

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

■ 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

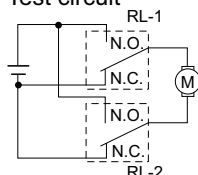
■ CHARACTERISTIC DATA

1. LIFE TEST (EXAMPLES)

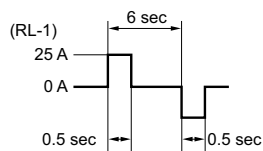
• Test item

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

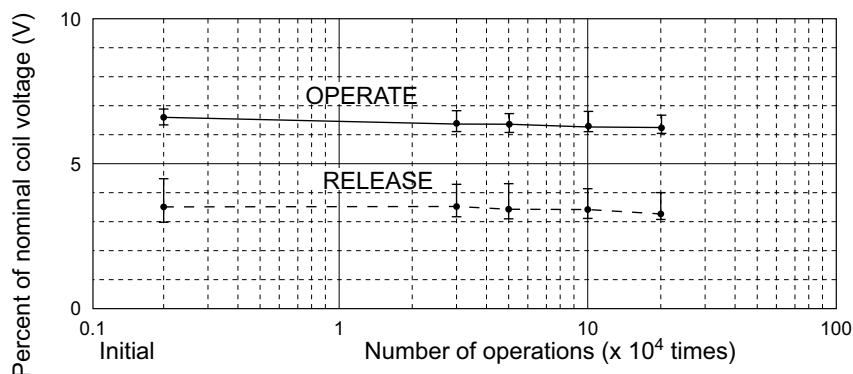
• Test circuit



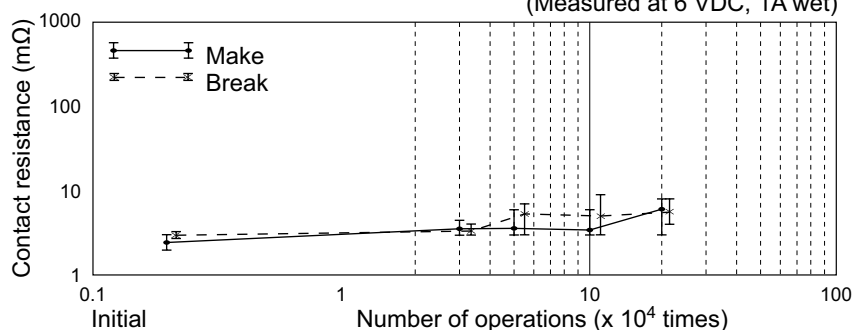
• Current wave form



• Change of operate and release voltage



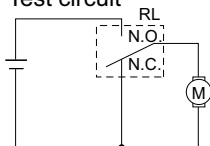
(Measured at 6 VDC, 1A wet)



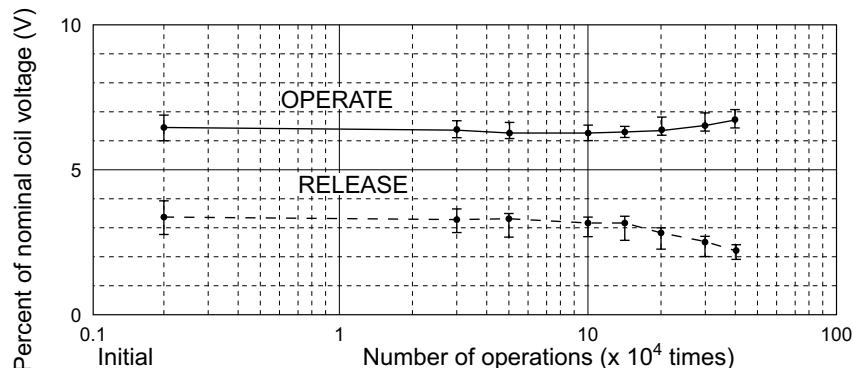
• Test item

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

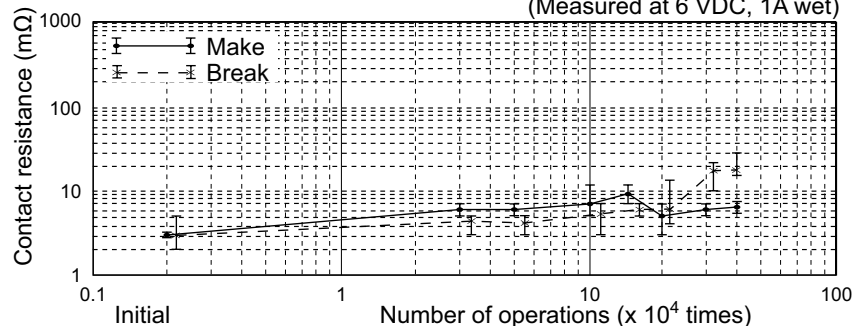
• Test circuit



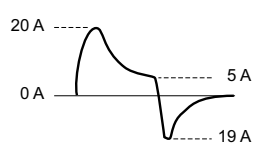
• Change of operate and release voltage



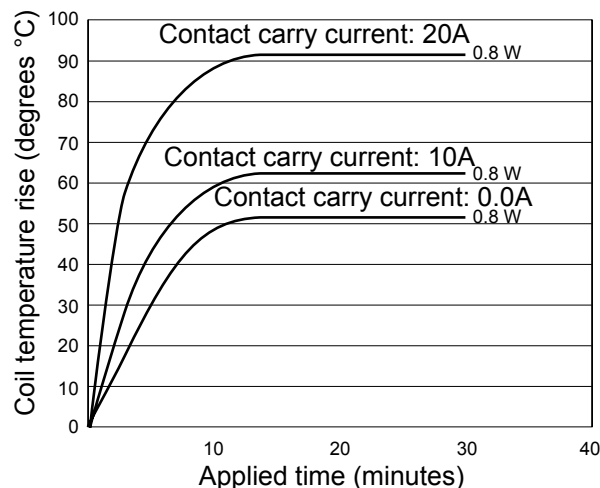
(Measured at 6 VDC, 1A wet)



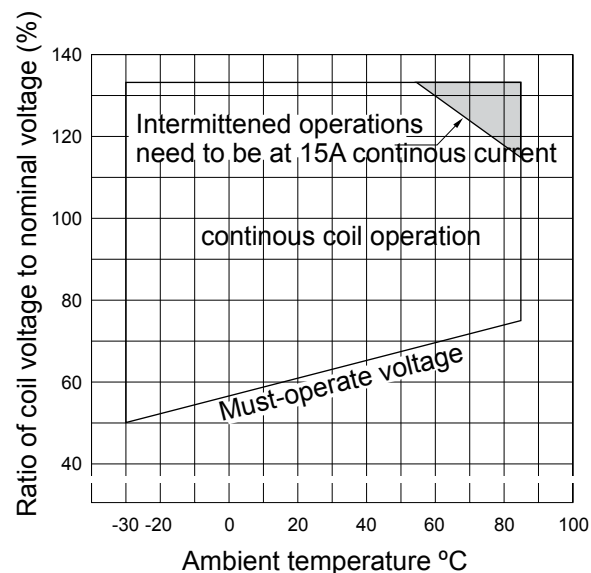
• Current wave form



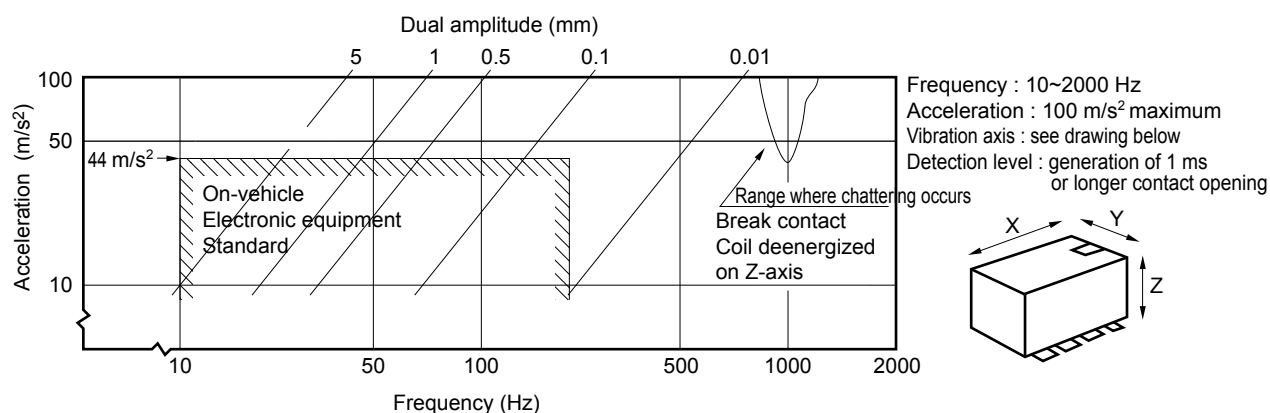
2. COIL TEMPERATURE RISE



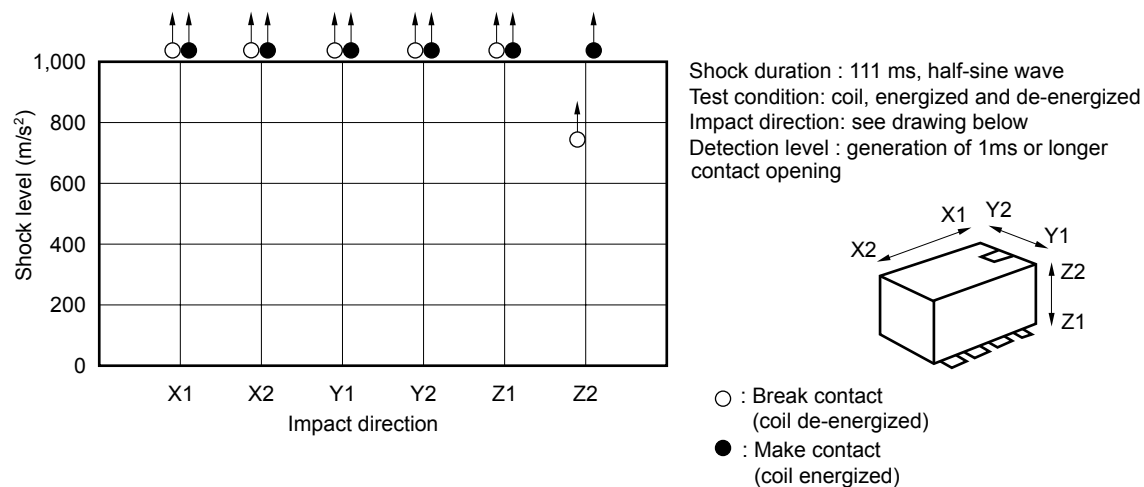
3. OPERATING COIL VOLTAGE RANGE



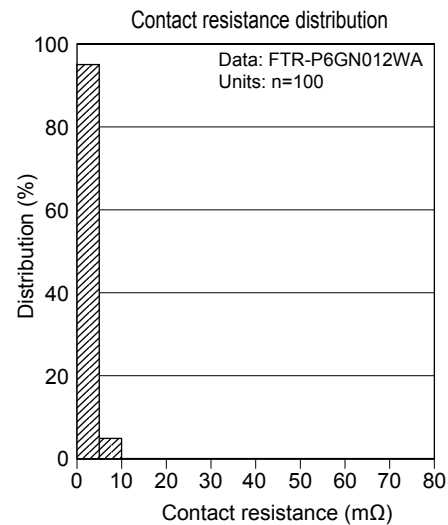
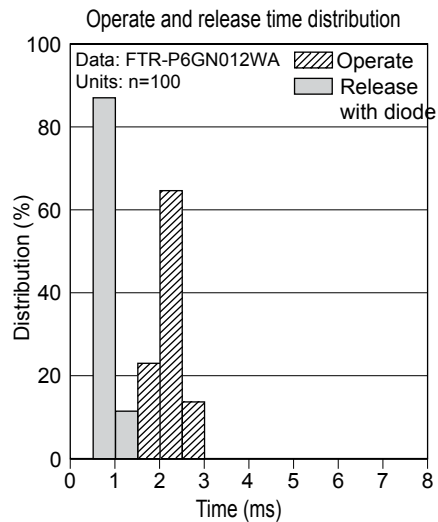
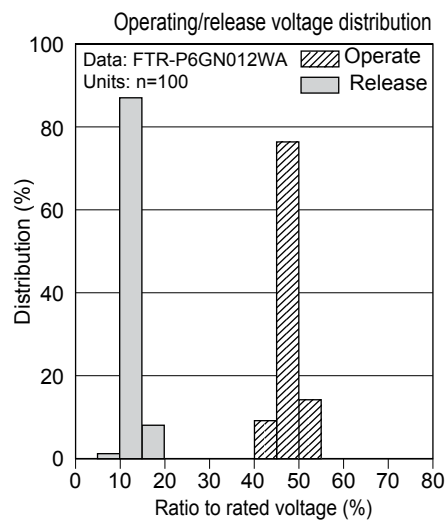
4. VIBRATION RESISTANCE CHARACTERISTIC



5. SHOCK RESISTANCE CHARACTERISTIC

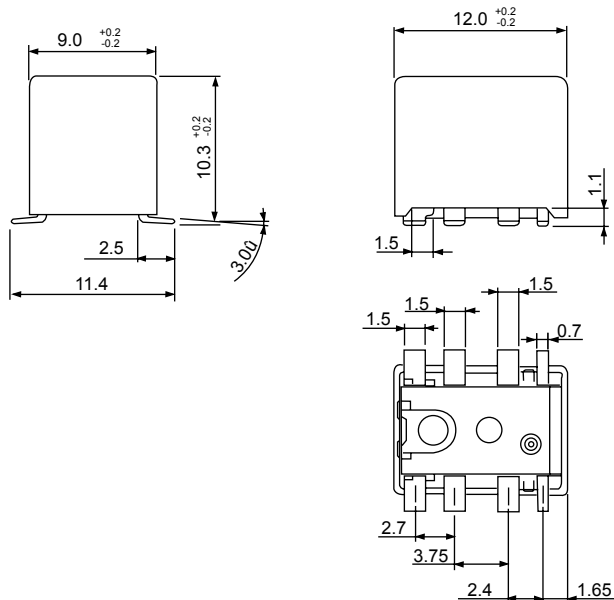


■ REFERENCE DATA

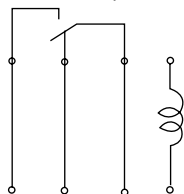


■ DIMENSIONS

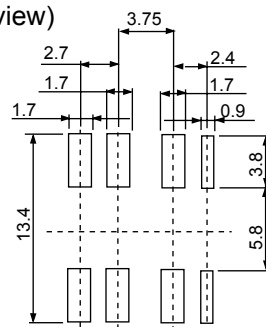
• Dimensions



• Schematic (bottom view)

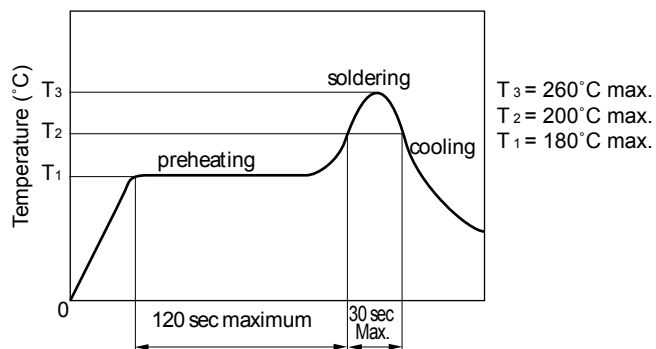


• PCB mounting hole layout (top view)



■ REFERENCE DATA

• Reflow Temperature Profile



Note: Temperature profile shows temperature of PC board surface.

Unit: mm

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