



### 1a 8A, 1a1b/2a 5A small polarized power relays

## DSP RELAYS



**RoHS compliant**

Protective construction: Sealed type

## FEATURES

- 1. Compact with high contact rating**  
Even with small 10 mm .394 inch (H) x 11 mm .433 inch (W) x 20 mm .787 inch (L) (dimensions, high capacity switching is provided: 1a, 8 A 250 V AC; 2a and 1a1b, 5 A 250 V AC.
- 2. High switching capability**  
High contact pressure, low contact bounce, and wiping operation improve resistance to weld bonding. Resistant against lamp load and dielectric loading: 1a achieves maximum switching capacity of 2,000 VA (8A 250 V AC).

### 3. High sensitivity

Using the same type of high-performance polar magnetic circuits as DS relays, by matching the spring load to the magnetic force of attraction, greater sensitivity has been achieved. The resultant pick up sensitivity of about 190 mW makes possible direct driving of transistors and chips.

### 4. High breakdown voltage

Breakdown voltage has been raised by keeping the coil and contacts separate.

| Between contact and coil                                    | Between contacts                                            |
|-------------------------------------------------------------|-------------------------------------------------------------|
| 3,000 Vrms for 1 min.<br>5,000 V surge<br>breakdown voltage | 1,000 Vrms for 1 min.<br>1,500 V surge<br>breakdown voltage |

Conforms with FCC Part 68

### 5. Latching types available

### 6. Wide variation

Three types of contact arrangement are offered: 1a, 2a, and 1a1b. In addition, each is available in standard and reversed polarity types.

### 7. Sealed construction allows automatic washing

### 8. Complies with safety standards

Complies with Japan Electrical Appliance and Material Safety Law requirements for operating 200 V power supply circuits, and complies with UL, CSA, and TÜV safety standards.

### 9. Sockets are available

## ORDERING INFORMATION

DSP  -  -  -  -

Contact arrangement  
1a: 1 Form A  
1: 1 Form A 1 Form B  
2a: 2 Form A

Operating function  
Nil: Single side stable  
L2: 2 coil latching

Nominal coil voltage  
DC 3, 5, 6, 9, 12, 24 V

Polarity  
Nil: Standard polarity  
R: Reverse polarity

Contact material  
• AgSnO<sub>2</sub> type  
F: 1 Form A 1 Form B  
Nil: 1 Form A, 2 Form A

Notes: 1. Reverse polarity types available (add suffix-R)  
2. Certified by UL, CSA and TÜV

TYPES

| Contact arrangement  | Nominal coil voltage | Single side stable | 2 coil latching |
|----------------------|----------------------|--------------------|-----------------|
|                      |                      | Part No.           | Part No.        |
| 1 Form A             | 3V DC                | DSP1a-DC3V         | DSP1a-L2-DC3V   |
|                      | 5V DC                | DSP1a-DC5V         | DSP1a-L2-DC5V   |
|                      | 6V DC                | DSP1a-DC6V         | DSP1a-L2-DC6V   |
|                      | 9V DC                | DSP1a-DC9V         | DSP1a-L2-DC9V   |
|                      | 12V DC               | DSP1a-DC12V        | DSP1a-L2-DC12V  |
|                      | 24V DC               | DSP1a-DC24V        | DSP1a-L2-DC24V  |
| 1 Form A<br>1 Form B | 3V DC                | DSP1-DC3V-F        | DSP1-L2-DC3V-F  |
|                      | 5V DC                | DSP1-DC5V-F        | DSP1-L2-DC5V-F  |
|                      | 6V DC                | DSP1-DC6V-F        | DSP1-L2-DC6V-F  |
|                      | 9V DC                | DSP1-DC9V-F        | DSP1-L2-DC9V-F  |
|                      | 12V DC               | DSP1-DC12V-F       | DSP1-L2-DC12V-F |
|                      | 24V DC               | DSP1-DC24V-F       | DSP1-L2-DC24V-F |
| 2 Form A             | 3V DC                | DSP2a-DC3V         | DSP2a-L2-DC3V   |
|                      | 5V DC                | DSP2a-DC5V         | DSP2a-L2-DC5V   |
|                      | 6V DC                | DSP2a-DC6V         | DSP2a-L2-DC6V   |
|                      | 9V DC                | DSP2a-DC9V         | DSP2a-L2-DC9V   |
|                      | 12V DC               | DSP2a-DC12V        | DSP2a-L2-DC12V  |
|                      | 24V DC               | DSP2a-DC24V        | DSP2a-L2-DC24V  |

Standard packing: Carton: 50 pcs.; Case: 500 pcs.  
Note: Reverse polarity type are manufactured by lot upon receipt of order.  
\* Sockets available.

RATING

1. Coil data

1) Single side stable

| Nominal coil voltage | Pick-up voltage<br>(at 20°C 68°F)            | Drop-out voltage<br>(at 20°C 68°F)           | Nominal operating current<br>[±10%] (at 20°C 68°F) |  | Coil resistance<br>[±10%] (at 20°C 68°F) | Nominal operating power | Max. applied voltage<br>(at 20°C 68°F) |
|----------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------------|--|------------------------------------------|-------------------------|----------------------------------------|
| 3V DC                | 80%V or less of nominal voltage<br>(Initial) | 10%V or more of nominal voltage<br>(Initial) | 100mA                                              |  | 30Ω                                      | 300mW                   | 130%V of nominal voltage               |
| 5V DC                |                                              |                                              | 60mA                                               |  | 83Ω                                      |                         |                                        |
| 6V DC                |                                              |                                              | 50mA                                               |  | 120Ω                                     |                         |                                        |
| 9V DC                |                                              |                                              | 33.3mA                                             |  | 270Ω                                     |                         |                                        |
| 12V DC               |                                              |                                              | 25mA                                               |  | 480Ω                                     |                         |                                        |
| 24V DC               |                                              |                                              | 12.5mA                                             |  | 1,920Ω                                   |                         |                                        |

2) 2 coil latching

| Nominal coil voltage | Set voltage<br>(at 20°C 68°F)                | Reset voltage<br>(at 20°C 68°F)              | Nominal operating current<br>[±10%] (at 20°C 68°F) |            | Coil resistance<br>[±10%] (at 20°C 68°F) |            | Nominal operating power |            | Max. applied voltage<br>(at 20°C 68°F) |
|----------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------------|------------|------------------------------------------|------------|-------------------------|------------|----------------------------------------|
|                      |                                              |                                              | Set coil                                           | Reset coil | Set coil                                 | Reset coil | Set coil                | Reset coil |                                        |
| 3V DC                | 80%V or less of nominal voltage<br>(Initial) | 80%V or less of nominal voltage<br>(Initial) | 100mA                                              | 100mA      | 30Ω                                      | 30Ω        | 300mW                   | 300mW      | 130%V of nominal voltage               |
| 5V DC                |                                              |                                              | 60mA                                               | 60mA       | 83Ω                                      | 83Ω        |                         |            |                                        |
| 6V DC                |                                              |                                              | 50mA                                               | 50mA       | 120Ω                                     | 120Ω       |                         |            |                                        |
| 9V DC                |                                              |                                              | 33.3mA                                             | 33.3mA     | 270Ω                                     | 270Ω       |                         |            |                                        |
| 12V DC               |                                              |                                              | 25mA                                               | 25mA       | 480Ω                                     | 480Ω       |                         |            |                                        |
| 24V DC               |                                              |                                              | 12.5mA                                             | 12.5mA     | 1,920Ω                                   | 1,920Ω     |                         |            |                                        |