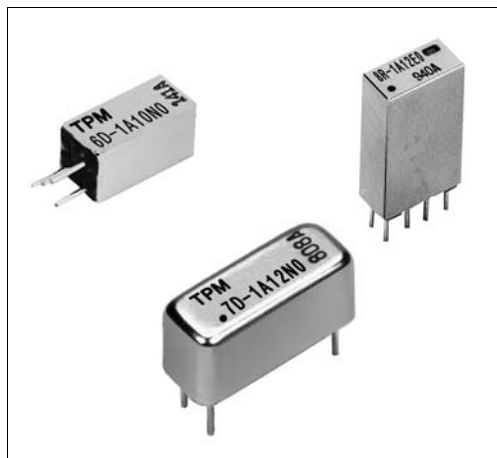




DB LECTRO<sup>®</sup>  
COMPOSANTS ÉLECTRONIQUES  
ELECTRONIC COMPONENTS

# Ultraminiature Reed Relays



6D and 6R are ultra-compact and lightweight reed relays which has narrow mounting space and easy to use. Besides, they are optimal for compacting equipments.

7D is the world's smallest miniature reed relays, which has high frequency characteristics with coaxial shield.

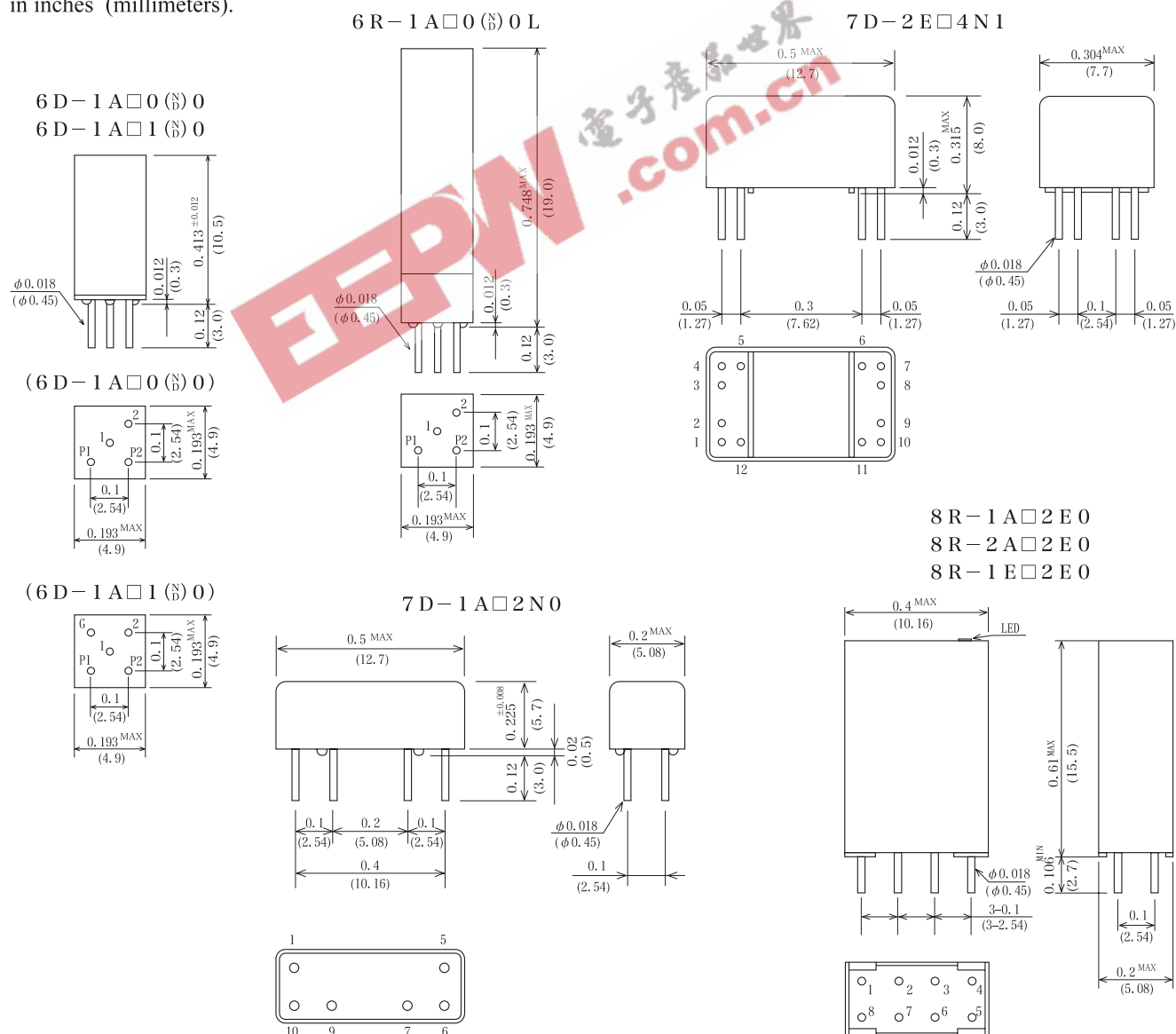
8R is excellent to debug/high density mounting with LED, which has narrow mounting space.

- Smallest square feet 4.9mm×4.9mm
- Available contact rating 5W and 10W
- Electrostatic Shield and Diode options
- Electric Magnetic Shield

## Mechanical Dimensions

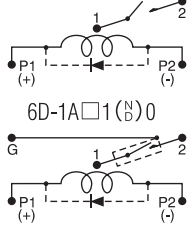
All dimensions are measured

in inches (millimeters).





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| 6□, 7D, 8R Series                                                                                                                                                                                                                                                                                                                                                                             |                                                                 |                      | Model Number                                                                                                                                                                                                                                                                                                                                       |     | Model Number     |     | Model Number     |     | Model Number     |          | Model Number     |     | Model Number     |          |          |  |          |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------------|-----|------------------|-----|------------------|----------|------------------|-----|------------------|----------|----------|--|----------|--|
|                                                                                                                                                                                                                                                                                                                                                                                               |                                                                 |                      | 6D-1A□□□□                                                                                                                                                                                                                                                                                                                                          |     | 6R-1A□□□□        |     | 7D-1A□□□□        |     | 7D-2E□□□□        |          | 8R-1A□□□□        |     | 8R-2A□□□□        |          |          |  |          |  |
| Parameters                                                                                                                                                                                                                                                                                                                                                                                    | Test Condition                                                  | Units                | 1 Form A                                                                                                                                                                                                                                                                                                                                           |     | 1 Form A         |     | 1 Form A         |     | 2 Form C         |          | 1 Form A         |     | 2 Form A         |          |          |  |          |  |
| Coil Specs                                                                                                                                                                                                                                                                                                                                                                                    |                                                                 |                      |                                                                                                                                                                                                                                                                                                                                                    |     |                  |     |                  |     |                  |          |                  |     |                  |          |          |  |          |  |
| Nominal coil voltage                                                                                                                                                                                                                                                                                                                                                                          | ±10% at20°C<br>15°C~35°C<br>15°C~35°C<br>15°C~35°C              | VDC                  | 5                                                                                                                                                                                                                                                                                                                                                  | 12  | 5                | 12  | 5                | 12  | 5                | 12       | 5                | 12  | 5                | 12       |          |  |          |  |
| Coil resistance                                                                                                                                                                                                                                                                                                                                                                               |                                                                 | Ω                    | 150                                                                                                                                                                                                                                                                                                                                                | 600 | 180              | 720 | 160              | 600 | 70               | 450      | 180              | 680 | 180              | 680      |          |  |          |  |
| Operating voltage                                                                                                                                                                                                                                                                                                                                                                             |                                                                 | VDC Max              | 3.6                                                                                                                                                                                                                                                                                                                                                | 8.8 | 3.6              | 8.8 | 3.2              | 8.5 | 3.6              | 9.6      | 3.6              | 9.6 | 3.6              | 9.6      |          |  |          |  |
| Operating voltage range                                                                                                                                                                                                                                                                                                                                                                       |                                                                 | VDC                  | —                                                                                                                                                                                                                                                                                                                                                  | —   | —                | —   | —                | —   | 3.6/5.5          | 9.6/13.2 | —                | —   | 3.6/5.5          | 9.6/13.2 |          |  |          |  |
| Release voltage                                                                                                                                                                                                                                                                                                                                                                               | 15°C~35°C                                                       | VDC Min              | 0.7                                                                                                                                                                                                                                                                                                                                                | 1.2 | 0.7              | 1.2 | 0.7              | 1.2 | 0.7              | 1.2      | 0.7              | 1.2 | 0.7              | 1.2      |          |  |          |  |
| Contact Ratings                                                                                                                                                                                                                                                                                                                                                                               |                                                                 |                      |                                                                                                                                                                                                                                                                                                                                                    |     |                  |     |                  |     |                  |          |                  |     |                  |          |          |  |          |  |
| Switching voltage                                                                                                                                                                                                                                                                                                                                                                             | Max. DC/Peak AC resistance                                      | Volts                | 50                                                                                                                                                                                                                                                                                                                                                 |     | 200              |     | 50               |     | 200              |          | 200              |     | 200              |          |          |  |          |  |
| Switching current                                                                                                                                                                                                                                                                                                                                                                             | Max. DC/Peak AC resistance                                      | Amps                 | 0.2                                                                                                                                                                                                                                                                                                                                                |     | 0.5              |     | 0.2              |     | 0.5              |          | 0.5              |     | 0.5              |          |          |  |          |  |
| Carry current                                                                                                                                                                                                                                                                                                                                                                                 | Max. DC/Peak AC resistance                                      | Amps                 | 0.5                                                                                                                                                                                                                                                                                                                                                |     | 1.0              |     | 0.5              |     | 1.0              |          | 1.0              |     | 1.0              |          |          |  |          |  |
| Contact rating                                                                                                                                                                                                                                                                                                                                                                                | Max. DC/Peak AC resistance                                      | Watts                | 5                                                                                                                                                                                                                                                                                                                                                  |     | 10               |     | 5                |     | 10               |          | 10               |     | 10               |          |          |  |          |  |
| Life expectancy                                                                                                                                                                                                                                                                                                                                                                               | 1V. 10mA                                                        | ×10 <sup>6</sup> Cyc | 300                                                                                                                                                                                                                                                                                                                                                |     | 1500             |     | 300              |     | 100              |          | 100              |     | 100              |          |          |  |          |  |
| Contact resistance                                                                                                                                                                                                                                                                                                                                                                            | Maximum initial                                                 | mΩ                   | 150                                                                                                                                                                                                                                                                                                                                                |     | 150              |     | 150              |     | 150              |          | 150              |     | 150              |          |          |  |          |  |
| Contact resistance stability                                                                                                                                                                                                                                                                                                                                                                  | Maximum initial                                                 | mΩ                   | 5.0                                                                                                                                                                                                                                                                                                                                                |     | 5.0              |     | 5.0              |     | 5.0              |          | 5.0              |     | 5.0              |          |          |  |          |  |
| Relay Specifications                                                                                                                                                                                                                                                                                                                                                                          |                                                                 |                      |                                                                                                                                                                                                                                                                                                                                                    |     |                  |     |                  |     |                  |          |                  |     |                  |          |          |  |          |  |
| Insulation resistance                                                                                                                                                                                                                                                                                                                                                                         | Between all isolated pins at 100V 20°C 40%RH                    | Ω                    | 10 <sup>10</sup>                                                                                                                                                                                                                                                                                                                                   |     | 10 <sup>10</sup> |     | 10 <sup>10</sup> |     | 10 <sup>11</sup> |          | 10 <sup>10</sup> |     | 10 <sup>10</sup> |          |          |  |          |  |
| Capacitance                                                                                                                                                                                                                                                                                                                                                                                   | Shield guarding<br>Contacts open, :Make-shield<br>:Break-shield | pF-Max               | 0.7                                                                                                                                                                                                                                                                                                                                                |     | 0.25             |     | 1.3              |     | 0.5              |          | 0.5              |     | 0.5              |          |          |  |          |  |
| Open contact to coil                                                                                                                                                                                                                                                                                                                                                                          |                                                                 |                      | Shield floating<br>Shield guarding : Make-Coil<br>: Break-Coil                                                                                                                                                                                                                                                                                     | 1.6 |                  | 1.6 |                  | 1.6 |                  | 1.6      |                  | 1.6 |                  | 1.6      |          |  |          |  |
| Dielectric strength                                                                                                                                                                                                                                                                                                                                                                           | Between contacts<br>Contacts to shield, coil                    | VDC                  | 150                                                                                                                                                                                                                                                                                                                                                |     | 200              |     | 150              |     | 150              |          | 200              |     | 200              |          |          |  |          |  |
| Operating time<br>(Including. bounce)                                                                                                                                                                                                                                                                                                                                                         | At nominal coil voltage,<br>100Hz Square wave                   | msec                 | 0.3                                                                                                                                                                                                                                                                                                                                                |     | 0.5              |     | 0.3              |     | 0.5              |          | 0.5              |     | 0.5              |          |          |  |          |  |
| Release time                                                                                                                                                                                                                                                                                                                                                                                  | Diode suppression                                               | msec                 | 0.3                                                                                                                                                                                                                                                                                                                                                |     | 0.5              |     | 0.1              |     | 0.5              |          | 0.5              |     | 0.5              |          |          |  |          |  |
| Environmental Ratings                                                                                                                                                                                                                                                                                                                                                                         |                                                                 |                      | Schematics                                                                                                                                                                                                                                                                                                                                         |     |                  |     |                  |     |                  |          |                  |     |                  |          |          |  |          |  |
| Measurement reference conditons<br>Temp. : 15°C~35°C Humidity : 25%~85%RH<br>Atmospheric pressure : 860~1060hPa<br>Storage temp. : -40°C~+80°C<br>Operating temp : -20°C~+60°C<br>The operating and Release Voltage and the coil resistance are specified at 20°C. These values change approximately 0.4%/°C change in the ambient temperature.<br>Vibration : 20Gs to 2000Hz<br>Shock : 50Gs |                                                                 |                      | 6D-1A□□□□<br>6R-1A□□□□ <ol style="list-style-type: none"><li>1</li><li>2</li></ol> <br>6D-1A□□□□ <ol style="list-style-type: none"><li>1</li><li>2</li></ol> <br>Bottom view |     |                  |     | Top view         |     | Top view         |          | Top view         |     | Top view         |          | Top view |  | Top view |  |

## Notes :

- (1) Values are specified with a resistive load being applied. A contact protective circuit is required for C and L Type loads.
- (2) The values of the operating time and release time however, are when the rated coil voltage is applied and a clamp diode is attached.
- (3) Model 6D, 6R : Diode is connected to pin P1 (+) and pin P2 (-).  
7D-2E series are polarity sensitive. Coil pin #1 must be positive (+). See the schematic.  
Model 8R : Diode is connected to pin 2 (+) and pin 3 (-).  
Correct coil polarity must be followed.

## ORDERING CODE

6 □ - 1 A □ □ □ □  
(1) (4) (5) (6) (7)  
7 D - 1 A □ 2 N O  
(4)  
7 D - 2 E □ 4 N 1  
(4)  
8 R - □ □ □ 2 E O  
(2) (3) (4)

Example 6D-1A10D0 Represents Series 6D with 1 Form A, Dry Reed (Rhodium), Coil Voltage 5V and with Diode.

- |                                                                      |                                                                                       |                                                            |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------|
| (1) Reed Switch Type<br>D-Dry Reed(Rhodium)<br>R-Dry Reed(Ruthenium) | (3) Contact Form<br>A-Form A<br>E-Multi-pole.<br>(Break-before-Make action on Form C) | (5) Shield<br>0-No Shield<br>1-Electrostatic Shield (6R N) |
| (2) Number of capsule<br>1-1capsule<br>2-2capsules                   | (4) Coil Voltage<br>1-5VDC<br>2-12VDC                                                 | (6) Diode Option<br>N-No Diode<br>D-With Diode             |
|                                                                      |                                                                                       | (7) L-6R series only                                       |