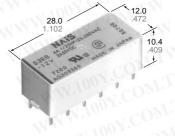


4 AMP POLARIZED HIGH DENSITY RELAY WITH HIGH SENSITIVITY



FEATURES

• A variety of contact arrangements 2 Form A 2 Form B, 3 Form A 1 Form B, 4 Form A

• Latching types available

• High sensitivity in small size 100 mW pick-up and 200 mW nominal operating power

• High shock and vibration resistance Shock: 50 G Vibration: 10 to 55 Hz at double amplitude of 3 mm .118 inch

S-RELAYS

D 1R

- Wide switching range From $100\mu A$
- 100 mV DC to 4 A 250 V AC
- Low thermal electromotive force Approx. 3 μV
- Dual-In-Line packaging arrangement
- Amber types available

mm inch

SPECIFICATIONS

Contacts

Arrangemen	t WY	2 Form A 2 Form B, 3 Form A 1 Form B, 4 Form A			
	t resistance, i drop 6 V DC 1	50 mΩ			
Initial contac	t pressure 🚿	Approx. 12 g .42 oz			
Contact mate	erial	Gold clad silver alloy			
Electrostatic	capacitance	Approx. 3pF			
Thermal electric (at nominal c	ctromotive for coil voltage)	Approx. 3μV			
Rating (resistive)	Nominal swi	tching capacity	4 A 250 V AC, 3 A 30 V DC		
	Maximum sw	vitching power	1,000 VA, 90 W		
	Maximum sv	vitching voltage	250 V AC, 30 V DC (48 VDC at less than 0.5 A		
	Max. switchi	ng current	4 A (AC), 3 A (DC)		
	Min. switchir	ng capacity**1	100µA 100 m V DC		
Expected	Mechanical	(at 50 cps)	108		
life (min.	Electrical	4 A 250 V AC	105		
operations)	(at 20 cpm)	3 A 30 V DC	2 × 10 ⁵		

Coil (polarized) (at 20°C 68°F)

Single side	Minimum operating power	Approx. 100 mW
stable	Nominal operating power	Approx. 200 mW
Latching	Minimum set and reset	Approx. 100 mW
	Nominal set and reset	Approx. 200 mW

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.

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
- \star_4 Half-wave pulse of sine wave: 11ms; detection time: 10 μs
- *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).

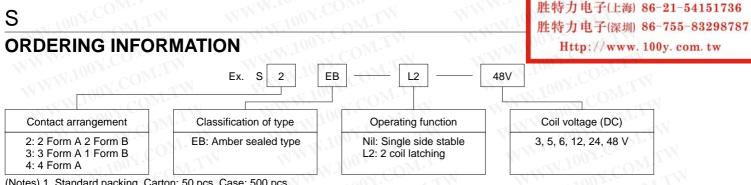
TYPICAL APPLICATIONS

Telecommunications equipment, data processing equipment, facsimiles, alarm equipment, measuring equipment.

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

	· · · · · · · · · · · · · · · · · · ·					
Max. operating speed				20 cpm for maximum load, 50 cps for low-level load (1 mA 1 V DC)		
Initial insulation resistance*1				10,000 MΩ at 500 V DC		
WW.	Between	n oper	n contacts	750 Vrms		
Initial breakdown	Between contact sets			1,000 Vrms		
voltage*2	Between contacts and coil			1,500 Vrms		
Operate time (at nominal v		t 20°C	Max. 15 ms (Approx. 8 ms)			
Release time (at nominal v				Max. 10 ms (Approx. 5 ms)		
Set time*3 (la (at nominal v		t 20°C	Max. 15 ms (Approx. 8 ms)			
Reset time*3 (latching) (at nominal voltage)(at 20°C)				Max. 15 ms (Approx. 8 ms)		
Initial contact bounce, max.				1 ms		
Temperature rise (at nominal voltage)(at 20°C)			Max. 35°C with nominal coil voltage and at maximum switching current			
Shock resistance		ctional*4	Min. 490 m/s ² {50 G}			
		Des	tructive*5	Min. 980 m/s ² {100 G}		
WW WW		Functional*6		176.4 m/s ² {18 G}, 10 to 55 Hz at double amplitude of 3 mm		
vibration res	istance	Destructive		235.2 m/s ² {24 G}, 10 to 55 Hz at double amplitude of 4 mm		
transport and storage*7 temp.			Ambient temp.	-40°C to +65°C -40°F to +149°F		
			Humidity	5 to 85% R.H.		
Unit weight				Approx. 8 g .28 oz		
(at nominal voltage)(at Shock resistance Vibration resistance Conditions for operation transport and storage* (Not freezing and condi- ing at low temperature		Fund Des Fund Des On, *7 dens-	ctional*4 tructive*5 ctional*6 tructive Ambient temp.	voltage and at maxim switching current Min. 490 m/s ² {50 C Min. 980 m/s ² {100 176.4 m/s ² {18 G}, 10 to at double amplitude of 235.2 m/s ² {24 G}, 10 to at double amplitude of -40° C to +65°C -40° F to +149°F 5 to 85% R.H.		

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(Notes) 1. Standard packing Carton: 50 pcs. Case: 500 pcs.

2. 1 coil latching also available as option. Contact our sales office for details.

3. UL/CSA approved type is standard.

TYPES AND COIL DATA at 20°C 68°F

Single side stable

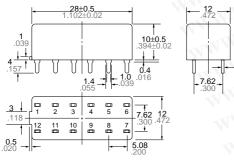
Туре	Nominal voltage, V DC	Pick-up voltage, V DC (max.)	Drop-out voltage, V DC (min.)	Nominal operating current, mA	Coil resistance, Ω (±10%)	Inductance, mH	Nominal operating power, mW	Maximum allowable voltage, V DC (40°C)
SDEB-3V	3	2.1	0.3	66.7	45	23	200	5.5
SDEB-5V	5	3.5	0.5	38.5	130	65	192	9.0
S□EB-6V	6	4.2	0.6	33.3	180	93	200	11.0
SDEB-12V	12	8.4	1.2	16.7 🔨	720	370	200	22.0
SDEB-24V	24	16.8	2.4	8.4	2,850	1,427	202	44.0
SDEB-48V	48	33.6	4.8	5.6	8,500	3,410	271	75.0

2 coil latching

Туре	Nominal voltage, V DC	Set and reset voltage, V DC (max.)	Nominal operating current, mA	Coil resistance, Ω (±10%)		Inductance, mH		Nominal operating power,	Maximum allowable voltage,
				Coil I	Coil II	Coil I	Coil II	mW	V DC (40°C)
SDEB-L2-3V	3 📢	2.1	66.7	45	45	10	10	200	5.5
SDEB-L2-5V	5	3.5	38.5	130	130	31	31	192	9.0
SDEB-L2-6V	6	4.2	33.7	180	180	40	40	200	11.0
SDEB-L2-12V	12	8.4	16.7	720	720	170	170	200	22.0
SDEB-L2-24V	24	16.8	8.4	2,850	2,850	680	680	202	44.0
SDEB-L2-48V	48	33.6	7.4	6,500	6,500	1,250	1,250	355	65.0

Note: Insert 2, 3 or 4 in D for contact form reguired.

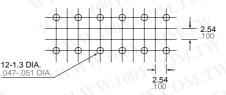
DIMENSIONS



General tolerance: $\pm 0.3 \pm .012$

0.5

PC board pattern (Copper-side view)



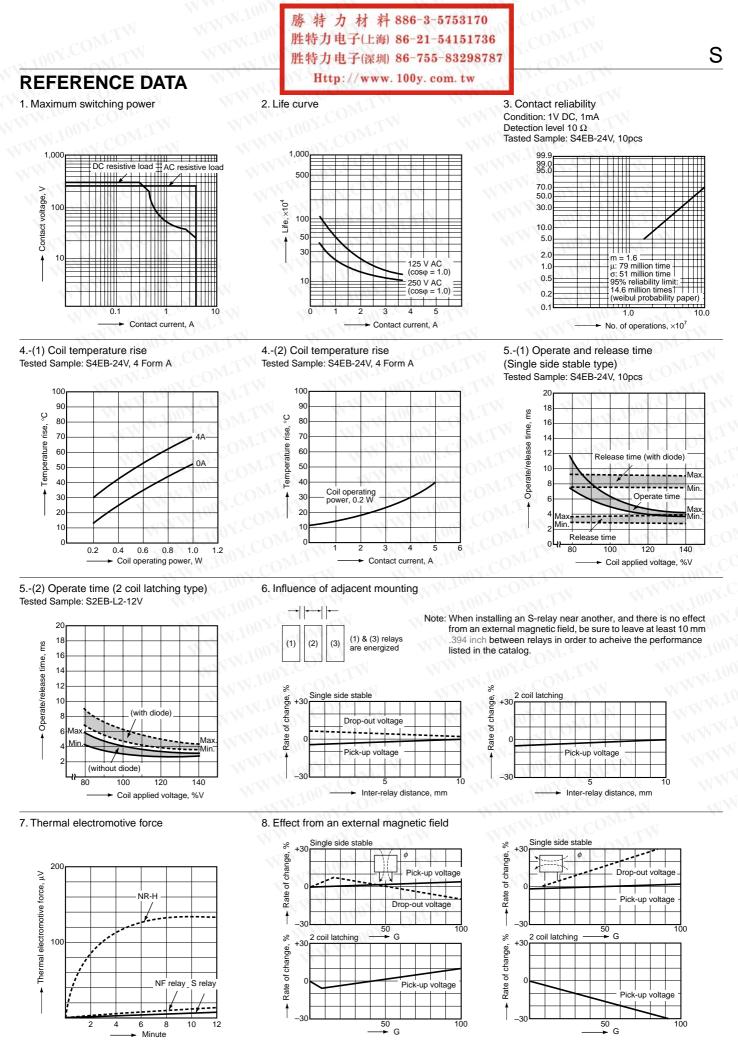
Tolerance: ±0.1 ±.003

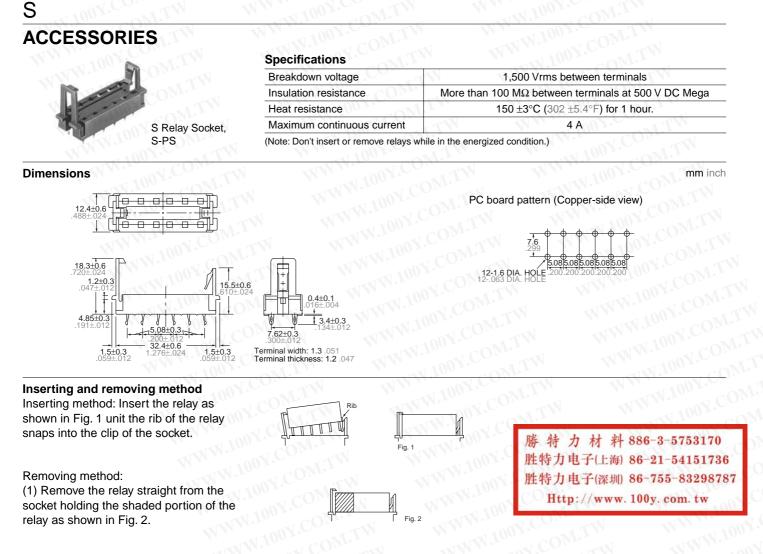
mm inch

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Schematic (Bottom v	view)		
Single side stable Deenergized position	2a2b 1 2 3 4 ↓ ↓ ↓ ↓ ↓ ↓	1 5 6 3a1b 1 2 3 4 5 6 1 -2 3 4 5 6 -1 -1 -1 -1 -1 -1 -1	4a 1 2 3 4 5 6
	$\begin{array}{c} \begin{array}{c} \begin{array}{c} \\ \\ \\ \end{array} \\ 12 \end{array} \begin{array}{c} \begin{array}{c} \\ \\ 11 \end{array} \begin{array}{c} \end{array} \begin{array}{c} \\ \\ \end{array} \\ 10 \end{array} \begin{array}{c} \\ 9 \end{array} \end{array}$	$\begin{array}{c} \bullet \\ \bullet $	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
2 coil latching Diagram shows the "reset" position when terminals 6 and 7 are energized. Energize terminals 1 and 12 to transfer contacts.	2a2b $1 \\ 3 \\ 3 \\ 5 \\ 6 \\ 12 \\ 11 \\ 10 \\ 9 \\ 12 \\ 11 \\ 10 \\ 9 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 $		$\begin{array}{c} 4a & 1 & 2 & 3 & 4 & 5 & 6 \\ \hline Reset & Set & 1 & 1 & 0 & 9 & 8 & 7 \end{array}$

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(2) When sockets are mounted in close proximity, use a slotted screw driver as shown in Fig. 3.

NOTES

 Special use of 2 coil latching types: 2 ways can be considered if 2 coil latching types are used as 1 coil latching types.
 (A) Reverse polarity is applied to the set coil of 2 coil latching type.

(B) By shorting terminals 12 and 7, apply plus to 1, minus to 6 at set and plus to 6, minus to 1 at reset. Applied coil voltage should be the same as the nominal. Operating power will be reduced to one-half.

CAUTIONS FOR USE

Based on regulations regarding insulation distance, there is a restriction on same-channel load connections between terminals No. 2, 3 and 4, 5, as well as between No. 8, 9 and 10, 11. See the figure below for an example.

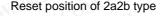
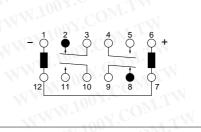
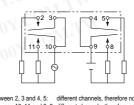
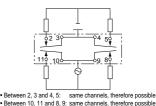


Fig. 3



2. Soldering operations should be accomplished as quick as possible; within 10 seconds at 250°C 482°F solder temperature or 3 seconds at 350°C 662°F. The header portion being sealed with epoxy resin, undue subjection to heat may cause loss of seal. Solder should not be permitted to remain on the header.





Between 2, 3 and 4, 5: different channels, therefore not possible
 Between 10, 11 and 8, 9: different channels, therefore not possible
 No good

Good

For Cautions for Use, see Relay Technical Information (Page 48 to 76).

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