

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	3V DC	DS2Y-S-DC3V
	5V DC	DS2Y-S-DC5V
	6V DC	DS2Y-S-DC6V
	9V DC	DS2Y-S-DC9V
	12V DC	DS2Y-S-DC12V
	24V DC	DS2Y-S-DC24V
	48V DC	DS2Y-S-DC48V

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

DS2Y

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

2. Specifications

Characteristics	Item	Specifications	
Contact	Arrangement	2 Form C	
	Initial contact resistance, max.	Max. 50 m Ω (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. 100M Ω (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	
	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)		
Mechanical characteristics	Shock resistance	Functional	Min. 490 m/s ² (Half-wave pulse of sine wave: 11 ms; detection time: 10 μ s.)
		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: 10 μ s.)
		Destructive	10 to 55 Hz at double amplitude of 5 mm
Expected life	Mechanical	Min. 10 ⁸	
	Electrical	5 $\times 10^5$ (1 A 30 V DC), 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	

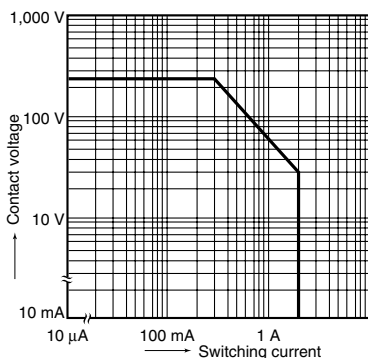
Notes: *1 This value can change due to the switching frequency, environmental conditions, and desired reliability level, therefore it is recommended to check this with the actual load. (TX/TX-S/TX-D relay AgPd contact type are available for low level load switching [10V DC, 10mA max. level])

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

*3 Refer to 6. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT (Page 24).

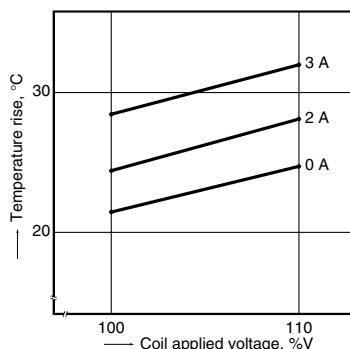
REFERENCE DATA

1. Maximum switching capacity



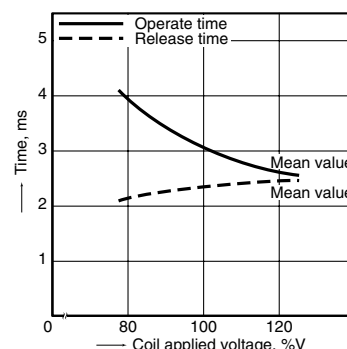
2. Coil temperature rise (Single side stable)

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

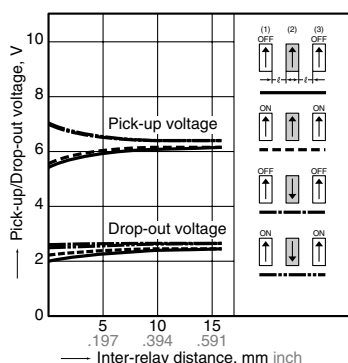


4-(1) Influence of adjacent mounting

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.

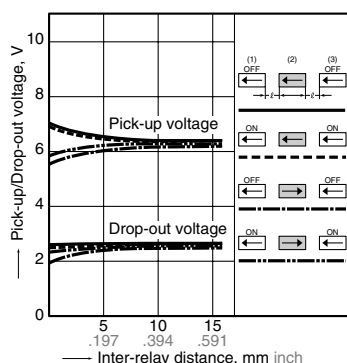


4-(2) Influence of adjacent mounting

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.



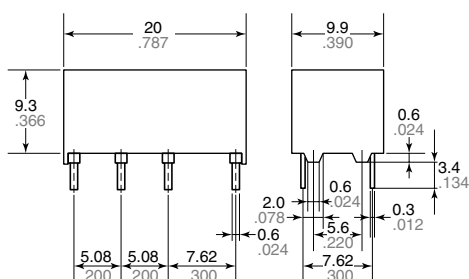
DIMENSIONS (mm inch)

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

Single side stable

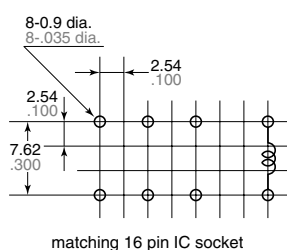
CAD Data

External dimensions



General tolerance: $\pm 0.3 \pm 0.12$

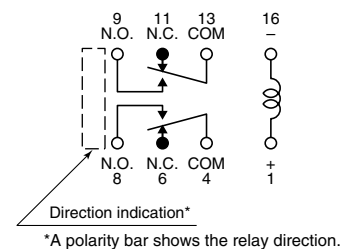
PC board pattern (Copper-side view)



matching 16 pin IC socket

Tolerance: $\pm 0.1 \pm 0.004$

Schematic (Bottom view) (Deenergized position)



*A polarity bar shows the relay direction.

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