Features

Compact size & low profile: 14.3(L) x 9.3(W) x 5(H)mm (standard type)
14.3(L) x 9.3(W) x 5.3(H)mm (SMT type)
Conforms to FCC Part 68 1,500V surge dielectric
DIL pitch terminals
Surface mount type with "L" shaped terminals
Wash tight type
Single or double coil latching type is available
High sensitivity 140mW nominal power

cULus: E141516

Typical applications:

Telecommunication equipment
Security alarm systems
Medical monitoring equipment
Flight simulator
Office equipment
Measuring instruments
Audio visual equipment
Sensor control

Ordering information

FRT5S - L1 DC12V
1 2 3

1 Relay model: FRT5 : Standard PC mount; FRT5S: Surface mount (SMT type) 2 Sort: NIL: Single side stable; L1: 1 coil latching L2 : 2 coil latching (only for FRT5 series)	3 Rated voltage Note: RoHS : RoHS compliant relay RoHS-I : AgNi contact

Coil rating

Single side stable: FRT5 / FRT5S

Rated voltage (V DC)	Coil resistance Ω+/-10%	Rated voltage (mA)	Must operate voltage (V DC) Max.	Must release voltage (V DC) Min.	Maximum voltage (V DC) Max.	Power consumption (W) Approx.	Operate time (ms)	Release time (ms)
3	64.3	47	2.25	0.3	7.5	0.14	<2	<1
4.5	144	31	3.375	0.45	11.25			
5	178	28	3.75	0.5	12.5			
6	257	23.5	4.5	0.6	15			
9	579	15.5	6.75	0.9	22.5			
12	1028	11.7	9	1.2	30			
24	2880	8.3	18	2.4	48	0.20		

1 coil latching: FRT5-L1 / FRT5S-L1 / 2 coils latching: FRT5-L2

Rated voltage (V DC)	Coil resistance Ω+/-10% 1 coil	2 coils Set coil	2 coils Reset coil	Set voltage (V DC) Max.	Reset voltage (V DC) Max.	Maximum voltage (V DC) Max. 1 coil	Maximum voltage (V DC) Max. 2 coils	Power consumption (W) Approx. 1 coil	Power consumption (W) Approx. 2 coils Set coil	Power consumption (W) Approx. 2 coils Reset coil	Set time (ms)	Reset time (ms)
3	90	45	45	2.25	2.25	8.7	6	0.10	0.20	0.20	<2	<2
4.5	202	101	101	3.375	3.375	13.05	9					
5	250	125	125	3.75	3.75	14.5	10					
6	360	180	180	4.50	4.50	17.4	12					
9	810	405	405	6.75	6.75	26.1	18					
12	1440	720	720	9.0	9.0	34.8	24					
*24	3840	1920	1920	18.0	18.0	57.6	36	0.15	0.30	0.30		

*Note: 24VDC coil is available for FRT5S-L1 (SMD).

CAUTION: 1. The use of any coil voltage less than the rated coil voltage will compromise the operation of the relay.
2. Pickup and release voltage are for test purposes only and are not to be used as design criteria.

Characteristics

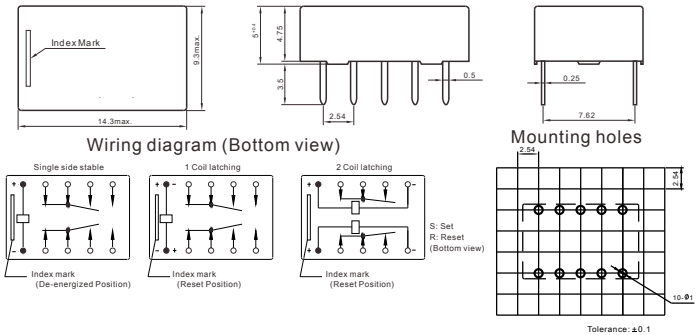
Contact arrangement		DPDT (2 Form C)
Contact material		Movable contact : Silver alloy Stationary contact: Gold clad silver alloy
Contact resistance (initial)		50mΩ Max. (measured at 1A 6VDC)
Contact rating (resistive)		1A 30VDC / 0.5A 125VAC (Special: 2A 30VDC)
Switching current		2A Max.
Switching power		62.5VA / 60W Max.
Switching voltage		AC 250V / DC 220V Max.
Switching load (min.)		0.01mA 10m VDC (reference value)
Electrostatic capacitance		0.4pF Approx. (Between open contacts) 0.9pF Approx. (Between coil and contact) 0.2pF Approx. (Between contact poles)
Insulation resistance		1,000MΩ Min. (500VDC)
Dielectric strength		1,000Vrms, 1 minute between open contacts 1,000Vrms, 1 minute between coil and contact 1,000Vrms, 1 minute between contact sets
Surge voltage (FCC)		1,500V Between open contacts 1,500V Between coil and contact 2,500V Between contact sets
Shock resistance		Functional : 50G (11ms) Destructive: 100G (6ms)
Vibration resistance		Functional : 3mm Double amplitude 10-55Hz Destructive: 5mm Double amplitude 10-55Hz
Ambient temperature		FRT5 : -40°C to +70°C FRT5S: -40°C to +85°C
Operation life	Mechanical	10^8
	Electrical	2×10^5 (at 1A 30VDC); 1×10^5 (at 0.5A 125VAC)
Weight		1.5g Approx.

(Specifications are subject to change without notices.)

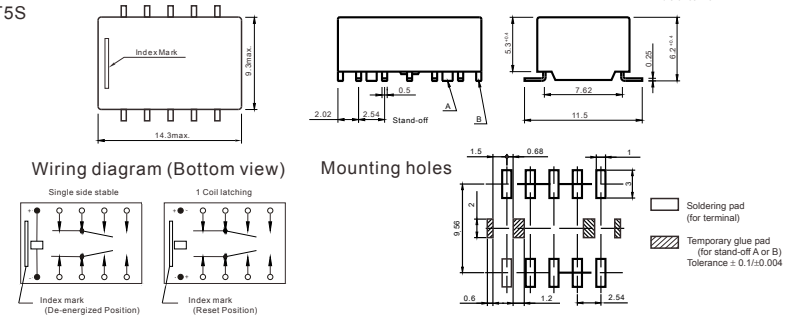
Dimensions

mm

FRT5



FRT5S

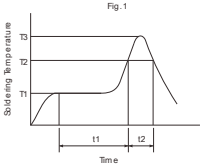


SOLDERING and MOUNTING RECOMMENDATIONS

1. Conditions for Terminal Soldering by reflow soldering method

a. In case of Infrared Soldering

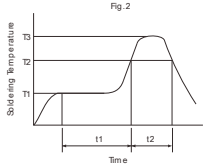
Fig.1



T1:+ 120 to+ 150°C(+ 248 to+ 302°F)
T2:+ 180 to+ 200°C(+ 356 to+ 392°F)
T3:+ 265°C(+ 500°F)Max.
t1:60 to 90 Sec.
T2:+ 30 Sec.Max.

b. In case of Vapor Phase Soldering

Fig.2



T1:+ 120 to+ 150°C(+ 248 to+ 302°F)
T2:+ 180 to+ 200°C(+ 356 to+ 392°F)
T3:+ 235°C(+ 455°F)Max.
t1:+ 40 to 60 Ses
t2:+ 60 Sec. Max.

2. Usage of Stand-Off A & B Bin Base Area

The Stand-Offs shown in the Fig. 3 are designed to Anchor Relays temporarily to PC Board with glue before Terminal Soldering.

Fig.3