



Miniature Relay

DS2Y RELAYS



RoHS compliant

FEATURES

1. 2 Form C contact
2. High sensitivity-200 mW nominal operating power
3. High breakdown voltage 1500 V FCC surge between open contacts
4. DIP-2C type matching 16 pin IC socket
5. Sealed construction

TYPICAL APPLICATIONS

1. Telecommunication equipment
2. Office equipment
3. Computer peripherals
4. Security alarm systems
5. Medical equipment

ORDERING INFORMATION

DS2Y-S -

Operating function

Nil: Single side stable

Nominal coil voltage

DC 3, 5, 6, 9, 12, 24, 48 V

Note: UL/CSA approved type is standard.

TYPES

Contact arrangement	Nominal coil voltage	Single side stable type
		Part No.
2 Form C	3 V DC	DS2Y-S-DC3V
	5 V DC	DS2Y-S-DC5V
	6 V DC	DS2Y-S-DC6V
	9 V DC	DS2Y-S-DC9V
	12 V DC	DS2Y-S-DC12V
	24 V DC	DS2Y-S-DC24V
	48 V DC	DS2Y-S-DC48V

Standard packing: Tube: 50 pcs.; Case: 500 pcs.

RATING**1. Coil data**

Single side stable type

Nominal coil voltage	Pick-up voltage (at 20°C 68°F)	Drop-out voltage (at 20°C 68°F)	Nominal operating current [±10%] (at 20°C 68°F)	Coil resistance [±10%] (at 20°C 68°F)	Nominal operating power	Max. applied voltage (at 50°C 122°F)
3 V DC	70%V or less of nominal voltage (Initial)	10%V or more of nominal voltage (Initial)	66.7 mA	45 Ω	200 mW	200%V of nominal voltage
5 V DC			40 mA	125 Ω		
6 V DC			33.3 mA	180 Ω		
9 V DC			22.2 mA	405 Ω		
12 V DC			16.7 mA	720 Ω		
24 V DC			8.3 mA	2,880 Ω		
48 V DC			6.3 mA	7,680 Ω	300 mW	

2. Specifications

Characteristics	Item		Specifications
Contact	Arrangement	2 Form C	
	Initial contact resistance, max.	Max. 50 mΩ (By voltage drop 6 V DC 1A)	
	Contact material	Ag+Au clad	
Rating	Max. switching power	60 W, 62.5 VA (resistive load)	
	Max. switching voltage	220 V DC, 250 V AC	
	Max. switching current	2 A	
	Max. carrying current	3 A	
	Minimum operating power	Approx. 98 mW (147 mW: 48 V)	
	Nominal operating power	Approx. 200 mW (300 mW: 48 V)	
Electrical characteristics	Insulation resistance (Initial)	Min. 100MΩ (at 500V DC) Measurement at same location as "Initial breakdown voltage" section.	
	Breakdown voltage (Initial)	Between open contacts	750 Vrms for 1min. (Detection current: 10mA.)
		Between contact sets	1,000 Vrms for 1min. (Detection current: 10mA.)
		Between contact and coil	1,000 Vrms for 1min. (Detection current: 10mA.)
	FCC surge breakdown voltage between contacts and coil	1,500 V	
	Temperature rise (at 20°C 68°F)	Max. 65°C with nominal coil voltage across coil and at nominal switching capacity	
Mechanical characteristics	Operate time [Set time] (at 20°C 68°F)	Approx. 4 ms [approx. 3 ms] (Nominal coil voltage applied to the coil, excluding contact bounce time.)	
	Release time [Reset time] (at 20°C 68°F)	Approx. 3 ms [approx. 3 ms] (Nominal coil voltage applied to the coil, excluding contact bounce time.) (without diode)	
	Shock resistance	Functional	Min. 490 m/s ² (Half-wave pulse of sine wave: 11 ms; detection time: 10μs.)
		Destructive	Min. 980 m/s ² (Half-wave pulse of sine wave: 6 ms.)
	Vibration resistance	Functional	10 to 55 Hz at double amplitude of 3.3 mm (Detection time: 10μs.)
		Destructive	10 to 55 Hz at double amplitude of 5 mm
Expected life	Mechanical	Min. 10 ⁸	
	Electrical	Min. 5×10 ⁵ (1 A 30 V DC), Min. 10 ⁵ (2 A 30 V DC)	
Conditions	Conditions for operation, transport and storage*	Ambient temperature: -40°C to +70°C -40°F to +158°F Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature)	
	Max. operating speed (at rated load)	60 cpm	
Unit weight		Approx. 4g .14oz	

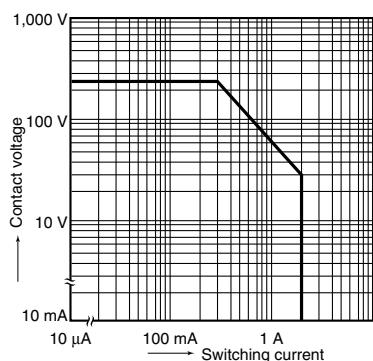
Notes: *1 This value can change due to the switching frequency, environmental conditions, and desired reliability level, therefore it is recommended to check this with the actual load. TX/TX-S/TX-D relay AgPd contact type are available for low level load switching (10V DC, 10mA max. level).

*2 Half-wave pulse of sine wave: 11ms; detection time: 10μs

*3 Refer to "AMBIENT ENVIRONMENT" in GENERAL APPLICATION GUIDELINES.

REFERENCE DATA

1. Maximum switching capacity

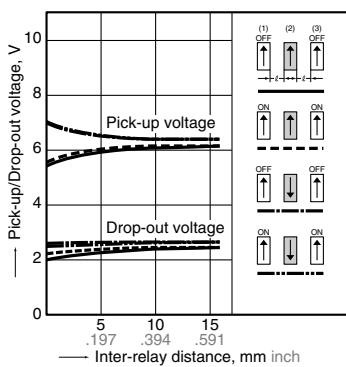


4-(1) Influence of adjacent mounting

Tested sample: DS2Y-S-DC12V, 10 pcs.
Ambient temperature: 20°C 68°F

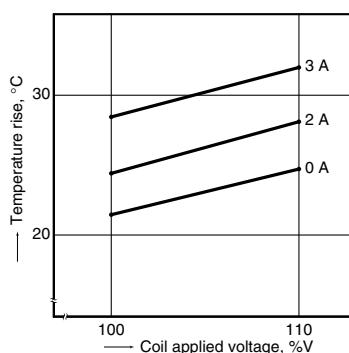
TEST METHOD

1. Apply nominal voltage to No. (1) and (3) DS2Y relays.
2. Measure pick-up voltage and drop-out voltage of No. (2) relay when inter-relay distance (ℓ) changes.



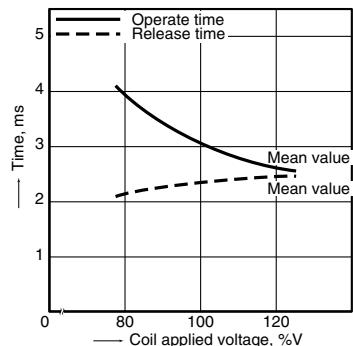
2. Coil temperature rise (Single side stable)

Tested sample: DS2Y-S-DC12V, 5 pcs.
Measured portion: Inside the coil
Ambient temperature: 21°C to 25°C 70°F to 77°F



3. Operate/release time for single side stable (Without diode)

Tested sample: DS2Y-S-DC12V, 10 pcs.
Ambient temperature: 20°C 68°F

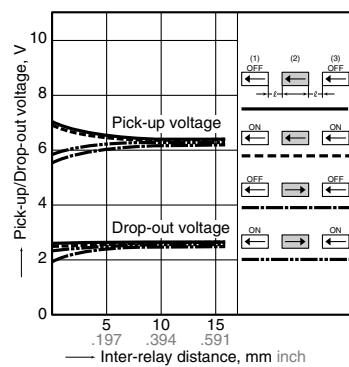


4-(2) Influence of adjacent mounting

Tested sample: DS2Y-S-DC12V, 10 pcs.
Ambient temperature: 20°C 68°F

TEST METHOD

1. Apply nominal voltage to No. (1) and (3) DS2Y relays.
2. Measure pick-up voltage and drop-out voltage of No. (2) relay when inter-relay distance (ℓ) changes.

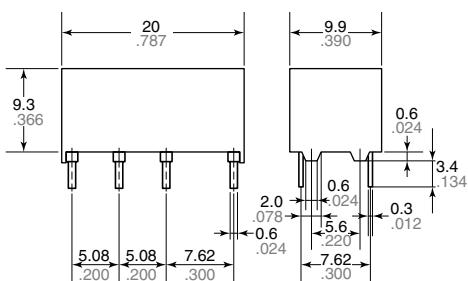


DIMENSIONS (mm inch)

Single side stable

CAD Data

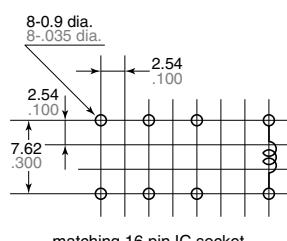
External dimensions



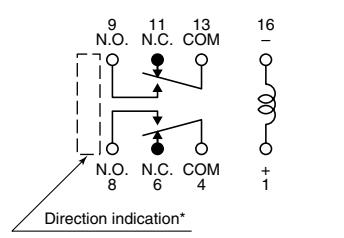
General tolerance: $\pm 0.3 \pm 0.012$

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://industrial.panasonic.com/ac/e/>

PC board pattern (Copper-side view)



Schematic (Bottom view) (Deenergized position)



For general cautions for use, please refer to the "Cautions for use of Signal Relays" or "General Application Guidelines".

Mouser Electronics

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[DS2Y-S-DC5V](#) [DS2Y-S-DC12V](#) [DS2Y-S-DC24V](#) [DS2Y-S-DC3V](#) [DS2Y-S-DC1.5V](#) [DS2Y-S-DC6V](#) [DS2Y-S-DC9V](#)
[DS2Y-S-DC48V](#) [DS2Y-S-DC12V-TB](#) [DS2Y-S-DC24V-TB](#) [DS2Y-S-DC48V-TB](#) [DS2Y-S-DC5V-TB](#)