



# Impedance Miniature Reed Relays

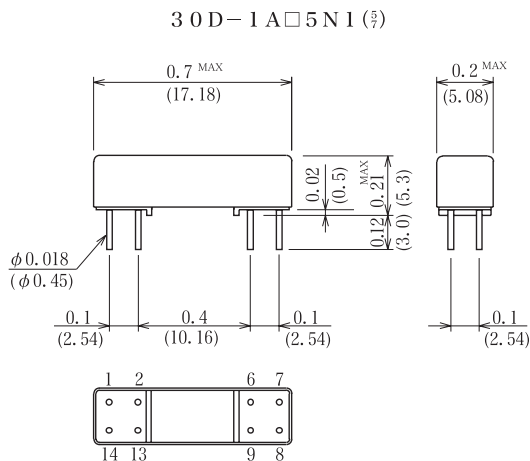
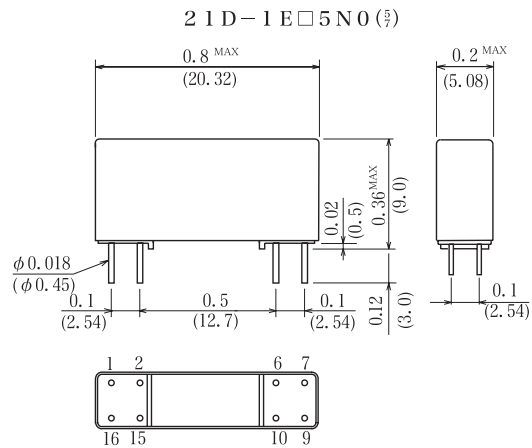
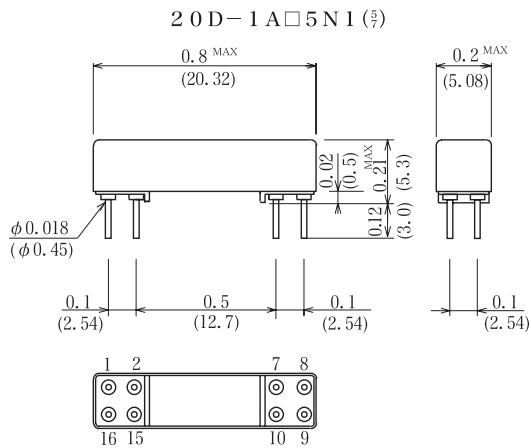


How to shorten delay time of signal by proper adjusted impedance comes to the point as conveying pulse signal switching relays. Delay time should be fixed by impedance (L) and electrostatic capacity (C) of the relay and its circuit, and calculated by " $\sqrt{LC}$ ".

Low stray capacitance reed relays with shorter distance between in and out will be needed. And we provide relays adjusted to 50Ω and 75Ω.

## Mechanical Dimensions

All dimensions are measured  
in inches (millimeters).





<b>20D,30D,21D Series</b>			50Ω Coaxial	75Ω Coaxial	50Ω Coaxial	75Ω Coaxial	50Ω Coaxial	75Ω Coaxial	
			Model Number	Model Number	Model Number	Model Number	Model Number	Model Number	
			20D-1A□5N15	20D-1A□5N17	30D-1A□5N15	30D-1A□5N17	21D-1E□5N05	21D-1E□5N07	
Parameters	Test Condition	Units	1 Form A	1 Form A	1 Form A	1 Form A	1 Form C	1 Form C	
<b>Coil Specs</b>									
Nominal coil voltage		VDC		5	12		5	12	
Coil resistance	±10% at 20°C	Ω		160	600		90	600	
Operating voltage	15°C~35°C	VDC Max		3.6	8.8		3.6	9.6	
Operating voltage range	15°C~35°C	VDC		—	—		3.6/5.5	9.6/13.2	
Release voltage	15°C~35°C	VDC Min		0.8	1.2		0.7	1.2	
<b>Contact Ratings</b>									
Switching voltage	Max. DC/Peak AC resistance	Volts					100		
Switching current	Max. DC/Peak AC resistance	Amps					0.5		
Carry current	Max. DC/Peak AC resistance	Amps					1.0		
Contact rating	Max. DC/Peak AC resistance	Watts					10		
Life expectancy	1V, 10mA	×10 <sup>3</sup> Cyc					1000		
Contact resistance	Maximum initial	mΩ					150		
Contact resistance stability	Maximum initial	mΩ					5.0		
<b>Relay Specifications</b>									
Insulation resistance	Between all isolated pins at 100V 20°C 40%RH	Ω	10 <sup>11</sup>	10 <sup>11</sup>	10 <sup>11</sup>	10 <sup>11</sup>	10 <sup>10</sup>	10 <sup>10</sup>	
Capacitance	Across open contacts	pF-Max	0.3	0.3	0.3	0.3	0.5	0.5	
	Contact to Shield		Shield guarding Contacts open; Make-shield Break-shield Shield floating Shield guarding: Make-Coil Break-Coil	2.0	1.8	2.0	1.8	1.8	1.8
Open contact to coil						4.0	4.0		
Dielectric strength	Between contacts Contacts to shield	VDC	200	200	200	200	200	200	
Operating time (Including. bounce)	At nominal coil voltage, 100Hz Square wave	msec	0.5	0.5	0.5	0.5	1.0	1.0	
Release time	Diode suppression	msec	0.5	0.5	0.5	0.5	1.0	1.0	
Return loss	MAX, 0~1000MHz	dB	21	21	21	21	18	15	
Insertion loss	MAX, 0~500MHz								
	MAX, 0~1000MHz		0.5	0.5	0.5	0.5	0.5	0.6	
Isolation loss	MAX, 0~500MHz MAX, 0~1000MHz		20	20	20	20	20	20	
Environmental Ratings	Measurement reference conditons Temp.: 15°C~35°C Humidity: 25%~85%RH Atmospheric pressure: 860~1060hPa Storage temp.: -40°C~+80°C Operating temp.: -20°C~+60°C The operating and Release Voltage and the coil resistance are specified at 20°C. These values change approximately 0.4%/°C change in the ambient temperature. Vibration: 20Gs to 2000Hz Shock: 50Gs	Schematics Top view							

**Notes :**

- (1) Values are specified with a resistive load being applied. A contact protective circuit is required for C and L Type loads.
- (2) The values of the operating time and release time however, are when the rated coil voltage is applied and a clamp diode is attached.
- (3) The relays mounted in the Model 21D-fully observe the (+) and (-) polarity designations of the coil drive voltage.

**ORDERING CODE**

2 0 D - 1 A □ 5 N 1 □  
(1) (2)

3 0 D - 1 A □ 5 N 1 □  
(1) (2)

2 1 D - 1 E □ 5 N 0 □  
(1) (2)

Example 20D-1A15N15 Represents Series 20D with 1Form A, Dry Reed (Rhodium), Coil Voltage 5V, Coaxial Shield and 50 Ω Impedance.

(1) Coil Voltage  
1-5VDC  
2-12VDC

(2) Special Coad  
5-50Ω Impedance  
7-75Ω Impedance