

# 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 <sup>7</sup> operations minimum (with no load for contact)	
	Electrical	1x10 <sup>6</sup> operations minimum (14VDC 25A locked motor)	
Other	Vibration resistance	Misoperation	10-55Hz, 1.5mm double amplitude, 10 to 100Hz (45m/s <sup>2</sup> )
		Endurance	10 to 100Hz (45m/s <sup>2</sup> )
	Shock resistance	Misoperation	100 m/s <sup>2</sup> (11ms)
		Endurance	1000 m/s <sup>2</sup> (11ms)
	Weight	Approximately 3.3 grams	

## ■ COIL DATA CHART

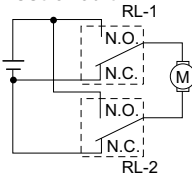
Model	Nominal Coil Voltage	Coil Resistance (±10% at 20° C)	Must Operate Voltage	Coil Power at Nominal Voltage
FTR-P6GN010WA	10VDC	135	6.3VDC (at 20° C) 7.9VDC (at 85° C)	0.8W
FTR-P6GN012WA	12VDC	180	7.3VDC (at 20° C) 9.2VDC (at 85° C)	0.8W

## CHARACTERISTIC DATA

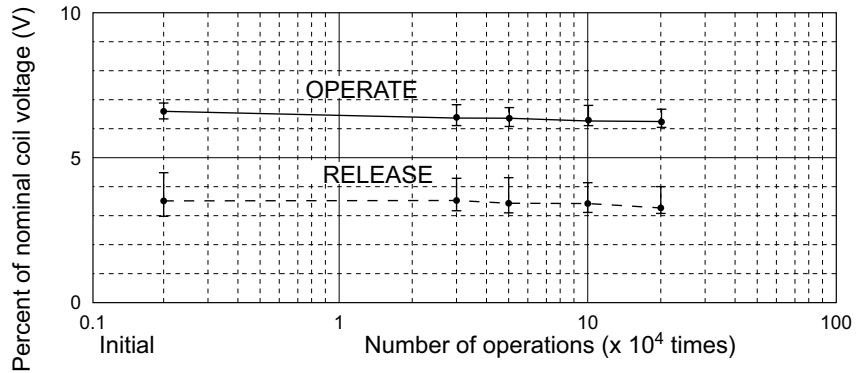
### 1. LIFE TEST (EXAMPLES)

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

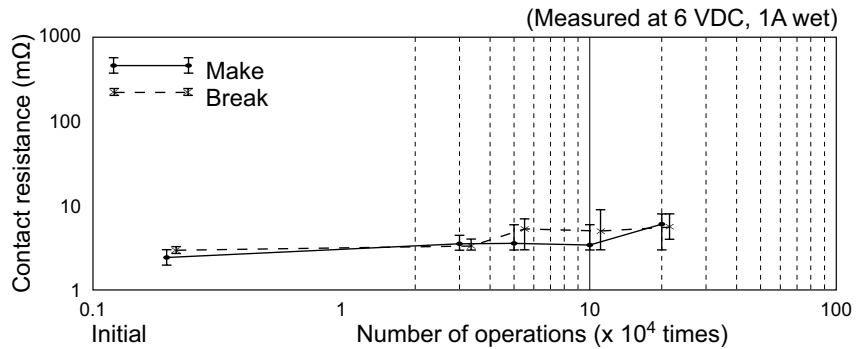
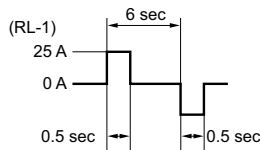
- Test circuit



- Change of operate and release voltage

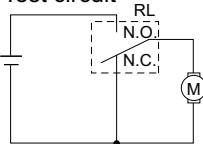


- Current wave form

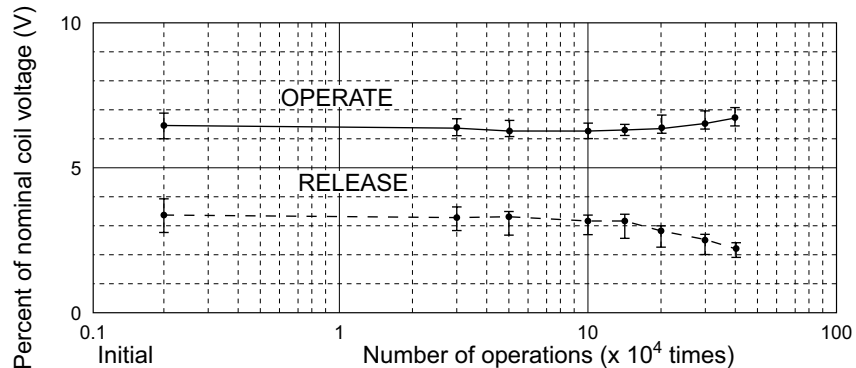


- Test item  
Inrush current: 20A  
16VDC  
motor free  
Min. 400K operations  
1.5 seconds ON  
2.0 seconds OFF

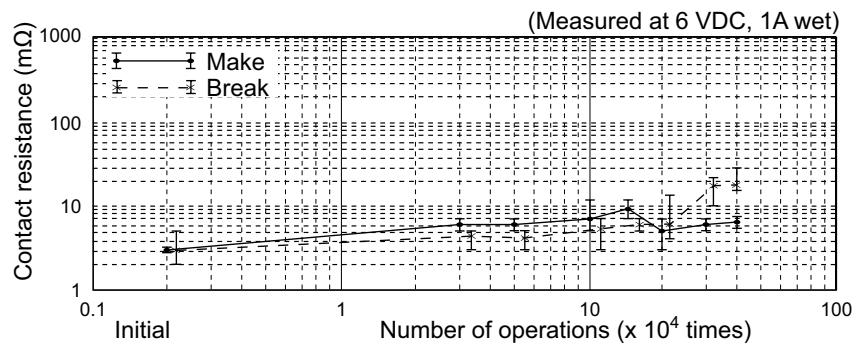
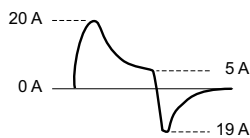
- Test circuit



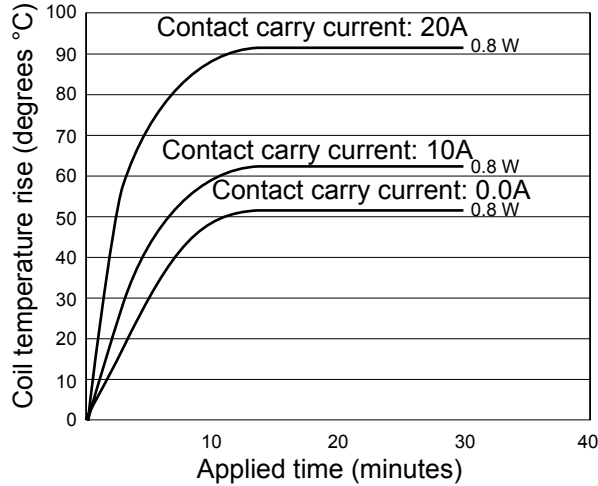
- Change of operate and release voltage



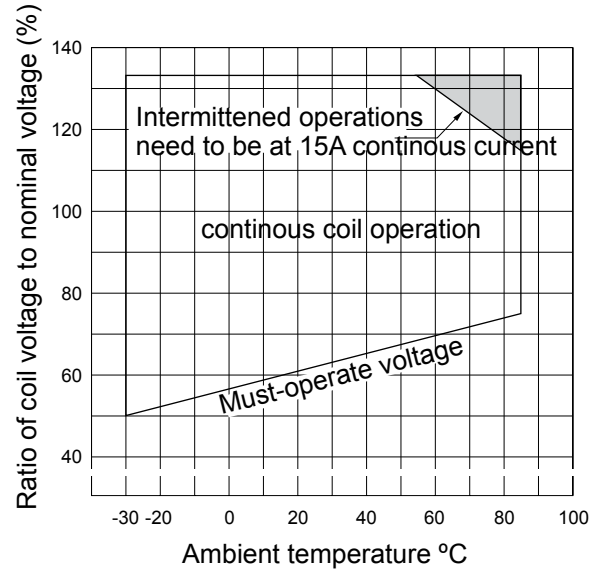
- Current wave form



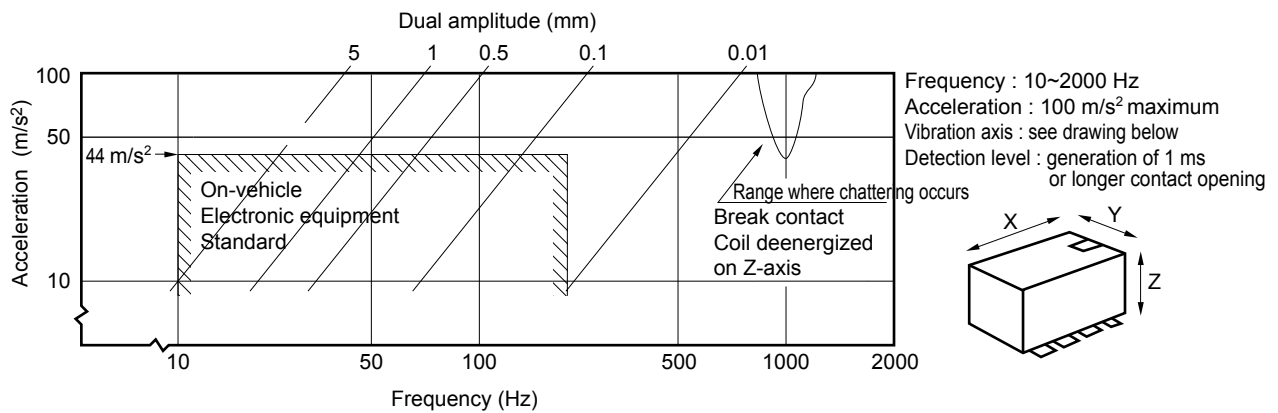
## 2. COIL TEMPERATURE RISE



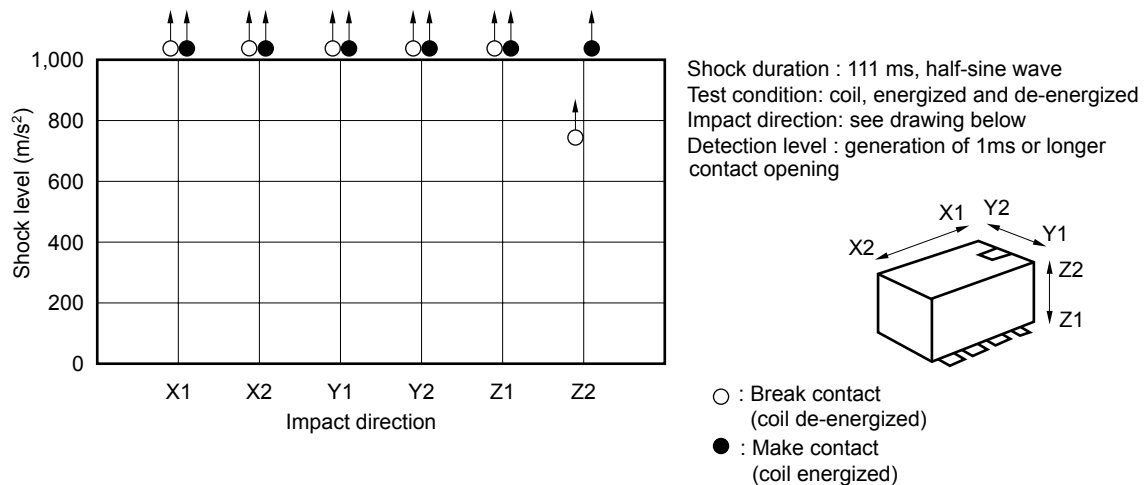
## 3. OPERATING COIL VOLTAGE RANGE



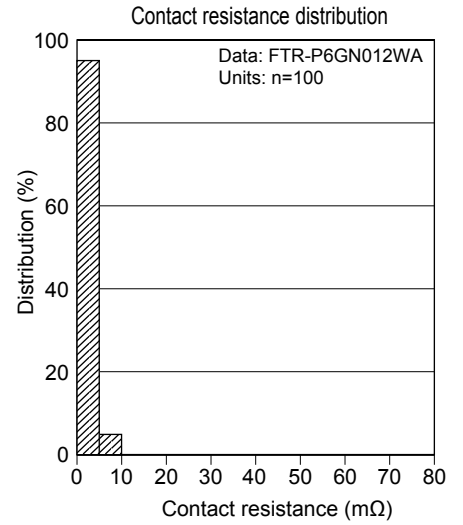
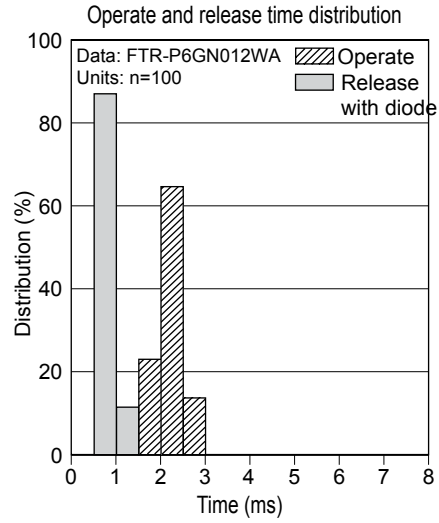
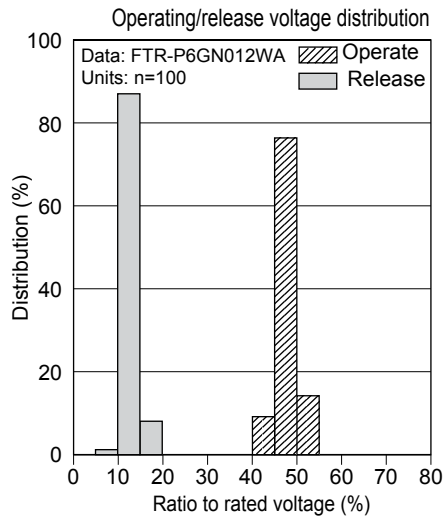
## 4. VIBRATION RESISTANCE CHARACTERISTIC



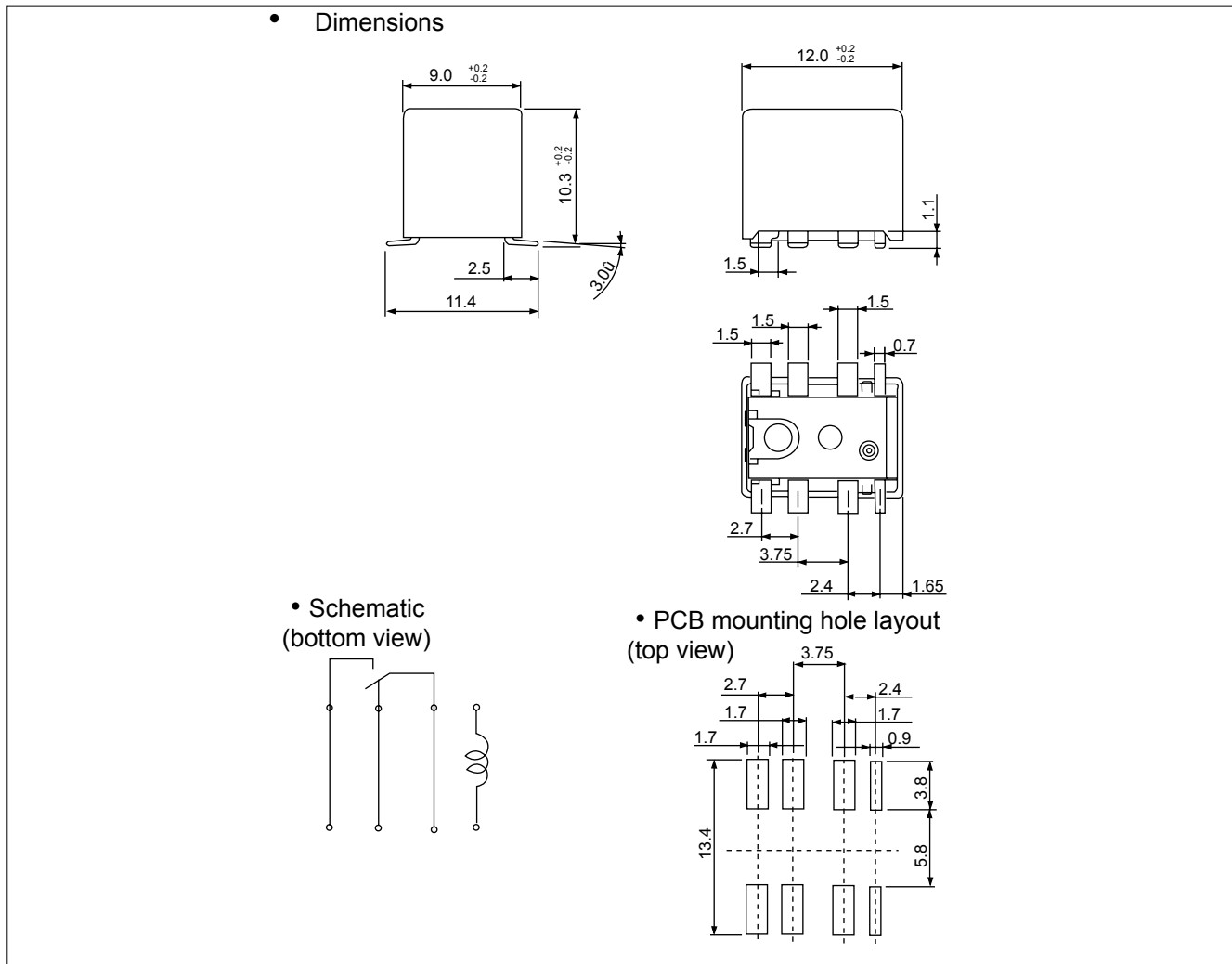
## 5. SHOCK RESISTANCE CHARACTERISTIC



## ■ REFERENCE DATA

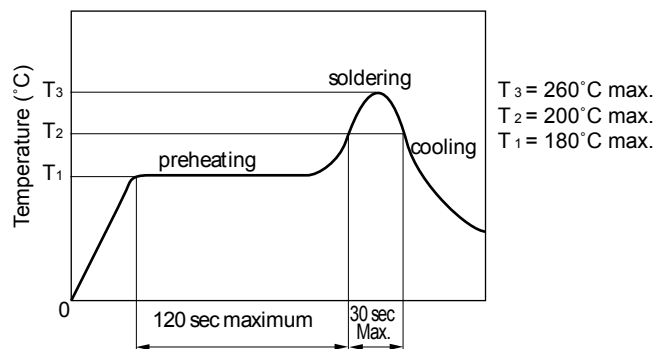


## ■ DIMENSIONS



## ■ REFERENCE DATA

- Reflow Temperature Profile



Note: Temperature profile shows temperature of PC board surface.

Unit: mm

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