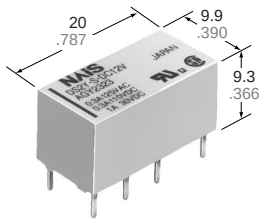
NAiS

MINIATURE RELAY

DS2Y-RELAYS



mm inch

FEATURES

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

SPECIFICATIONS

Contact

Arrangement			2 Form C
Initial contact resistance, max. (By voltage drop 6 V DC 1 A)			50 mΩ
Contact material			Gold-clad sliver
Rating (resistive)	Max. switching power		60 W, 62.5 VA
	Max. switching voltage		220 V DC, 250 V AC
	Max. switching current		2 A
	Max. carrying current		3 A
Expected life (min. operations)	Mechanical		1×10^8
	Electrical	1 A 30 V DC	5×10^5
		2 A 30 V DC	1×10^5

Coil (polarized) (at 20°C 68°F)

Single side stable	Minimum operating power	Approx. 98 mW (147 mW: 48 V)
	Nominal operating power	Approx. 200 mW (300 mW: 48 V)
2 coil latching	Minimum set and reset power	Approx. 88 mW (177 mW: 48 V)
	Nominal set and reset power	Approx. 180 mW (360 mW: 48 V)

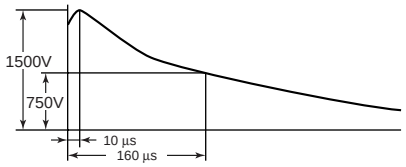
Remarks

* Specifications will vary with foreign standards certification ratings.
*1 Measurement at same location as "Initial breakdown voltage" section
*2 Detection current: 10mA
*3 Excluding contact bounce time
*4 Half-wave pulse of sine wave: 11ms, detection time: 10µs
*5 Half-wave pulse of sine wave: 6ms
*6 Detection time: 10µs
*7 Refer to 5. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT (Page 61).

Characteristics (at 20°C 68°F)

Initial insulation resistance*1		Min. 100 MΩ (at 500 V DC)
Initial breakdown voltage*2	Between open contacts	750 Vrms
	Between contact sets	1,000 Vrms
	Between contact and coil	1,000 Vrms
FCC surge voltage between contacts and coil		1,500 V
Operate time*3 (at nominal voltage)		Approx. 4 ms
Release time*3 (at nominal voltage)		Approx. 3 ms
Set time*3 (latching) (at nominal voltage)		Approx. 3 ms
Reset time*3 (latching) (at nominal voltage)		Approx. 3 ms
Temperature rise		Max. 65°C with nominal voltage across coil and at nominal switching capacity
Shock resistance	Functional*4	Min. 490 m/s² {50 G}
	Destructive*5	Min. 980 m/s² {100 G}
Vibration resistance	Functional*6	10 to 55 Hz at double amplitude of 3.3 mm
	Destructive	10 to 55 Hz at double amplitude of 5 mm
Conditions for operation, transport and storage*7 (Not freezing and condensing at low temperature)	Ambient temp.	–40°C to +70°C –40°F to +158°F
	Humidity	5 to 85% R.H.
Unit weight		Approx. 4 g .14 oz

FCC (Federal Communication Commission) requests following standard as Breakdown Voltage specification.



TYPICAL APPLICATIONS

- Telecommunication equipment
- Office equipment
- Computer peripherals
- Security alarm systems
- Medical equipment

ORDERING INFORMATION

Ex DS2Y-S | L2 | DC12 V | R

Operating function	Coil voltage	Polarity
Nil: Single side stable L2: 2 coil latching	DC 1.5, 3, 5, 6, 9, 12, 24, 48 V	Nil: Standard polarity R: Reverse polarity

(Note) Standard packing: Carton: 50 pcs. Case: 500 pcs.

TYPES AND COIL DATA (at 20°C 68°F)

Single side stable

Nominal voltage, V DC	Part No.	Pick-up voltage, V DC (max.)	Drop-out voltage, V DC (min.)	Nominal operating current mA (±10%)	Coil resistance, Ω (±10%)	Nominal operating power mW	Maximum allowable voltage, V DC (at 50°C 122°F)
1.5	DS2Y-S-DC1.5V	1.05	0.15	132.7	11.3	200	3
3	DS2Y-S-DC3V	2.10	0.3	66.7	45	200	6
5	DS2Y-S-DC5V	3.5	0.5	40	125	200	10
6	DS2Y-S-DC6V	4.2	0.6	33.3	180	200	12
9	DS2Y-S-DC9V	6.3	0.9	22.2	405	200	18
12	DS2Y-S-DC12V	8.4	1.2	16.7	720	200	24
24	DS2Y-S-DC24V	16.8	2.4	8.3	2,880	200	48
48	DS2Y-S-DC48V	33.6	4.8	6.3	7,680	300	86

(Note) Standard packing: Carton: 50 pcs. Case: 500 pcs.

2 coil latching

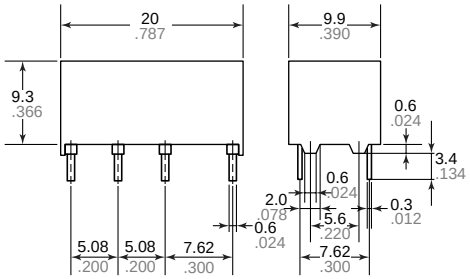
Nominal voltage, V DC	Part No.	Reset set, V DC (max.)	Nominal operating current mA (±10%)		Coil resistance, Ω (±10%)		Nominal operating power, mW		Maximum allowable voltage, V DC (at 50°C 122°F)
			Set	Reset	Set	Reset	Set	Reset	
1.5	DS2Y-SL2-DC1.5V	1.05	120	120	12.5	12.5	180	180	3
3	DS2Y-SL2-DC3V	2.1	60	60	50	50	180	180	6
5	DS2Y-SL2-DC5V	3.5	36	36	139	139	180	180	10
6	DS2Y-SL2-DC6V	4.2	30	30	200	200	180	180	12
9	DS2Y-SL2-DC9V	6.3	20	20	450	450	180	180	18
12	DS2Y-SL2-DC12V	8.4	15	15	800	800	180	180	24
24	DS2Y-SL2-DC24V	16.8	7.5	7.5	3,200	3,200	180	180	48
48	DS2Y-SL2-DC48V	33.6	7.5	7.5	6,400	6,400	360	360	72

(Note) Standard packing: Carton: 50 pcs. Case: 500 pcs.

DIMENSIONS

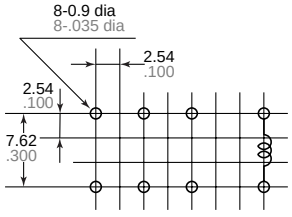
mm inch

Single side stable



General tolerance: ±0.3 ± .012

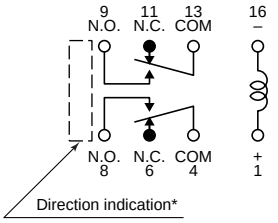
PC board pattern (Copper-side view)



matching 16 pin IC socket

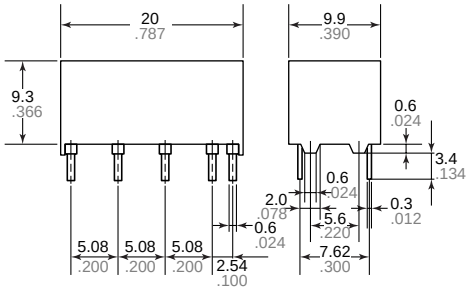
Tolerance: ±0.1 ± .004

Schematic (Bottom view)
(Deenergized position)



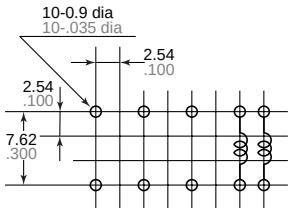
*A polarity bar shows the relay direction.

2 coil latching



General tolerance: ±0.3 ± .012

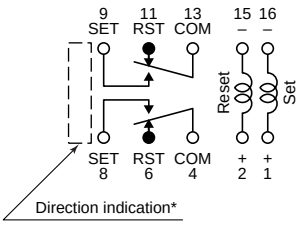
PC board pattern (Copper-side view)



matching 16 pin IC socket

Tolerance: ±0.1 ± .004

Schematic (Bottom view)
(Reset position)

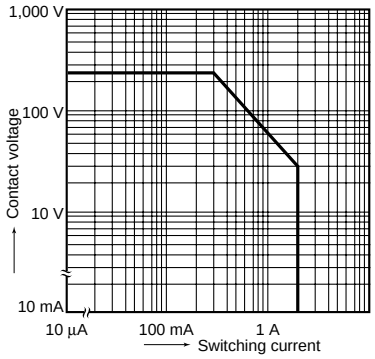


*A polarity bar shows the relay direction.

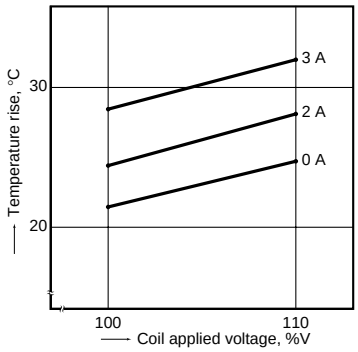
Diagram shows the “reset” posetion when terminals 2 and 15 are energized. Energize terminals 1 and 16 to transfer contacts.

REFERENCE DATA

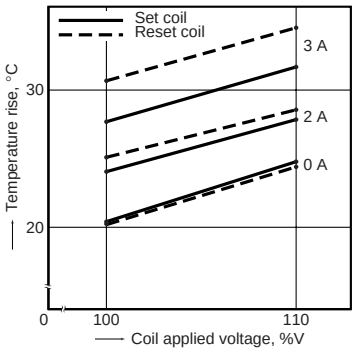
1. Maximum switching capacity



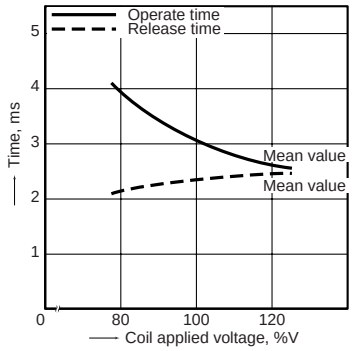
2-(1) Coil temperature rise (Single side stable)
Tested sample: DS2Y-S-DC12V, 5 pcs.
Measured portion: Inside the coil
Ambient temperature: 21°C to 25°C 70°F to 77°F



2-(2) Coil temperature rise 2 coil latching
Tested sample: DS2Y-SL2-DC12V, 5 pcs.
Measured portion: Inside the coil
Ambient temperature: 21°C to 25°C 70°F to 77°F

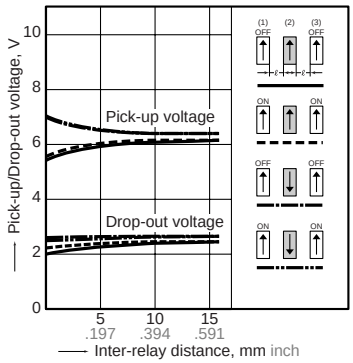


3. Operate/release time for single side stable (Without diode)
Tested sample: DS2Y-S-DC12V, 10 pcs.
Ambient temperature: 20°C 68°F



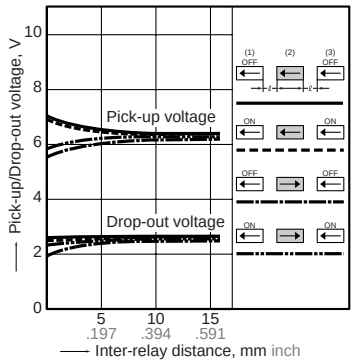
4-(1) Influence of adjacent mounting
Tested sample: DS2Y-S-DC12V, 10 pcs.
Ambient temperature: 20°C 68°F

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.



For Cautions for Use, see Relay Technical Information