Piezoelectronic buzzers
Without oscillator circuit
Pin terminal/Lead lines/SMD

PS series

Pin terminal type
PS12
PS14
PS17
PS19

Lead wire type
PS15

SMD type
PST14
Piezoelectronic buzzers
Without oscillator circuit
Pin terminal/Lead lines/SMD

Overview of the PS series

- **FEATURES**
  - Sounding body (unimorph) that piezo bonded the diaphragm is used, and attach on circuit, and is easy design high performance efficiency piezoelectric buzzer.
  - They feature extremely low power consumption in comparison to electromagnetic units.
  - Because these buzzers are designed for external excitation, the same part can serve as both a musical tone oscillator and a buzzer.
  - They can be used with automated inserters. Moisture-resistant models are also available.
  - The lead wire type (PS1550L40N) with both-sided adhesive tape installed easily is prepared.

- **APPLICATION**
  Electric ranges, washing machines, computer terminals, various devices that require speech synthesis output.

- **RECOMMENDED OPERATING CIRCUIT EXAMPLE**

- **SOUND MEASURING METHOD**


⚠ Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use. Please note that the contents may change without any prior notice due to reasons such as upgrading.
Overview of the PS series

PRODUCT LINEUP

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Outside dimensions</th>
<th>Height [excluding terminal] (mm)</th>
<th>Terminal pitch (mm)</th>
<th>Characteristics</th>
<th>Input voltage (V0-P)[rectangular waves]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Outside diameter (mm)</td>
<td></td>
<td></td>
<td>Sound pressure (dB(A)/10cm)</td>
<td>Frequency (kHz)</td>
</tr>
<tr>
<td>PS12</td>
<td>PS1240P02BT</td>
<td>ø12.2</td>
<td>6.5</td>
<td>5</td>
<td>70 min.</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>PS1240P02CT3</td>
<td>ø12.2</td>
<td>3.5</td>
<td>5</td>
<td>60 min.</td>
<td>3</td>
</tr>
<tr>
<td>PS14</td>
<td>PS1440P02BT</td>
<td>ø14</td>
<td>8</td>
<td>5</td>
<td>75 min.</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>PS1420P02CT</td>
<td>ø14</td>
<td>11</td>
<td>5</td>
<td>70 min.</td>
<td>2</td>
</tr>
<tr>
<td>PS17</td>
<td>PS1720P02</td>
<td>ø17</td>
<td>8</td>
<td>10</td>
<td>70 min.</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>PS1740P02E</td>
<td>ø17</td>
<td>7.5</td>
<td>10</td>
<td>75 min.</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>PS1740P02CE</td>
<td>ø17</td>
<td>4.6</td>
<td>10</td>
<td>60 min.</td>
<td>4</td>
</tr>
<tr>
<td>PS19</td>
<td>PS1927P02</td>
<td>ø19</td>
<td>10.5</td>
<td>20</td>
<td>90 min.</td>
<td>2.7</td>
</tr>
<tr>
<td></td>
<td>PS1920P02</td>
<td>ø19</td>
<td>10.5</td>
<td>20</td>
<td>80 min.</td>
<td>2</td>
</tr>
<tr>
<td>PS15</td>
<td>PS1550L40N</td>
<td>ø15</td>
<td>1.6</td>
<td>—</td>
<td>Depend on the installation condition</td>
<td>20V0-P max.</td>
</tr>
<tr>
<td>PST14</td>
<td>PST1423P02</td>
<td>ø14</td>
<td>(9)</td>
<td>—</td>
<td>84 min.</td>
<td>2.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Application</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS12</td>
<td>PS1240P02BT</td>
<td>For warning and alarm sounds of home appliances (air conditioners, refrigerators, fan forced heaters, cordless telephones, etc.)</td>
<td>Compact/automatic mountable/12.7mm pitch radial taping</td>
</tr>
<tr>
<td></td>
<td>PS1240P02CT3</td>
<td></td>
<td>Thin type/automatic mountable/12.7mm pitch radial taping</td>
</tr>
<tr>
<td>PS14</td>
<td>PS1440P02BT</td>
<td></td>
<td>High sound pressure/automatic mountable/15mm pitch radial taping</td>
</tr>
<tr>
<td></td>
<td>PS1420P02CT</td>
<td></td>
<td>Low frequency tone/automatic mountable/15mm pitch radial taping</td>
</tr>
<tr>
<td></td>
<td>PS1720P02</td>
<td></td>
<td>Low frequency tone / High sound pressure</td>
</tr>
<tr>
<td>PS17</td>
<td>PS1740P02E</td>
<td></td>
<td>High sound pressure</td>
</tr>
<tr>
<td></td>
<td>PS1740P02CE</td>
<td></td>
<td>Thin type</td>
</tr>
<tr>
<td>PS19</td>
<td>PS1927P02</td>
<td>For potted circuit (washing machines, drying machines, hot water supply systems, etc.)</td>
<td>High sound pressure / Water-proof processing element</td>
</tr>
<tr>
<td></td>
<td>PS1920P02</td>
<td></td>
<td>Low frequency tone / Water-proof processing element</td>
</tr>
<tr>
<td>PS15</td>
<td>PS1550L40N</td>
<td>Digital camera</td>
<td>Thin type / Installation easy</td>
</tr>
<tr>
<td>PST14</td>
<td>PST1423P02</td>
<td>applicable to automobile equipment</td>
<td>SMD / Taping products</td>
</tr>
</tbody>
</table>

Background yellow: The product which is not recommended to a new design.

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BUZZERS

Pin terminal type PS12

PS1240P02BT

FEATURES

- Miniature size (ø12.2×T6.5mm).
- High cost performance.
- Suitable for automatic radial taping machine (12.7mm-pitch).

SHAPE & DIMENSIONS

SPECIFICATIONS

Sound pressure 70dB(A)/10cm min. [at 4kHz, 3V0-P rectangular waves, measuring temperature: 25±5℃, humidity: 60±10%]
Operating temperature range -10 to +70℃
Storage conditions +5 to +40℃, 20 to 70%RH, please use within 6 months
Maximum input voltage 30V0-P max. [without DC bias]
Minimum delivery unit 2500 pieces [500 pieces/1 reel × 5 reels]

FREQUENCY SOUND PRESSURE CHARACTERISTICS

SINE WAVE DRIVE

SQUARE WAVE DRIVE

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Pin terminal type PS12
PS1240P02CT3

**FEATURES**
- Thin type (ø12.2×T3.5mm).
- Suitable for automatic radial taping machine (12.7mm-pitch).

**SHAPE & DIMENSIONS**

![Dimensions in mm](image)

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sound pressure</strong></td>
<td>60dB(A)/10cm min. [at 4kHz, 3V_{0-P} rectangular waves, measuring temperature: 25±5°C, humidity: 60±10%]</td>
</tr>
<tr>
<td><strong>Operating temperature range</strong></td>
<td>–10 to +70°C</td>
</tr>
<tr>
<td><strong>Storage conditions</strong></td>
<td>+5 to +40°C, 20 to 70%RH, please use within 6 months</td>
</tr>
<tr>
<td><strong>Maximum input voltage</strong></td>
<td>30V_{0-P} max. [without DC bias]</td>
</tr>
<tr>
<td><strong>Minimum delivery unit</strong></td>
<td>2500 [500 pieces/1 reel×5 reels]</td>
</tr>
</tbody>
</table>

**FREQUENCY SOUND PRESSURE CHARACTERISTICS**

- **SINE WAVE DRIVE**
  - [Graph](image)
  - Sound pressure (dB(A)/10cm) at 3V_{rms}, sine wave.

- **SQUARE WAVE DRIVE**
  - [Graph](image)
  - Sound pressure (dB(A)/10cm) at 3V_{0-P}, square wave.

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Pin terminal type PS14

PS1440P02BT

**FEATURES**
- High sound pressure.
- Miniature size (ø14×T8mm).
- Suitable for automatic radial taping machine (15mm-pitch).

**SHAPE & DIMENSIONS**

![Dimensions in mm]

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound pressure</td>
<td>75dB(A)/10cm min. [at 4kHz, 3V0-P rectangular waves, measuring temperature:25±5°C, humidity:60±10%]</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>–10 to +70°C</td>
</tr>
<tr>
<td>Storage conditions</td>
<td>+5 to +40°C, 20 to 70%RH, please use within 6 months</td>
</tr>
<tr>
<td>Maximum input voltage</td>
<td>30V0-P max. [without DC bias]</td>
</tr>
<tr>
<td>Minimum delivery unit</td>
<td>1750 pieces [350 pieces/1 reel×5 reels]</td>
</tr>
</tbody>
</table>

**FREQUENCY SOUND PRESSURE CHARACTERISTICS**

[SINE WAVE DRIVE]

![Sound pressure vs Frequency (Hz) for Sine Wave Drive]

[SQUARE WAVE DRIVE]

![Sound pressure vs Frequency (Hz) for Square Wave Drive]
Pin terminal type PS14

PS1420P02CT

**FEATURES**

- Low frequency tone (2kHz).
- Suitable for automatic radial taping machine (15mm-pitch).

**SHAPE & DIMENSIONS**

![Dimensions in mm](image)

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound pressure</td>
<td>70dB(A)/10cm min. [at 2kHz, 5V0-P rectangular waves, measuring temperature:25±5°C, humidity:60±10%]</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>−10 to +70°C</td>
</tr>
<tr>
<td>Storage conditions</td>
<td>+5 to +40°C, 20 to 70%RH, please use within 6 months</td>
</tr>
<tr>
<td>Maximum input voltage</td>
<td>30V0-P max. [without DC bias]</td>
</tr>
<tr>
<td>Minimum delivery unit</td>
<td>1750 pieces [350 pieces/1 reel×5 reels]</td>
</tr>
</tbody>
</table>

**FREQUENCY SOUND PRESSURE CHARACTERISTICS**

- **SINE WAVE DRIVE**
  - at 3Vrms, sine wave.
  - Sound pressure (dB(A)/10cm) vs Frequency (Hz)

- **SQUARE WAVE DRIVE**
  - at 5V0-P, square wave.
  - Sound pressure (dB(A)/10cm) vs Frequency (Hz)

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20190717 / piezoelectronic_buzzer_ps_en
Pin terminal type PS17

PS1720P02

**FEATURES**

- Low frequency tone.
- High sound pressure.

**SHAPE & DIMENSIONS**

```
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø17</td>
<td>±0.3</td>
</tr>
<tr>
<td>8</td>
<td>±0.1</td>
</tr>
<tr>
<td>4</td>
<td>±0.1</td>
</tr>
<tr>
<td>10</td>
<td>±0.1</td>
</tr>
<tr>
<td>0.5</td>
<td>±0.1</td>
</tr>
<tr>
<td>10</td>
<td>±0.1</td>
</tr>
<tr>
<td>A</td>
<td>±0.1</td>
</tr>
</tbody>
</table>

Tolerance: ±0.3
Dimensions in mm
```

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound pressure</td>
<td>70dB(A)/10cm min. [at 2kHz, 3V0-P rectangular waves, measuring temperature:25±5°C, humidity:60±10%]</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>–10 to +70°C</td>
</tr>
<tr>
<td>Storage conditions</td>
<td>+5 to +40°C, 20 to 70%RH, please use within 6 months</td>
</tr>
<tr>
<td>Maximum input voltage</td>
<td>30V0-P max. [without DC bias]</td>
</tr>
<tr>
<td>Minimum delivery unit</td>
<td>1500 pieces</td>
</tr>
</tbody>
</table>

**FREQUENCY SOUND PRESSURE CHARACTERISTICS**

**SINE WAVE DRIVE**

![Sine Wave Drive Graph]

**SQUARE WAVE DRIVE**

![Square Wave Drive Graph]

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Please note that the contents may change without any prior notice due to reasons such as upgrading.
Pin terminal type PS17

PS1740P02E

**FEATURES**
- High sound pressure.

**SHAPE & DIMENSIONS**

![Diagram of BUZZERS](image1)

- Ø17 x 7.5 mm
- A part expansion: ±0.3 mm

- Dimensions in mm

- Tolerance: ±0.1 mm

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound pressure</td>
<td>75dB(A)/10cm min.</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>-10 to +70°C</td>
</tr>
<tr>
<td>Storage conditions</td>
<td>+5 to +40°C, 20 to 70%RH, please use within 6 months</td>
</tr>
<tr>
<td>Maximum input voltage</td>
<td>30V&lt;sub&gt;0-P&lt;/sub&gt; max. [without DC bias]</td>
</tr>
<tr>
<td>Minimum delivery unit</td>
<td>1500 pieces</td>
</tr>
</tbody>
</table>

**FREQUENCY SOUND PRESSURE CHARACTERISTICS**

- **SINE WAVE DRIVE**
  - At 3V<sub>rms</sub>, sine wave.

- **SQUARE WAVE DRIVE**
  - At 3V<sub>0-P</sub>, square wave.

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20190717 / piezoelectronic_buzzer_ps_en
Pin terminal type PS17

PS1740P02CE

**FEATURES**

- Thin type.

**SHAPE & DIMENSIONS**

- A part expansion

- Tolerance: ±0.3
  Dimensions in mm

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound pressure</td>
<td>60dB(A)/10cm min. [at 4kHz, 3V0-P rectangular waves, measuring temperature:25±5°C, humidity:60±10%]</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>−10 to +70°C</td>
</tr>
<tr>
<td>Storage conditions</td>
<td>+5 to +40°C, 20 to 70%RH, please use within 6 months</td>
</tr>
<tr>
<td>Maximum input voltage</td>
<td>30V0-P max. [without DC bias]</td>
</tr>
<tr>
<td>Minimum delivery unit</td>
<td>1500 pieces</td>
</tr>
</tbody>
</table>

**FREQUENCY SOUND PRESSURE CHARACTERISTICS**

- **SINE WAVE DRIVE**

- **SQUARE WAVE DRIVE**

⚠ Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use.

Please note that the contents may change without any prior notice due to reasons such as upgrading.
Pin terminal type PS19

PS1920P02

**FEATURES**

- Low frequency tone (2kHz).
- Piezo element is coated with waterproof processing.

**SHAPE & DIMENSIONS**

![Diagram of buzzer dimensions]

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound pressure</td>
<td>80dB(A)/10cm min. [at 2kHz, 10Vp-p rectangular waves, measuring temperature: 25±5°C, humidity: 60±10%]</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>−10 to +70°C</td>
</tr>
<tr>
<td>Storage conditions</td>
<td>+5 to +40°C, 20 to 70%RH, please use within 6 months</td>
</tr>
<tr>
<td>Maximum input voltage</td>
<td>20Vp-p max. [without DC bias]</td>
</tr>
<tr>
<td>Minimum delivery unit</td>
<td>600 pieces</td>
</tr>
</tbody>
</table>

**FREQUENCY SOUND PRESSURE CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Drive Type</th>
<th>Description</th>
<th>Graph</th>
</tr>
</thead>
<tbody>
<tr>
<td>SINE WAVE</td>
<td>at 3Vrms, sine wave</td>
<td>![Sine Wave Graph]</td>
</tr>
<tr>
<td>SQUARE WAVE</td>
<td>at 10Vp-p, square wave</td>
<td>![Square Wave Graph]</td>
</tr>
</tbody>
</table>

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**Pin terminal type PS19**

**PS1927P02**

### FEATURES
- High sound pressure.
- Piezo element is coated with water proof processing.

### SHAPE & DIMENSIONS

![Dimensions in mm]

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound pressure</td>
<td>90dB(A)/10cm min. [at 2.7kHz, 10Vrms rectangular waves, measuring temperature:25±5°C, humidity:60±10%]</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>–10 to +70°C</td>
</tr>
<tr>
<td>Storage conditions</td>
<td>+5 to +40°C, 20 to 70%RH, please use within 6 months</td>
</tr>
<tr>
<td>Maximum input voltage</td>
<td>20Vrms max. [without DC bias]</td>
</tr>
<tr>
<td>Minimum delivery unit</td>
<td>600 pieces</td>
</tr>
</tbody>
</table>

### FREQUENCY SOUND PRESSURE CHARACTERISTICS

#### SINE WAVE DRIVE

![Sound pressure vs. frequency graph for sine wave]

#### SQUARE WAVE DRIVE

![Sound pressure vs. frequency graph for square wave]

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Lead wire type PS15

PS1550L40N

■ FEATURES

- Miniature size (ø15×70.95mm).
- High cost performance.
- The installation of this type is easy with both-sided tape.
- This product adopts an excellent both-sided adhesive tape in bonding and the sound characteristic.

■ SHAPE & DIMENSIONS

![Dimensions in mm]

■ SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature range</td>
<td>–10 to +70°C</td>
</tr>
<tr>
<td>Storage conditions</td>
<td>+5 to +40°C, 20 to 70%RH, please use within 6 months</td>
</tr>
<tr>
<td>Maximum input voltage</td>
<td>20V_{0-P} max. [without DC bias]</td>
</tr>
<tr>
<td>Minimum delivery unit</td>
<td>12000 pieces</td>
</tr>
</tbody>
</table>

■ FREQUENCY SOUND PRESSURE CHARACTERISTICS

- **SINE WAVE DRIVE**
  - at 2.83Vrms, sine wave.

- **SQUARE WAVE DRIVE**
  - at 3V_{0-P}, square wave.

* The frequency characteristic changes depending on the case shape and the installation method.

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SMD type PST14

PST1423P02

**FEATURES**

- These high reliability electromagnetic buzzers are applicable to automobile equipment.
- Suitable for surface mount process (SMD). Stand up to reflow process twice.

**SHAPE & DIMENSIONS**

![Dimensions in mm]

**RECOMMENDED LAND PATTERN**

![Dimensions in mm]

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound pressure</td>
<td>84dB(A)/10cm min [at 2.3kHz 24Vp-p (±12V) rectangular waves, measuring temperature:25±5°C, humidity:60±10%]</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>–40 to +85°C</td>
</tr>
<tr>
<td>Storage conditions</td>
<td>Store the environment of the room temperature 5 to 40°C, humidity 20 to 70%RH, please use within the 6 months.</td>
</tr>
<tr>
<td>Maximum input voltage</td>
<td>32Vp-p (±16V) max</td>
</tr>
<tr>
<td>Minimum ordering unit</td>
<td>1250 pieces</td>
</tr>
</tbody>
</table>

**FREQUENCY SOUND PRESSURE CHARACTERISTICS**

- **SINE WAVE DRIVE**
  - ![Graph](image)
  - Sound pressure (dB(A)/10cm) vs Frequency (Hz)
  - at 3Vrms sine wave

- **SQUARE WAVE DRIVE**
  - ![Graph](image)
  - Sound pressure (dB(A)/10cm) vs Frequency (Hz)
  - at 24Vp-p (±12V) square wave

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**SMD type PST14**

**PST1423P02**

**RECOMMENDED REFLOW PROFILE**

<table>
<thead>
<tr>
<th>Preheating</th>
<th>Soldering</th>
<th>Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp.</td>
<td>Time</td>
<td>Temp.</td>
</tr>
<tr>
<td>T1</td>
<td>T2</td>
<td>T3</td>
</tr>
<tr>
<td>180°C</td>
<td>230°C</td>
<td>20 to 40s</td>
</tr>
</tbody>
</table>

**Preheating**

- **T1**: 150°C to 180°C
- **t1**: 60 to 120 seconds

**Soldering**

- **T2**: 180°C
- **T3**: 230°C
- **t2**: 20 to 40 seconds
- **t3**: 5 seconds max.

**Peak**

- **T4**: 250 to 260°C

**Natural cooling**

- **t4**: Natural cooling
The product is not recommended for new design.

BUZZERS

SMD type PST14

PST1423P02

- PACKAGING STYLE

- TAPING SPECIFICATIONS

![Top cover tape](image1)

![Emboss carrier tape](image2)

Dimensions in mm

<table>
<thead>
<tr>
<th>B</th>
<th>C</th>
<th>D</th>
<th>N</th>
<th>R</th>
<th>W1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5±0.3</td>
<td>ø13.2±0.3</td>
<td>21.0±0.4</td>
<td>ø100±2</td>
<td>(R1.15)</td>
<td>24.5±2/–0</td>
</tr>
</tbody>
</table>

- PRODUCTS INSTALL STATUS

![Drawing direction](image3)

Dimensions in mm

- Carrier tape dimensions

![Carrier tape dimensions](image4)

Dimensions in mm

<table>
<thead>
<tr>
<th>F</th>
<th>G</th>
<th>T</th>
<th>W</th>
<th>A0</th>
<th>B0</th>
<th>D0</th>
<th>D1</th>
<th>E1</th>
<th>E2</th>
<th>K0</th>
<th>P0</th>
<th>P1</th>
<th>P2</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.5±0.1</td>
<td>(3.5)</td>
<td>0.5±0.05</td>
<td>24.0±0.3</td>
<td>14.5±0.2</td>
<td>14.5±0.2</td>
<td>ø1.5+0.1/–0</td>
<td>ø1.5±0.1</td>
<td>17.5±0.1</td>
<td>22.25+0.2/–0</td>
<td>9.5±0.1</td>
<td>4.0±0.1</td>
<td>20.0±0.1</td>
<td>2.0±0.1</td>
</tr>
</tbody>
</table>

Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use.

Please note that the contents may change without any prior notice due to reasons such as upgrading.
REMINDERS FOR USING THESE PRODUCTS

Before using these products, be sure to request the delivery specifications.

SAFETY REMINDERS

Please pay sufficient attention to the warnings for safe designing when using this products.

⚠️ REMINDERS

Please be sure to read the specifications of TDK electromagnetic buzzer (hereinafter referred to as “the buzzer”) before use.

- Do not apply DC bias to the piezoelectric buzzer; otherwise insulation resistance may become low and affect the performance.
- Do not supply any voltage higher than applicable to the piezoelectric buzzer.
- Do not use the piezoelectric buzzer outdoors. It is designed for indoor use. If the piezoelectric buzzer has to be used outdoors, provide it with waterproofing measures; it will not operate normally if subjected to moisture.
- Do not wash the piezoelectric buzzer with solvent or allow gas to enter it while washing; any solvent that enters it may stay inside a long time and damage it.
- A piezoelectric ceramic material of approximately 100μm thick is used in the sound generator of the buzzer. Do not press the sound generator through the sound release hole otherwise the ceramic material may break. Do not stack the piezoelectric buzzers without packing.
- Do not apply any mechanical force to the piezoelectric buzzer; otherwise the case may deform and result in improper operation.
- Do not place any shielding material or the like just in front of the sound release hole of the buzzer; otherwise the sound pressure may vary and result in unstable buzzer operation. Make sure that the buzzer is not affected by a standing wave or the like.
- Be sure to solder the buzzer terminal at 350°C max. (80W max.) (soldering iron trip) within 5 seconds using a solder containing silver.
- Avoid using the piezoelectric buzzer for a long time where any corrosive gas H2S, etc.) exists; otherwise the parts or sound generator may corroded and result in improper operation.
- Be careful not to drop the piezoelectric buzzer.

High safety and reliability is needed, and or, there is fear that failure, wrong movement, failure of product damages and worldly goods etc related to life and health of people, or do not use for equipment (as nuclear power equipment - automobile - aircraft - medical device) with fear that significant influence is had socially.

The products listed on this catalog are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.

The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property.

If you intend to use the products in the applications listed below or if you have special requirements exceeding the range or conditions set forth in the each catalog, please contact us.

(1) Aerospace/aviation equipment
(2) Transportation equipment (cars, electric trains, ships, etc.)
(3) Medical equipment
(4) Power-generation control equipment
(5) Atomic energy-related equipment
(6) Seabed equipment
(7) Transportation control equipment
(8) Public information-processing equipment
(9) Military equipment
(10) Electric heating apparatus, burning equipment
(11) Disaster prevention/crime prevention equipment
(12) Safety equipment
(13) Other applications that are not considered general-purpose applications

⚠️ Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use. Please note that the contents may change without any prior notice due to reasons such as upgrading.