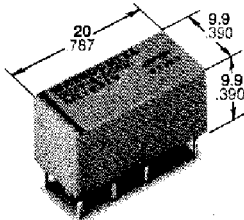


DS2Y

NAIS

**2 FORM C—200 mW
SENSITIVE MINIATURE RELAY
1500 V FCC SURGE
WITHSTAND**

**DS2Y-
RELAYS**



mm inch

**UL File No.: E43149
CSA File No.: LR26550**

- 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 silver
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
UL/CSA rating	0.3 A 125 V AC 0.3 A 110 V DC 1 A 30 V DC
Expected life (min. operations)	
Mechanical	1×10 ⁸
Electrical 1 A 30 V DC	5×10 ⁵
Electrical 2 A 30 V DC	1×10 ⁵

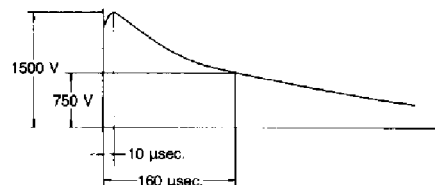
Coil (polarized) (at 20°C 68°F)

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)

Characteristics (at 25°C 77°F, 50% Relative humidity)

Operate time (at nominal voltage)	Approx. 4 msec.	
Release time (at nominal voltage)	Approx. 3 msec.	
Set time (latching) (at nominal voltage)	Approx. 3 msec.	
Reset time (latching) (at nominal voltage)	Approx. 3 msec.	
Initial breakdown voltage		
Between open contacts	750 Vrms	
Between contact sets	1,000 Vrms	
Between contact and coil	1,000 Vrms	
Initial insulation resistance	Min. 1,000 MΩ (at 500 V DC)	
FCC surge voltage between open contacts	1,500 V	
Temperature rise	Max. 65 deg.	
Ambient temperature	-40°C to +70°C -40°F to +158°F	
Shock resistance	Functional	Min. 50 G
	Destructive	Min. 100 G
Vibration resistance	Functional	20 G, 10 to 55 Hz at double amplitude of 3.3 mm
	Destructive	30 G, 10 to 55 Hz at double amplitude of 5 mm
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 — DC12V — 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

(Notes) 1. For UL/CSA recognized types, add suffix UL/CSA.
2. 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

2 coil latching

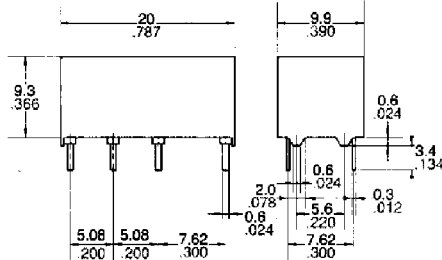
Nominal voltage, V DC	Part No.	Reset set, V DC (max.)	Nominal operating current mA (±10%)		Coil resistance, Ω (±10%)		Nominal operating power, mW		Maximum allowable voltage, V DC (at 50°C 122°F)
			Set	Reset	Set	Reset	Set	Reset	
1.5	DS2Y-SL2-DC1.5V	1.05	120		12.5		180		3
3	DS2Y-SL2-DC3V	2.1	60		50		180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

DIMENSIONS

mm inch

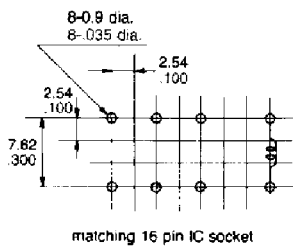
Single side stable

General tolerance: ±0.3 ±.012



PC board pattern (Copper-side view)

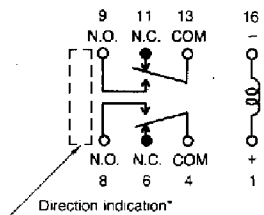
Tolerance: ±0.1 ±.004



*A polarity bar shows the relay direction.

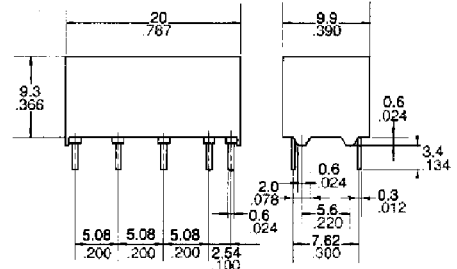
Schematic (Bottom view)

(Deenergized position)



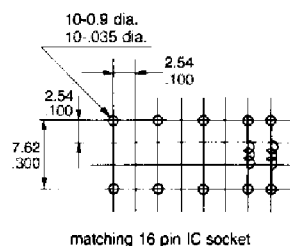
2 coil latching

General tolerance: ±0.3 ±.012



PC board pattern (Copper-side view)

Tolerance: ±0.1 ±.004



*A polarity bar shows the relay direction.

Schematic (Bottom view)

(Reset position)

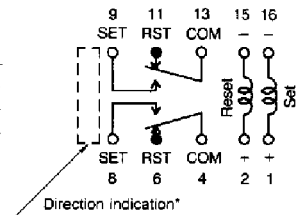
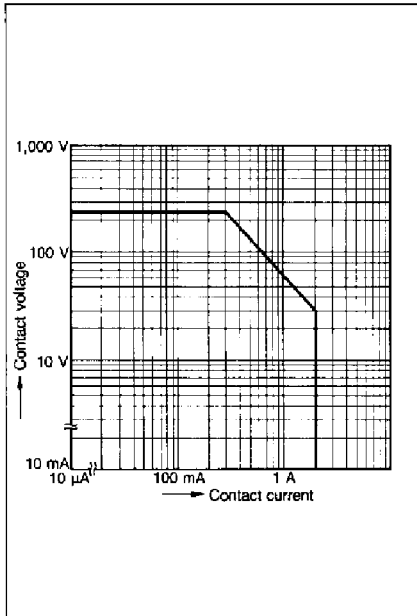


Diagram shows the "reset" position when terminals 2 and 15 are energized. Energize terminals 1 and 16 to transfer contacts.

DS2Y

DATA

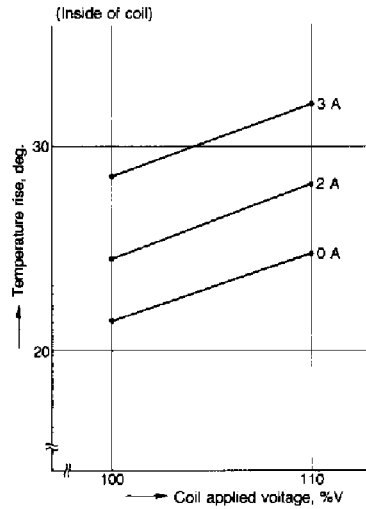
Maximum switching power



Coil temperature rise

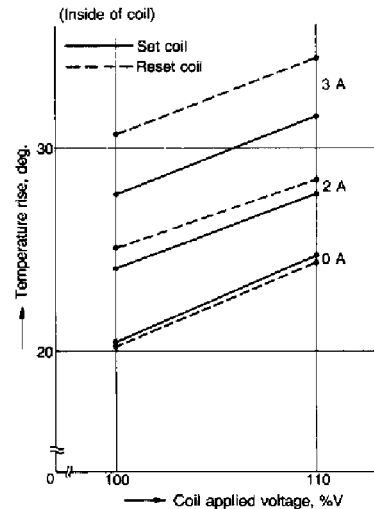
1. Single side stable

Ambient temperature: 21°C to 25°C 70°F to 77°F
Sample: DS2Y-S-DC12V, 5 pcs.



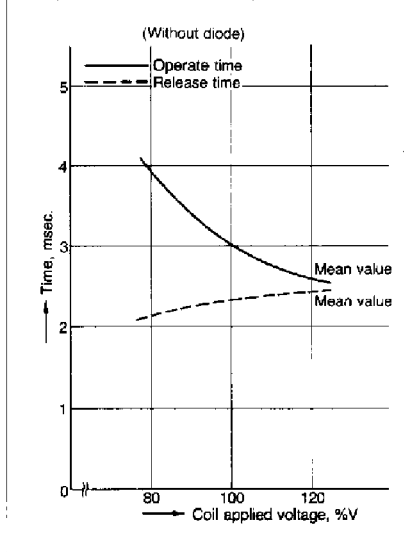
2. 2 coil latching

Ambient temperature: 21°C to 25°C 70°F to 77°F
Sample: DS2Y-SL2-DC12V, 5 pcs.



Operate/release time for single side stable

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

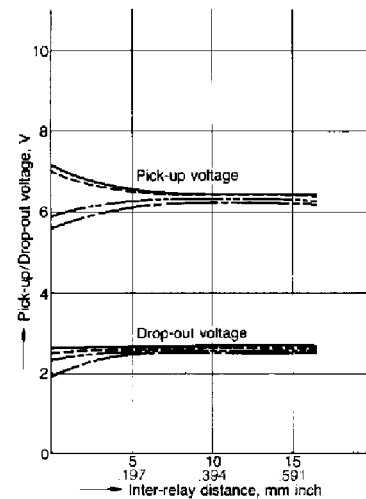
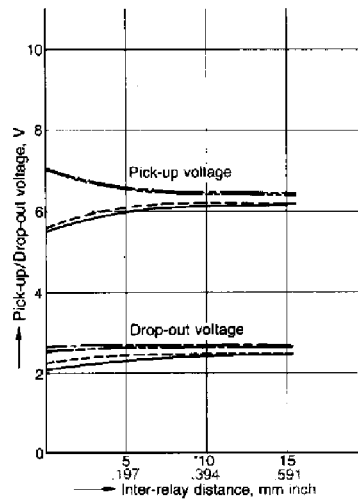
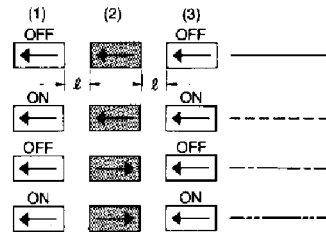
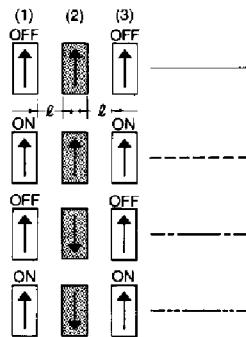


Influence of adjacent mounting

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

TEST METHOD

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



NOTES

1. **Coil operating power**
Pure DC current should be applied to the coil. And wave form should be rectangular. If its includes ripple, the ripple factor should be less than 5%. However, check it with the actual circuit since the characteristics are slightly different.
2. **External magnetic field**
Since DS2Y relay is highly sensitive polarized relay, its characteristics will be affected by a strong external magnetic field. So avoid using relays under that condition.
3. DS2Y relays do not operate with the opposite polarity because DS2Y relay are polarized.
4. In automatic cleaning, cleaning with the boiling method is recommended. Avoid ultrasonic cleaning for relays.