Committed to excellence

Miniature Relays

NEC/TOKIN

Consult | Components | Logistics | Support

www.rutronik.com
NEC TOKIN provides the best-seller products already used for various applications, and variety of products such as a flat type for low profile mounting, a slim type for high density mounting, low power consumption type and excellent environment resistance type.

**Applications**
- Telephone switchboards
- Communication terminal equipment
- FA equipment
- Security and alarm equipment

**Features**
- Compact, lightweight, ultra-low profile with high density
- The low power consumption
- Extremely durable plastic sealing
- Small but high withstanding voltage
- Lineup of SMTs (surface mount type) also available

<table>
<thead>
<tr>
<th>Type of Relay</th>
<th>UA2/UB2</th>
<th>UC2/UD2</th>
<th>EA2</th>
<th>EB2</th>
<th>EC2</th>
<th>EE2</th>
<th>ED2</th>
<th>EF2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting height (mm)</td>
<td>8.0±0.3/8.8max</td>
<td>5.3±0.3/5.45max</td>
<td>5.4max</td>
<td>7.5/6.5, 5.6max</td>
<td>9.4max</td>
<td>10.0~10.6max</td>
<td>9.4max</td>
<td>10.0~10.6max</td>
</tr>
<tr>
<td>Mounting space (mm x mm)</td>
<td>5.7 x 10.6</td>
<td>6.5 x 10.6</td>
<td>9.2 x 14.2</td>
<td>11.5 x 14.3</td>
<td>7.5 x 15.0</td>
<td>9.5(7.5) x 15.0</td>
<td>7.5 x 15.0</td>
<td>9.5(7.5) x 15.0</td>
</tr>
<tr>
<td>Features</td>
<td>Small mounting size of slim package</td>
<td>Low profile type</td>
<td>Breakdown voltage 1000VAC FCC Part 68 compliant</td>
<td>Surface mount type</td>
<td>2500V surge coil to contacts</td>
<td>Reduced mounting space type available</td>
<td>Ultra low power consumption</td>
<td>Ultra low power consumption</td>
</tr>
<tr>
<td></td>
<td>Bellcore (2500 V) and FCC (1500 V) surge capability</td>
<td>Low power type</td>
<td>Breakdown voltage 1000VAC, FCC Part 68 compliant</td>
<td>Latching type available</td>
<td>Latching type available</td>
<td>Surface mount type</td>
<td>Reduced mounting space type available</td>
<td>Surfaces mount type</td>
</tr>
<tr>
<td></td>
<td>Latching type available</td>
<td>Low power type</td>
<td>Latching type available</td>
<td>Latching type available</td>
<td>Latching type available</td>
<td>2500V surge coil to contacts</td>
<td>Latching type available</td>
<td>2500V surge coil to contacts</td>
</tr>
<tr>
<td></td>
<td>Low power consumption type available</td>
<td>Low power consumption type available</td>
<td>Low power consumption type available</td>
<td>Low power consumption type available</td>
<td>Reduced mounting space type available</td>
<td>Ultra low power consumption</td>
<td>Ultra low power consumption</td>
<td>Ultra low power consumption</td>
</tr>
</tbody>
</table>

| Contact arrangement | 2c | 2c | 2c | 2c | 2c | 2c | 2c | 2c |

| Maximum Contact | Power | 30W/37.5VA | 30W/62.5VA | 60W/125VA (UL, CSA rating) | 30W/62.5VA |
| Voltage | 220VDC/250VAC | 220VDC/250VAC | 220VDC/250VAC | 220VDC/250VAC |
| Current (Working) | 1A | 1A | 2A | 1A |
| Coil | Operating power | 100~230mW | 100~200mW | 100~230mW | 30~70mW |
| Nominal voltage | 3, 4.5, 5, 9, 12, 24V | 3, 4.5, 5, 12, 24V | 3, 4.5, 5, 9, 12, 24V | 3, 4.5, 5, 9, 12, 24V | 1.5, 3, 4.5, 5, 9, 12, 24V |
NEC TOKIN provides various types such as low profile, small mounting area and low power consumption, while realizing large capacity.

**Applications**
- Automotive electronic systems

**Features**
- Large capacity for high power switching
- Flux tight housing suitable for automatic soldering dip
- Semi-customizable for use in all types of circuitry, including car electronic systems
- Washable plastic case (sealed type)
- Lineup of miniature twin relays also available
- Reflow soldering type available

<table>
<thead>
<tr>
<th>Type of Relay</th>
<th>EU2</th>
<th>EX2</th>
<th>EX1</th>
<th>ET2</th>
<th>ET1</th>
<th>EP2</th>
<th>EP1</th>
<th>EM1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting height (mm)</td>
<td>8.0max.</td>
<td>14.2max.</td>
<td>14.2max.</td>
<td>11.0max.</td>
<td>11.0max.</td>
<td>16.5max.</td>
<td>16.5max.</td>
<td>16.5max.</td>
</tr>
<tr>
<td>Mounting space (mm x mm)</td>
<td>12.2 x 21.0</td>
<td>12.6 x 14.1</td>
<td>8.0 x 12.6</td>
<td>13.3 x 22.5</td>
<td>13.3 x 14.5</td>
<td>16.7 x 24.3</td>
<td>16.7 x 15.1</td>
<td>12.9 x 14.9</td>
</tr>
</tbody>
</table>
| Features | - Ultra low profile SMD twin relay for motor reversible control
- Light weight
- Reflow soldering available
| - Ultra miniature single relay for motor control
- Light weight
- Small mounting area
| - Ultra miniature single relay for motor control
- Light weight
- Small mounting area
| - Miniature twin relay for motor control
- Low profile ET2F; High heat resistance
| - Miniature single relay for motor reversible control
- Symmetrical structure EP2F; High heat resistance
| - Twin relay for motor reversible control
- Symmetrical structure EP2F; High heat resistance
| - Single relay for motor control EP1F; High heat resistance
- Large capacity single relay for lamp, condenser & motor control
- Reflow soldering available ET1F; High heat resistance

<table>
<thead>
<tr>
<th>Contact arrangement</th>
<th>1c x 2</th>
<th>1c x 2</th>
<th>1c</th>
<th>1c x 2</th>
<th>1c</th>
<th>1c x 2</th>
<th>1c</th>
<th>1u</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Contact</td>
<td>Power</td>
<td>480W</td>
<td>480W</td>
<td>400W</td>
<td>480W</td>
<td>480W</td>
<td>640W</td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td>16VDC</td>
<td>16VDC</td>
<td>16VDC</td>
<td>16VDC</td>
<td>16VDC</td>
<td>16VDC</td>
<td>16VDC</td>
<td></td>
</tr>
<tr>
<td>Current [Working]</td>
<td>30A</td>
<td>30A</td>
<td>25A</td>
<td>30A</td>
<td>30A</td>
<td>40A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coil</td>
<td>Operating power</td>
<td>960mW</td>
<td>900mW</td>
<td>640mW</td>
<td>480–640mW</td>
<td>640mW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal voltage</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>
The production bases responsible for the superb quality of NEC TOKIN’s Miniature Relays.

NEC TOKIN has two production bases — NEC TOKIN Shiroishi Operations and NEC TOKIN Electronics (Philippines) Inc. — that ensure a constant and stable supply of high-quality and highly reliable miniature relays using the most advanced equipment available. Both plants have received ISO9001, ISO/TS16949 and ISO14001 certification.

NEC TOKIN Shiroishi Operations

This is a R&D and production site responsible for developing and designing new products. There is abundant expertise and experience in manufacturing technology. The production line employs state-of-the-art robots and image processing technology to ensure that NEC TOKIN miniature relays achieve maximum efficiency and quality.

NEC TOKIN Electronics (Philippines) Inc.

Established in 1997, this mass production factory boasts the most advanced equipment. The intricate construction of miniature relays requires the highest level of precision for processing and assembly. In order to ensure high quality, the production line is fully automated. The miniature relays produced here are shipped to customers all over the world.

NEC TOKIN Miniature Relays keep on evolving.

In order to respond to various needs from customers, NEC TOKIN is creating new products through continuous efforts for downsizing, weight saving, high performance, change of mounting method, and so forth...

Ultra small signal relays

U Series

The world’s smallest class signal relay for use in telecommunications, FA control, and measuring equipment. UA&UB relays are the ultra-compact type with a mounting area of 60mm². UC&UD relays are the ultra-compact type with low profile of 5.45mm.

Miniature power relays for Automotive electronic systems

EX1, EX2&EU2 relay

These relays are suitable for motor reversible control such as power window and door lock, etc. EX1&EX2 relays are the world’s smallest class of mounting area. EU2 relay is the surface mount twin relay with the world’s lowest profile (7.8mm).

Miniature power relays for Automotive electronic systems

EM1 relay

EM1 relay is a high heat resistance relay for junction boxes. It is suitable for large inrush current loads such as lamps and condensers, or heaters and fans. Inrush current of 100A and carrying current of 50A are achieved.
We have enlarged our stocking program to accommodate these new products. These parts are available from stock, or on a short delivery, benefiting our customers.

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