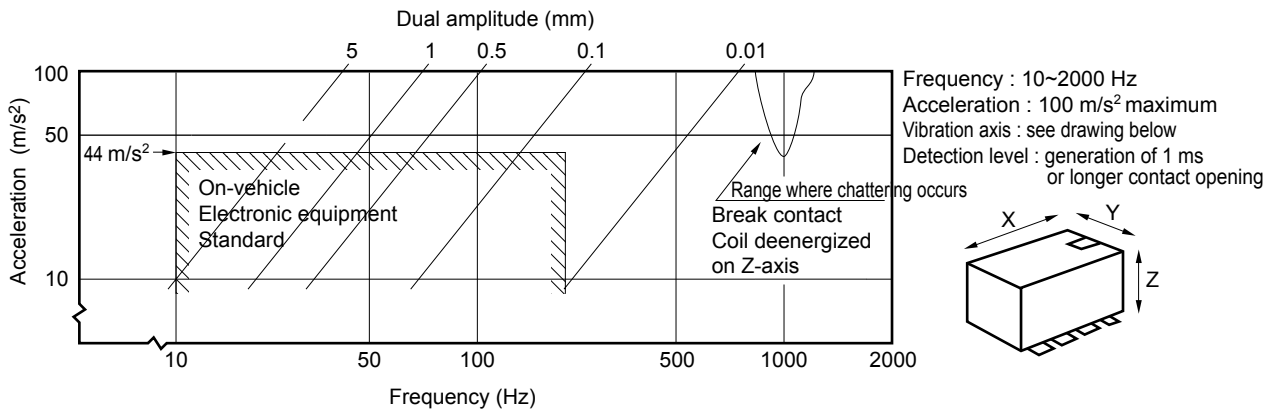
2. COIL TEMPERATURE RISE



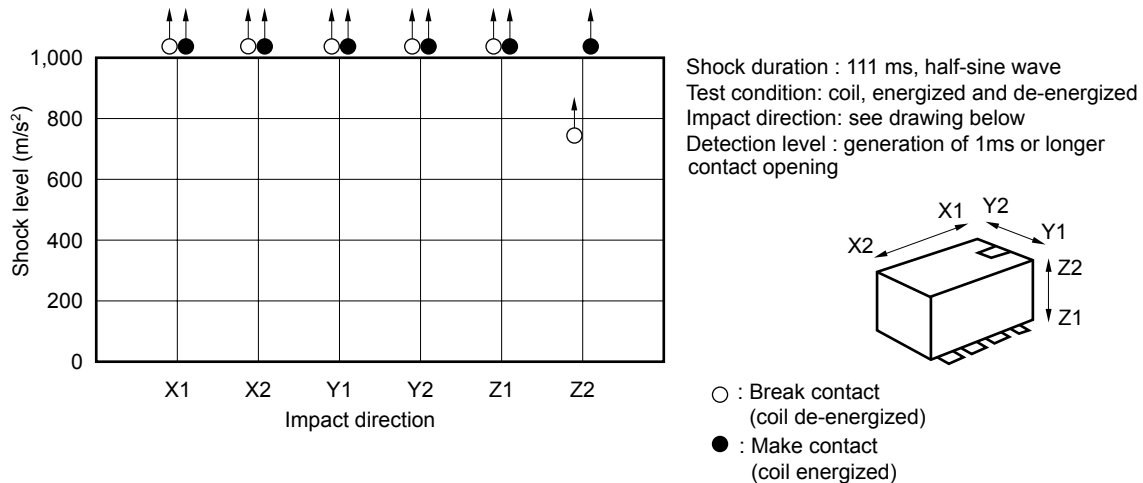
3. OPERATING COIL VOLTAGE RANGE



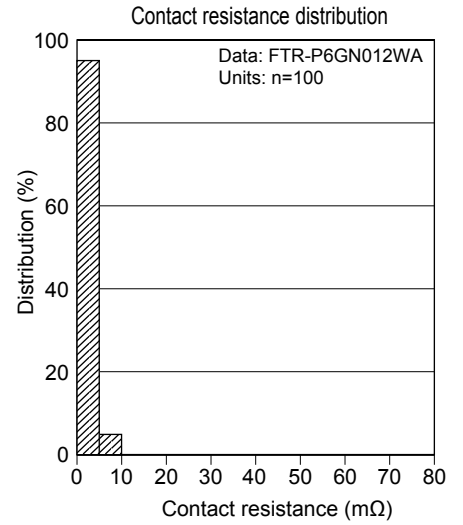
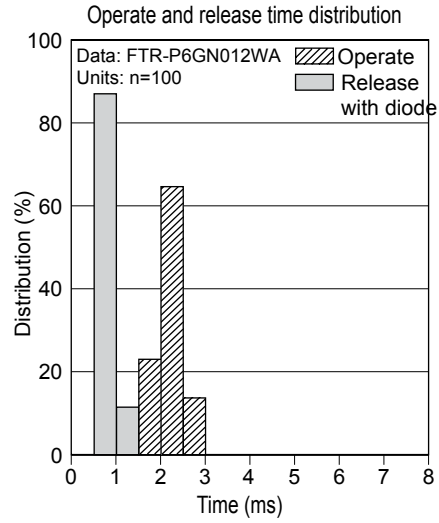
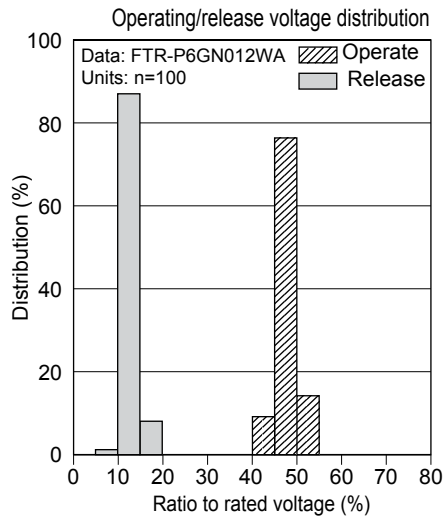
4. VIBRATION RESISTANCE CHARACTERISTIC



5. SHOCK RESISTANCE CHARACTERISTIC

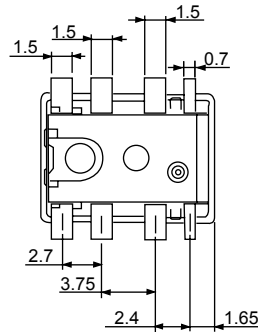
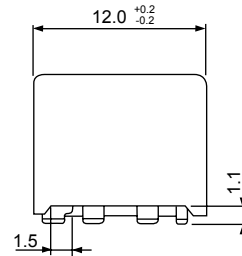
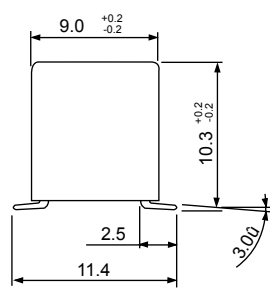


■ REFERENCE DATA

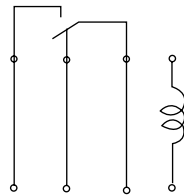


■ DIMENSIONS

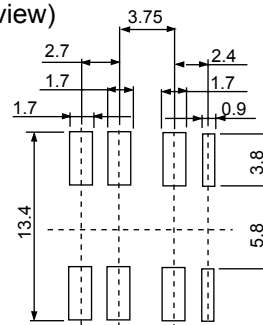
- Dimensions



- Schematic (bottom view)

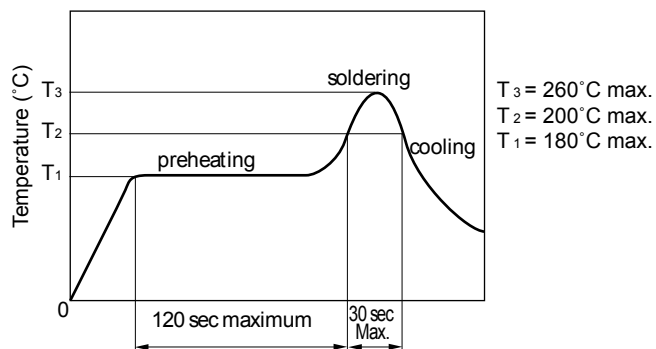


- PCB mounting hole layout (top view)



■ REFERENCE DATA

- Reflow Temperature Profile



Note: Temperature profile shows temperature of PC board surface.

Unit: mm

Fujitsu Components International Headquarter Offices

Japan

Fujitsu Component Limited
Gotanda-Chuo Building
3-5, Higashigotanda 2-chome, Shinagawa-ku
Tokyo 141 8630, Japan
Tel: (81-3) 5449-7010
Fax: (81-3) 5449-2626
Email: promothq@fcl.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://www.fujitsu.com/us/services/edevice/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/>

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