



# Electromagnetic buzzers

Without oscillator circuit

Pin terminal/SMD

# SD/SDR series

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## Pin terminal type

**SD1209**

**SD1607**

**SD1614**

## SMD type

**SDR08540**

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# Electromagnetic buzzers

Product compatible with RoHS directive

Without oscillator circuit

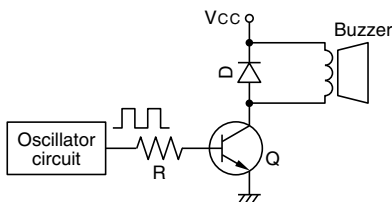
Pin terminal/SMD

## Overview of the SD series

### PRODUCT LINEUP

| Type     | Part No.   | Outside dimensions    |             |                     | Characteristics           |                | Rated voltage |
|----------|--|-----------------------|-------------|---------------------|---------------------------|----------------|---------------|
|          |  | Outside diameter (mm) | Height (mm) | Terminal pitch (mm) | Sound pressure dB(A)/10cm | Frequency (Hz) | Eo-p (V)      |
| SD1209   | <a href="#">SD1209T3-A1</a><br>(applicable to auto-mobile)   | ø12                   | 9           | 5                   | 80                        | 2048           | 3             |
|          | <a href="#">SD1209T5-A1</a><br>(applicable to auto-mobile)   | ø12                   | 9           | 5                   | 80                        | 2048           | 5             |
|          | <a href="#">SD1209TT-A1</a><br>(applicable to auto-mobile)   | ø12                   | 9           | 5                   | 85                        | 2048           | 12            |
| SD1607   | <a href="#">SD160701</a>                                     | ø16                   | 7           | 5                   | 80                        | 4096           | 3             |
|          | <a href="#">SD160709</a>                                     | ø16                   | 7           | 5                   | 80                        | 4096           | 5             |
| SD1614   | <a href="#">SD1614T5-A1</a>                                  | ø16                   | 14          | 5                   | 85                        | 2048           | 5             |
|          | <a href="#">SD1614TT-A1</a>                                  | ø16                   | 14          | 5                   | 85                        | 2048           | 12            |
|          | <a href="#">SD1614TT-A5ME</a><br>(applicable to auto-mobile) | ø16                   | 14          | 5                   | 85                        | 2048           | 12            |
| SDR08540 | <a href="#">SDR08540M3-01</a>                                | 8.5x8.5               | 4           | —                   | 88min.                    | 2670           | 3             |

### RECOMMENDED OPERATING CIRCUIT EXAMPLE



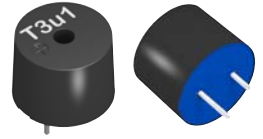
○ RoHS Directive Compliant Product: See the following for more details. <https://product.tdk.com/info/en/environment/rohs/index.html>

⚠ 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.

# SD1209T3-A1, SD1209T5-A1/ø12mm SD1209TT-A1 (applicable to automobile)/ø12mm

## FEATURES

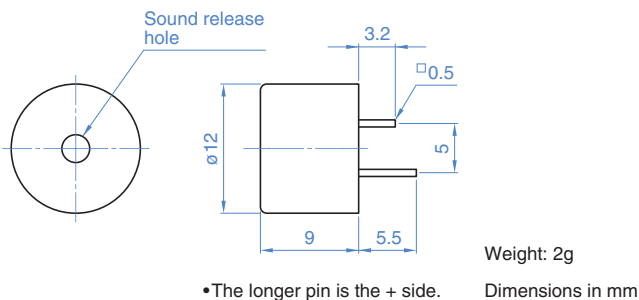
- These high reliability electromagnetic buzzers are applicable to automobile equipment.
- Compact, pin terminal type electromagnetic buzzer with 2048Hz output.
- Pin type terminal construction enables direct mounting onto printed circuit boards.



## APPLICATION

Clocks, travel watches, keyboards, toys, various alarms of automobile equipment.

## SHAPE & DIMENSIONS



## SPECIFICATIONS

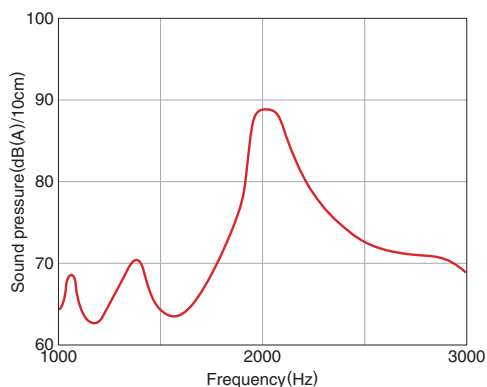
| Part No.                       | SD1209T3-A1                                | SD1209T5-A1                                | SD1209TT-A1                                |
|--------------------------------|--|--|--|
| Rated voltage Eo-p(V)          | 3  | 5  | 12   |
| Operating voltage Eo-p(V)      | 1 to 4                                     | 3 to 6                                     | 6 to 15                                    |
| Drive conditions               | Rated voltage, square wave form [duty 50%] | Rated voltage, square wave form [duty 50%] | Rated voltage, square wave form [duty 50%] |
| Frequency(Hz)                  | 2048                                       | 2048                                       | 2048                                       |
| Sound pressure(dB(A)/10cm)min. | 80   | 80   | 85   |
| Current Io-p(mA)max.           | 100  | 60   | 100  |
| DC resistance(Ω)typ.           | 30   | 90   | 120  |
| Terminal construction          | Pin terminal                               | Pin terminal                               | Pin terminal                               |
| Operating temperature range    | -40 to +85°C                               | -40 to +85°C                               | -40 to +85°C                               |
| Storage temperature range      | -40 to +85°C                               | -40 to +85°C                               | -40 to +85°C                               |

- Please ask us for details which is designed another operating rated frequency.

## FREQUENCY CHARACTERISTICS (TYPICAL VALUE)

### SD1209T3-A1

#### □ Around 2000Hz



## SD160701 / $\phi$ 16mm

## SD160709 / $\phi$ 16mm

### FEATURES

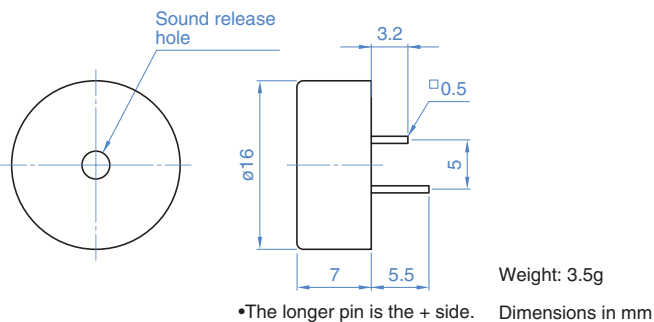
- These are thin-type electromagnetic buzzers with a height of only 7mm. They provide output over a relatively wide band, making them suitable for music.
- Pin type terminal construction enables direct mounting onto printed circuit boards.



### APPLICATION

Travel watches, keyboards, handy-type equipment, toys.

### SHAPE & DIMENSIONS



### SPECIFICATIONS

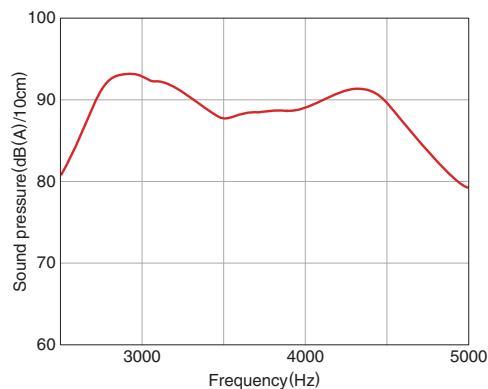
| Part No.                       | SD160701                                   | SD160709                                   |
|--------------------------------|--|--|
| Rated voltage Eo-p(V)          | 3  | 5  |
| Operating voltage Eo-p(V)      | 1 to 5                                     | 3 to 9                                     |
| Drive conditions               | Rated voltage, square wave form [duty 50%] | Rated voltage, square wave form [duty 50%] |
| Frequency(Hz)                  | 4096                                       | 4096                                       |
| Sound pressure(dB(A)/10cm)min. | 80   | 80   |
| Current Io-p(mA)max.           | 60   | 70   |
| DC resistance( $\Omega$ )typ.  | 50   | 70   |
| Terminal construction          | Pin terminal                               | Pin terminal                               |
| Operating temperature range    | -10 to +70°C                               | -10 to +70°C                               |
| Storage temperature range      | -20 to +80°C                               | -20 to +80°C                               |

- Please ask us for details which is designed another operating rated frequency.

### FREQUENCY CHARACTERISTICS (TYPICAL VALUE)

#### SD160701

- Around 4000Hz



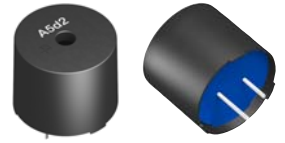
Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use. Please note that the contents may change without any prior notice due to reasons such as upgrading.

## SD1614T5-A1 / $\phi$ 16mm

## SD1614TT-A1 / $\phi$ 16mm

### FEATURES

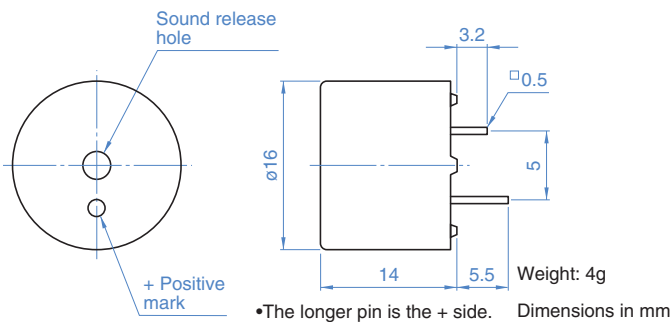
- These low-cost electromagnetic buzzers are suited to a wide range of applications.
- Pin type terminal construction enables direct mounting onto printed circuit boards.



### APPLICATION

Office equipment, electronic games, toys, home appliances, keyboards.

### SHAPE & DIMENSIONS



### SPECIFICATIONS

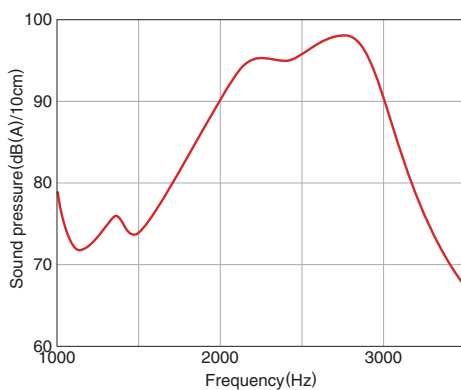
| Part No.                       | SD1614T5-A1                                | SD1614TT-A1                                |
|--------------------------------|--|--|
| Rated voltage Eo-p(V)          | 5  | 12   |
| Operating voltage Eo-p(V)      | 3 to 6                                     | 6 to 15                                    |
| Drive conditions               | Rated voltage, square wave form [duty 50%] | Rated voltage, square wave form [duty 50%] |
| Frequency(Hz)                  | 2048                                       | 2048                                       |
| Sound pressure(dB(A)/10cm)min. | 85   | 85   |
| Current Io-p(mA)max.           | 80   | 100  |
| DC resistance( $\Omega$ )typ.  | 70   | 120  |
| Terminal construction          | Pin terminal                               | Pin terminal                               |
| Operating temperature range    | -10 to +70°C                               | -10 to +70°C                               |
| Storage temperature range      | -20 to +80°C                               | -20 to +80°C                               |

- Please ask us for details which is designed another operating rated frequency.
- Products with 7.6mm terminal pitch are also available. Part No.: SD1614T5-B1, SD1614TT-B1

### FREQUENCY CHARACTERISTICS (TYPICAL VALUE)

#### SD1614TT-A1

##### □ Around 2000Hz

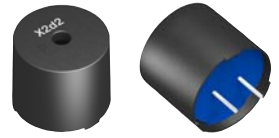


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# SD1614TT-A5ME (applicable to automobile)/ø16mm

## FEATURES

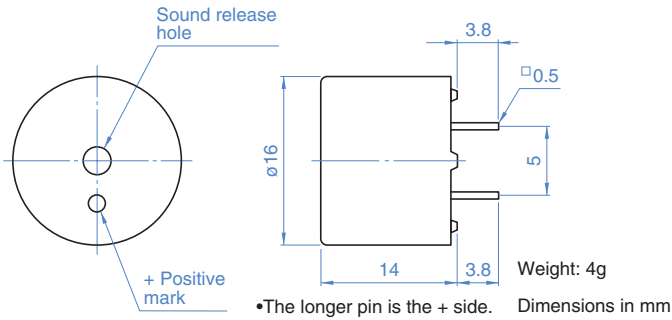
- These high reliability electromagnetic buzzers are applicable to automobile equipment.
- Pin type terminal construction enables direct mounting onto printed circuit boards.



## APPLICATION

Various alarms of automobile equipment.

## SHAPE & DIMENSIONS



## SPECIFICATIONS

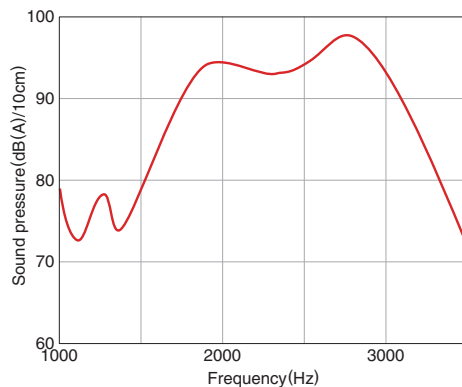
| Part No.                       | SD1614TT-A5ME                              |
|--------------------------------|--|
| Rated voltage Eo-p(V)          | 12   |
| Operating voltage Eo-p(V)      | 6 to 16                                    |
| Drive conditions               | Rated voltage, square wave form [duty 50%] |
| Frequency(Hz)                  | 2048                                       |
| Sound pressure(dB(A)/10cm)min. | 85   |
| Current Io-p(mA)max.           | 100  |
| DC resistance(Ω)typ.           | 120  |
| Terminal construction          | Pin terminal                               |
| Operating temperature range    | -40 to +85°C                               |
| Storage temperature range      | -40 to +85°C                               |

- Please ask us for details which is designed another operating rated frequency.
- Products with 7.6mm terminal pitch are also available. Part No.: SD1614TT-B3ME
- Products of terminal pitch 7.6mm and low operating voltage range (3V to 6 V) is preparing, too. Part No.: SD1614T5-B5ME

## FREQUENCY CHARACTERISTICS (TYPICAL VALUE)

### SD1614TT-A5ME

#### □ Around 2000Hz



# SDR series

## SDR08540M3-01

### FEATURES

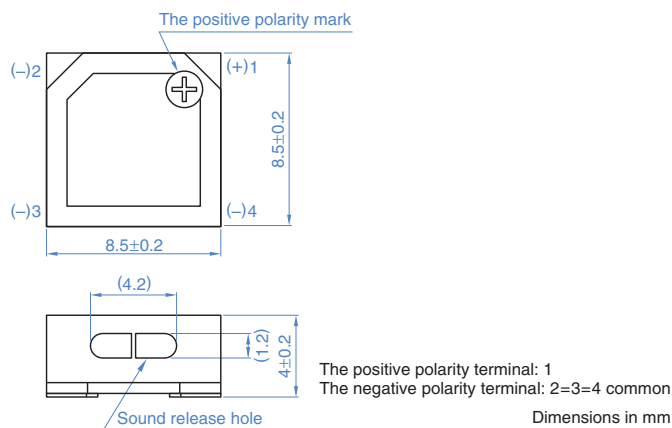
- High quality parts(yoke and magnets) provide high output level of sound pressure in spite of compact size.
- Suitable for surface mount process(SMD). Stand up to reflow process twice.
- Lead (Pb)-free correspondence that preserved environment



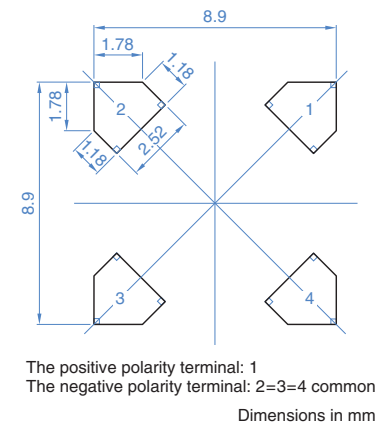
### APPLICATION

Alarm for remote control room key-, portable devices.

### SHAPE & DIMENSIONS



### RECOMMENDED LAND PATTERN

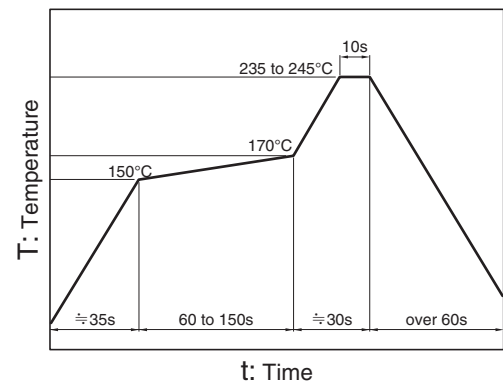


### SPECIFICATIONS

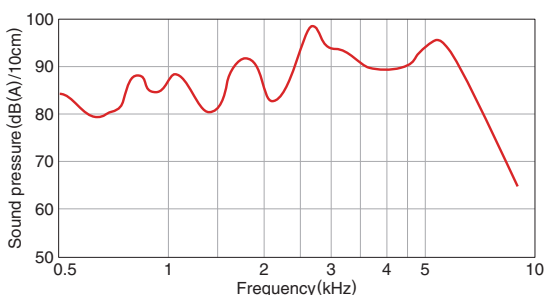
|                                |   |
|--------------------------------|---|
| Part No.                       | SDR08540M3-01                             |
| Rated voltage Eo-p(V)          | 3   |
| Operating voltage Eo-p(V)      | 1 to 5                                    |
| Drive conditions               | Rated voltage, square wave form [duty50%] |
| Frequency(Hz)                  | 2670                                      |
| Sound pressure(dB(A)/10cm)min. | 88  |
| Rated current(mA(ave))max.     | 85  |
| DC resistance(Ω)typ.           | 16  |
| Operating temperature range    | -40 to +85°C                              |
| Storage temperature range      | -40 to +85°C                              |

- Please ask us for details which is designed another operating rated frequency.

### RECOMMENDED REFLOW PROFILE



### FREQUENCY CHARACTERISTICS (REFERENCE VALUE)



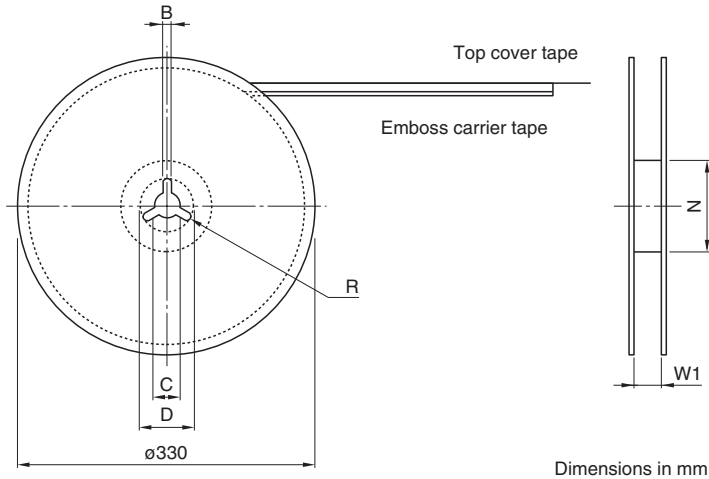
⚠ Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use.  
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## SDR series

## SDR08540M3-01

■ PACKAGING STYLE

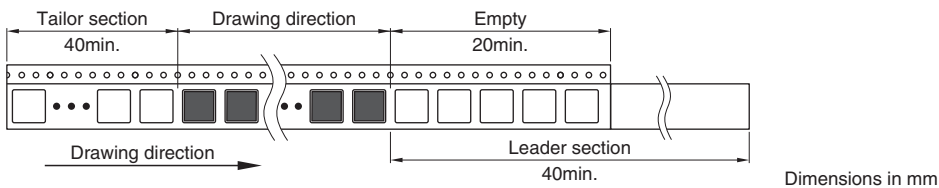
□ TAPING SPECIFICATIONS



Dimensions in mm

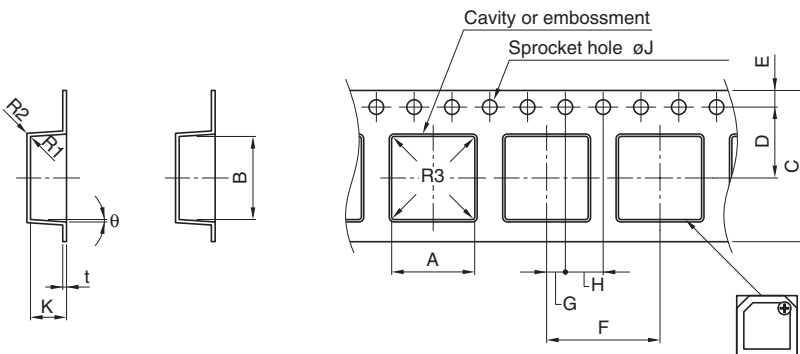
| B       | C         | D        | N      | R       | W1   |
|---------|-----------|----------|--------|---------|------|
| 2.5±0.3 | ø13.2±0.3 | 21.0±0.4 | ø100±2 | (R1.15) | 16.0 |

□ PRODUCTS INSTALL STATUS



Dimensions in mm

□ CARRIER TAPE DIMENSIONS



| A       | B       | C        | D       | E        | F        | G       | H       | J          |
|---------|---------|----------|---------|----------|----------|---------|---------|------------|
| 8.8±0.1 | 9.0±0.1 | 16.0±0.2 | 7.5±0.2 | 1.75±0.1 | 12.0±0.1 | 2.0±0.1 | 4.0±0.1 | ø1.15±0.05 |

Dimensions in mm

| K       | t        | R1      | R2      | R3      | θ       |
|---------|----------|---------|---------|---------|---------|
| 4.2±0.1 | 0.4±0.05 | 0.3max. | 0.3max. | 0.3max. | 5° max. |

•Package quantity (1000 pieces/reel)

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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.

- Please pay sufficient attentions to the warnings for safe designing when using the buzzer.  
Incorrect usage may cause smoke or fire.
- Do not make sound on the buzzer when it is close to ears.  
Listening to the buzzer when it is close to ears, or continuant listening to it for an extended period, may result in hearing disorders.  
Thoroughly warn consumers not to turn on the sound when the buzzer is close to ears.
- Do not exceed the rated operation voltage range when using the buzzer.  
If it is exceeded beyond the rated operation voltage, a built-in coil may generate heat, resulting in deterioration of the coil, which may cause a drop in sound pressure or a change in the terminal resistance value.  
If a rare short circuit occurs due to heat generated in the built-in coil, a large electrical current flows to the equipment used, possibly causing it to emit smoke or fire.
- The buzzer is a magnetic type sounder.  
Do not use it for any other purpose than a sound generation.
- Do not use the buzzer in other than atmospheric air.
- Do not use the buzzer in the following environments (excluding cases in which countermeasures are taken).
  - Corrosive gases (Cl<sub>2</sub>, NH<sub>3</sub>, SO<sub>x</sub>, NO<sub>x</sub>, etc.)
  - Places to be exposed to dust.
  - Places where rain, fog, salt water, and the like will get on the buzzer.
- After installing the buzzer when designing an apparatus, confirm that there are no abnormalities by performing a reliability evaluation test.
- Do not exceed the rated operating temperature range when using the buzzer.
- Do not use for an extended period at relative humidity in excess of 90% (maximum wet-bulb temperature of 38 °C ).
- When using the buzzer for a safety device or warning device, take all surest measures such as providing a safety circuit or the joint use of another sounder with equivalent characteristics in order to prevent accidents.
- The buzzer may be influenced by electromagnetic waves, voltage changes, and ripple voltage.  
Check the buzzer in the mounted condition, and take measures such as safety circuits, shielding, etc.
- If the buzzer is molded or secured by adhesives, thermal expansion stresses from the mold or adhesive agent may cause deterioration in a soldered terminal part.  
Before molding or securing an adhesive, consider the type, amount, hardening conditions, adhesive properties, etc., of the sealing material, and confirm the reliability.
- Do not apply vibrations or shocks (such as dropping) larger than the specified.
- Do not bend the terminal pin when soldering to install on a circuit board.
- Do not apply larger than the specified force to the terminal pin.
- Do not apply force to the terminal pin at high temperatures(when soldering).
- When soldering a terminal pin, perform the soldering in clean conditions without contamination or rust in order to avoid poor connections.
- When performing dip soldering directly for installing on a printed circuit board, be careful so that smoke from the flux, or other foreign materials, will not get into the sound emission hole.
- Do not clean(excluding products that can be cleaned).
- With regards to devices in which the consumers can touch the buzzer, thoroughly warn consumers not to put foreign materials (such as needles, hairpins, garbage, etc.) into the sound emission hole.
- As the buzzer uses a coil, it has an inductive load.  
Protect the drive circuit by putting the diodes in parallel into the buzzer.

- Do not reconfigure the buzzer.
- Sound pressure changes depending on the shape of the part to be installed in a device, or the installation location. Check the buzzer in the mounted condition.
- The buzzer has polarities.
  - When installing, be careful not to make a mistake with the polarities. Incorrect polarities will cause the following irregularities.
    - Without circuit type: differences in sound pressure will be created.
    - With circuit type: no sound will be generated.
- Frequencies other than the rated frequency will change the characteristics (sound pressure), and may cause wide unevenness.
- As the buzzer uses a magnet, it generates a surrounding magnetic field.
  - When designing a device, etc., confirm that there are no irregularities due to the magnetic field.
- Check the buzzer in the mounted condition, and take measures such as shielding, etc.
  - The characteristics of the buzzer may change because of the influence of an outside magnetic field.
- Because of deterioration or damage, maintain in rated storage temperature range, avoid environments where there are sudden temperature changes, direct sunlight, corrosive gases and dust, and store wrapped in order to avoid applying stresses.
- 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

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- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
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- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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