

# REED SWITCH

## ORD213

**Extreme Ultraminiature (Low-level Load 24 V Max. for General Control)**

### GENERAL DESCRIPTION

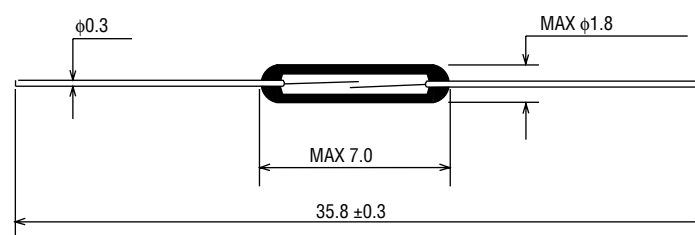
The ORD213 is a small single-contact reed switch designed for general control of low-level loads less than 24 V. The reed contacts are sealed within the glass tube within inert gas to maintain contact reliability.

### Features

- (1) The reed contacts are hermetically sealed within a glass tube with inert gas and do not receive any influence from the external atmospheric environment.
- (2) High response speed
- (3) The operating system and electrical circuits are coaxially composed and the ORD213 is suited to the applications for high frequency transmission.
- (4) Compact and light weight
- (5) The superior corrosion resistance and wear resistance of the contacts assure stable switching operation and long life.
- (6) With a permanent magnet installed, the reed switch economically and easily becomes a proximity switch.

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### External Dimensions (Unit:mm)



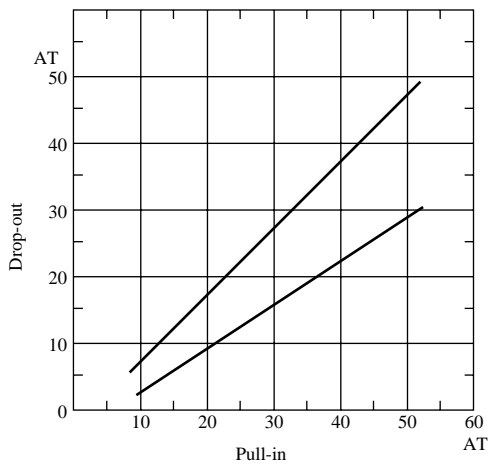
### APPLICATIONS OF REED SWITCHES

1. Automotive electronic devices
2. Control equipment
3. Communication equipment
4. Measurement equipment
5. Household appliances

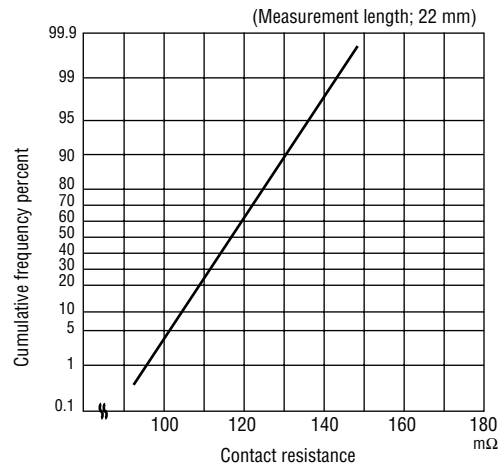
**ELECTRICAL CHARACTERISTICS**

Parameter	Symbol	Condition	Rated Value			Unit
			Min.	Typ.	Max.	
Pull-in Value	PI	—	10	—	40	AT
Drop-out Value	DO	—	5	—	—	AT
Contact Resistance	CR	—	—	—	200	mΩ
Breakdown Voltage	—	—	150	—	—	VDC
Insulation Resistance	—	—	10 <sup>9</sup>	—	—	Ω
Electrostatic Capacitance	—	—	—	—	0.4	pF
Contact Rating	—	—	—	—	1.0	VA
Maximum Switching Voltage	—	—	—	—	24 <sup>DC</sup> <sub>AC</sub>	V
Maximum Switching Current	—	—	—	—	0.1	A
Maximum Carry Current	—	—	—	—	0.3	A

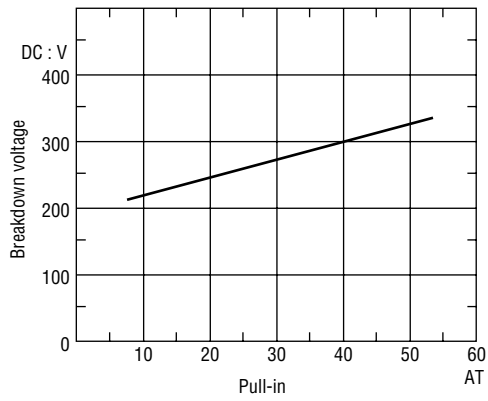
(1) Drop-out vs. Pull-in



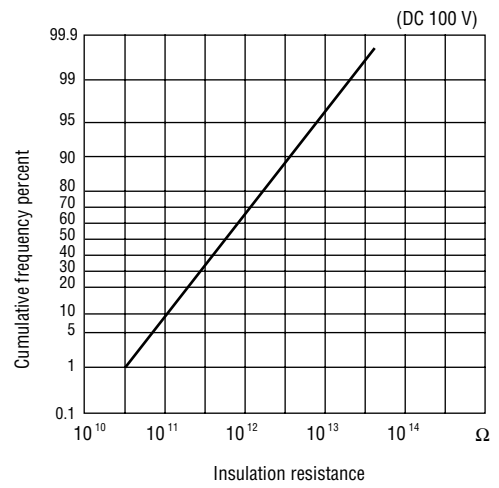
(2) Contact resistance



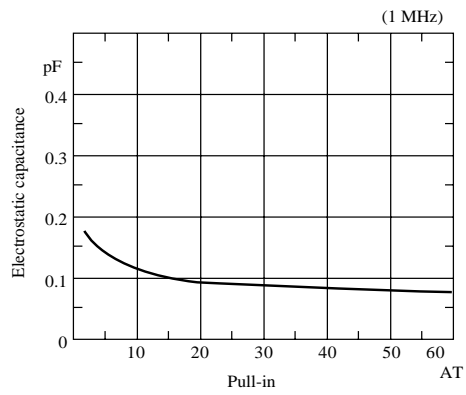
(3) Breakdown voltage



(4) Insulation resistance



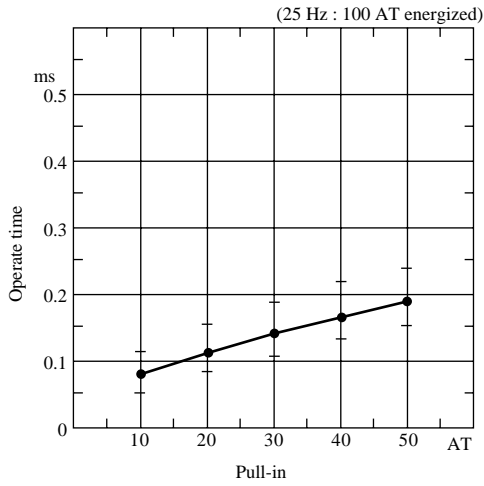
(5) Electrostatic capacitance



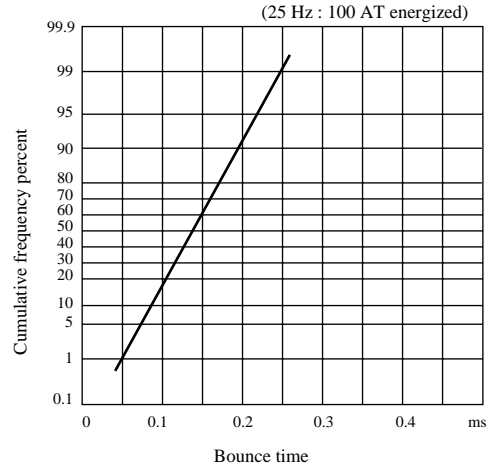
**OPERATING CHARACTERISTICS**

Parameter	Rated Value			Unit
	Min.	Typ.	Max.	
Operate Time	—	—	0.3	ms
Bounce Time	—	—	0.3	ms
Release Time	—	—	0.05	ms
Resonant Frequency	9000	11000	13000	Hz
Maximum Operating Frequency	—	—	500	Hz

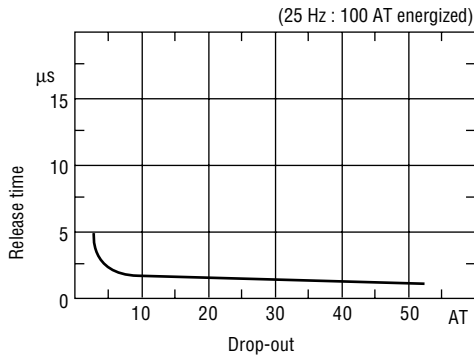
(1) Operate time



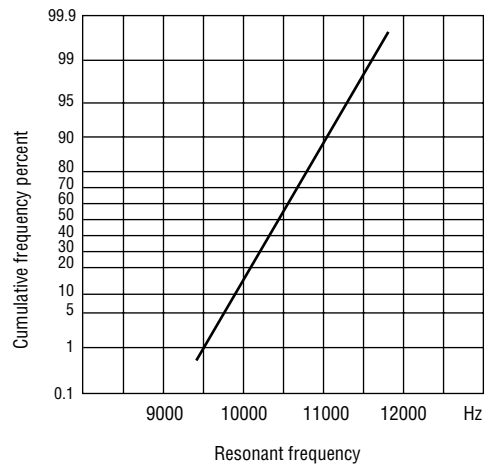
(2) Bounce time



(3) Release time

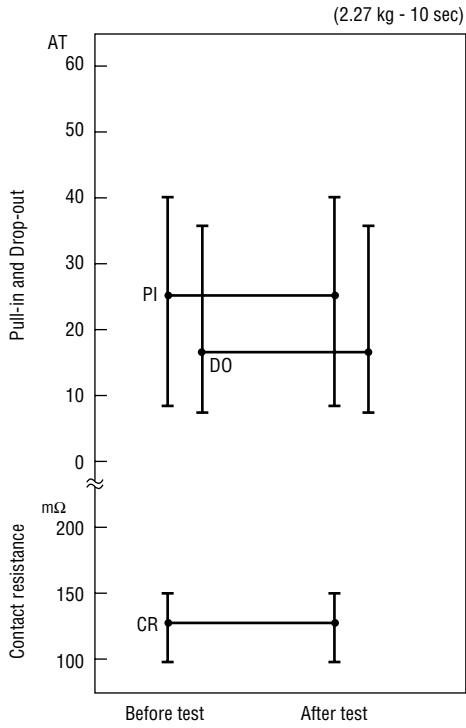


(4) Resonant frequency

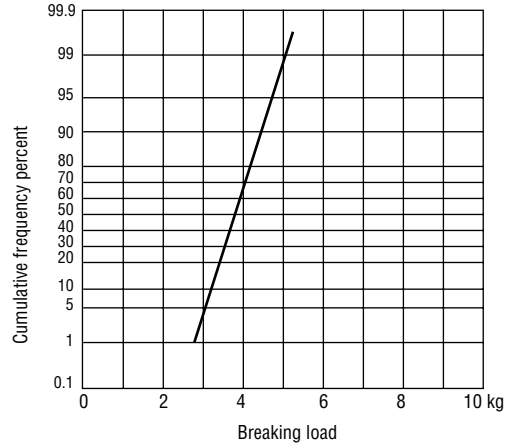


**MECHANICAL CHARACTERISTICS**

(1) Lead tensile test (static load)

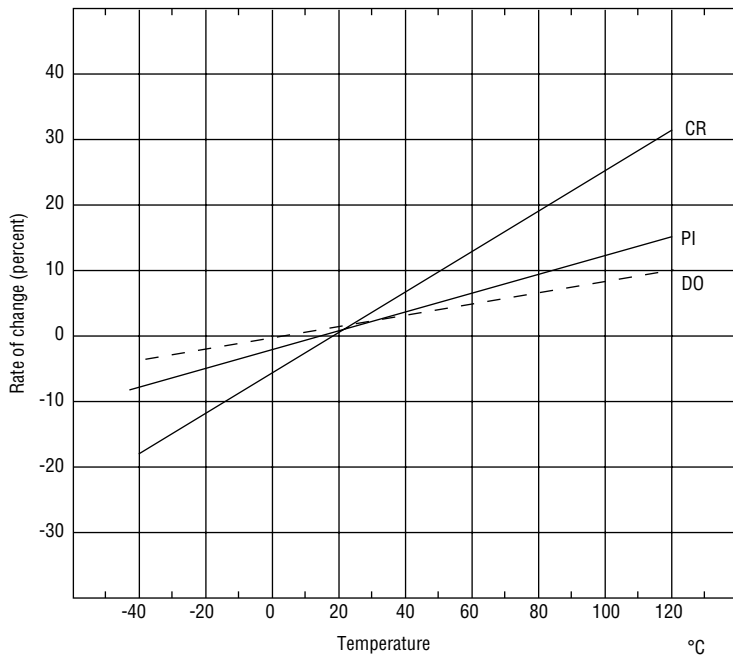


(2) Lead tensile strength

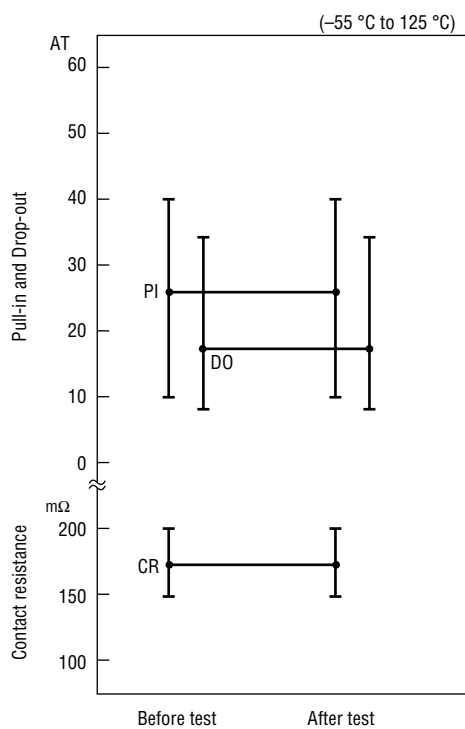


**ENVIRONMENTAL CHARACTERISTICS**

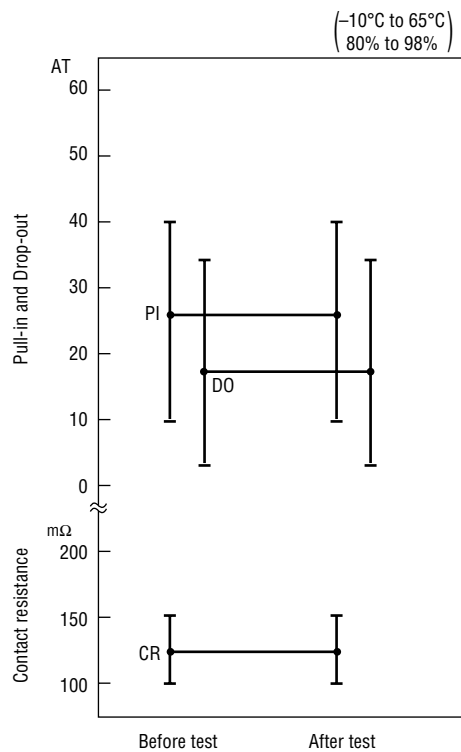
(1) Temperature characteristics



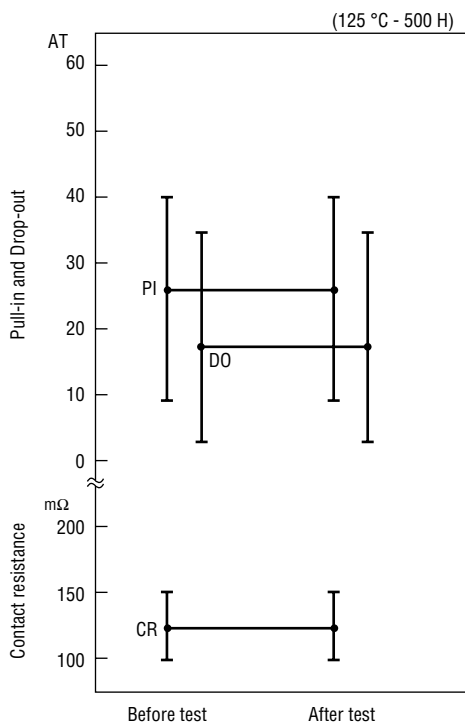
(2) Temperature cycle



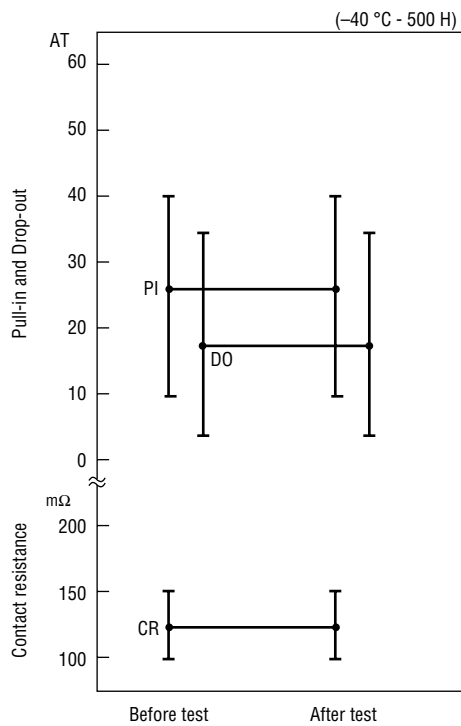
(3) Temperature and humidity cycle



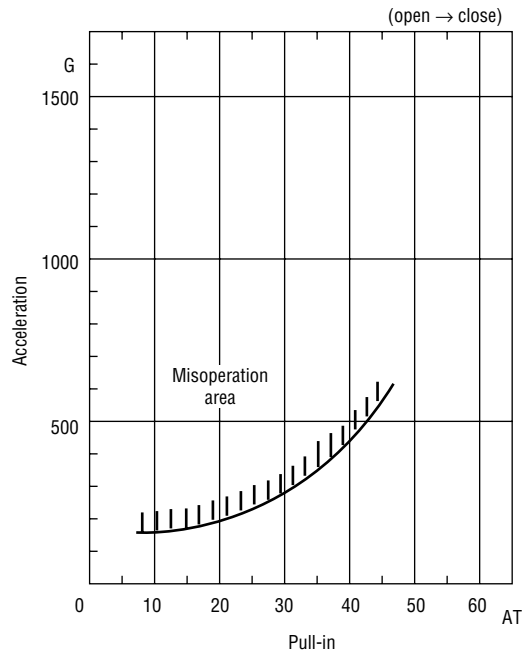
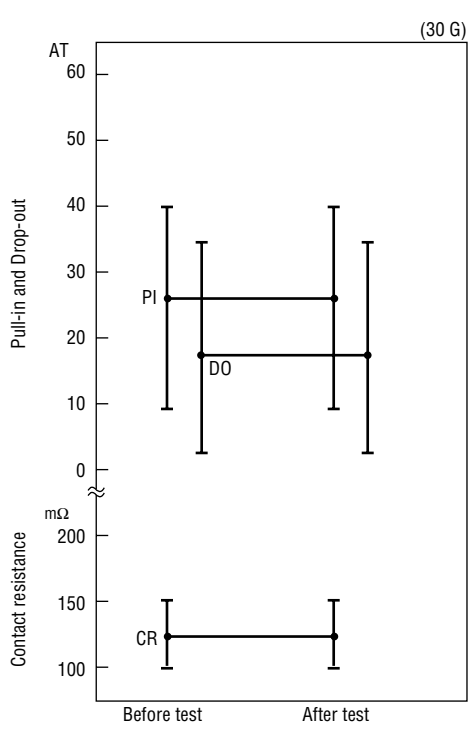
(4) High temperature storage test



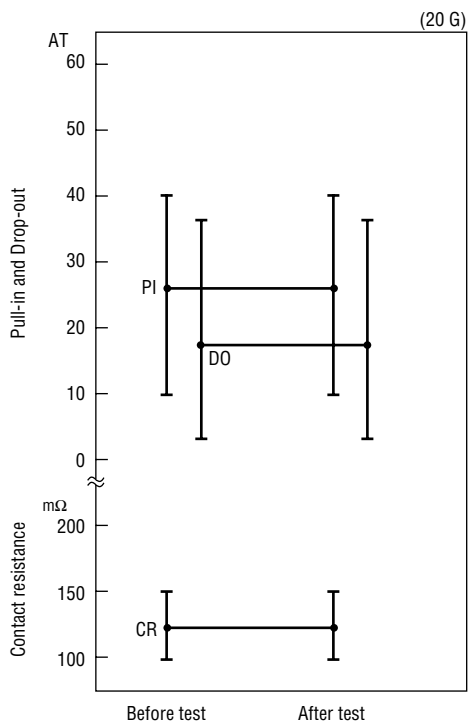
(5) Low temperature storage test



(6) Shock test



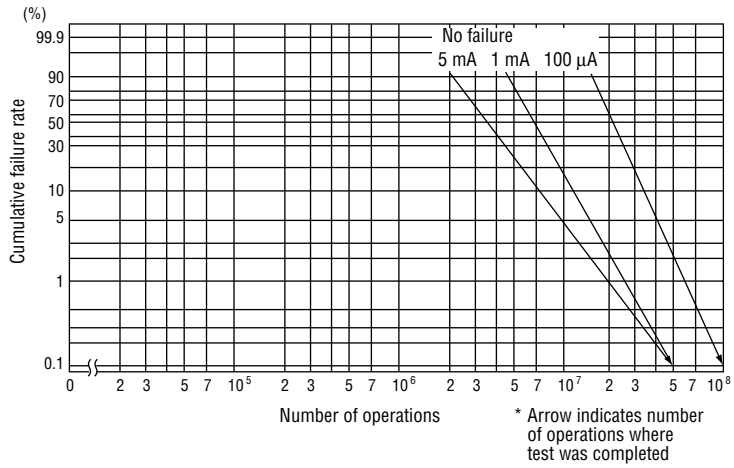
(7) Vibration test



**LIFE EXPECTANCY DATA: ORD213**

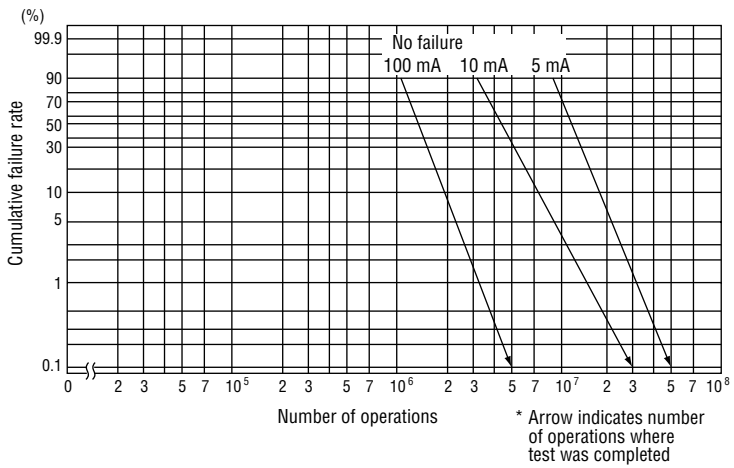
Load conditions

Voltage : 5 VDC  
 Current : 100  $\mu$ A, 1 mA, 5 mA  
 Load : Resistive load



Load conditions

Voltage : 12 VDC  
 Current : 5 mA, 10 mA, 100 mA  
 Load : Resistive load



Load conditions

Voltage : 24 VDC  
 Current : 1 mA, 10 mA, 50 mA  
 Load : Resistive load

