Audio Transformers

Isolation and Matching Transformers @ NEUTRIK

Professional audio transformers for multiple applications, audio-, studio-, and line inputs, very low distortion, excellent frequency response.

<table>
<thead>
<tr>
<th>Source Load Impedance</th>
<th>Turns Ratio</th>
<th>Max. Input Voltage</th>
<th>Ripple 30Hz - 20kHz</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>200KΩ</td>
<td>1:1</td>
<td>50mA</td>
<td>1%</td>
<td>124-650</td>
</tr>
<tr>
<td>100KΩ</td>
<td>1:4</td>
<td>100mA</td>
<td>1%</td>
<td>124-650</td>
</tr>
<tr>
<td>100KΩ</td>
<td>1:10</td>
<td>800mA</td>
<td>1%</td>
<td>124-650</td>
</tr>
</tbody>
</table>

100V Line Transformers

A range of transformers for converting low impedance speakers (8Ω or 16Ω), so that they can be used on long cables runs and connected to 100V line P.A. speaker systems.

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Power Tappings</th>
<th>Secondary Fixing Centres</th>
<th>Dimensions (W x H x D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>177-8003</td>
<td>0.6, 1, 2.5, 5, 10W</td>
<td>8 and 16Ω</td>
<td>50mm x 35mm x 40mm</td>
</tr>
<tr>
<td>177-8004</td>
<td>2.5, 5, 10, 20W</td>
<td>8 and 16Ω</td>
<td>60mm x 40mm x 45mm</td>
</tr>
<tr>
<td>177-8005</td>
<td>1.5, 3.75, 7.5, 15, 30W</td>
<td>8 and 16Ω</td>
<td>65mm x 45mm x 50mm</td>
</tr>
<tr>
<td>177-8007</td>
<td>0.5, 1, 2, 4Ω</td>
<td>8 and 16Ω</td>
<td>50mm x 30mm x 40mm</td>
</tr>
<tr>
<td>177-8008</td>
<td>1.2, 4, 8Ω</td>
<td>8 and 16Ω</td>
<td>60mm x 45mm x 50mm</td>
</tr>
<tr>
<td>177-8009</td>
<td>4.8, 12, 16Ω</td>
<td>8 and 16Ω</td>
<td>60mm x 45mm x 50mm</td>
</tr>
<tr>
<td>177-8010</td>
<td>1.25, 2.5, 5, 10, 15W</td>
<td>8 and 16Ω</td>
<td>60mm x 45mm x 50mm</td>
</tr>
<tr>
<td>177-8011</td>
<td>10, 20, 30, 40W</td>
<td>8 and 15Ω</td>
<td>69mm x 57mm x 43mm</td>
</tr>
</tbody>
</table>

Sounders

Transducers contain the basic sound generating element within a resonant housing. In order to produce the specified sound pressure level a transducer must be driven with a 50.50 duty cycle square waveform of the correct amplitude and frequency. Piezo-ceramic transducers are voltage driven devices operating up to a maximum specified peak to peak voltage - the higher the applied p-p voltage the greater the sound pressure level.

Electromagnetic transducers are current driven devices operating within a lower p-p voltage range - ensure that sufficient drive current is available to allow continuous operation.

Transducers give the opportunity to be driven at various frequencies but care must be taken to pick frequencies where secondary resonance gives sufficient sound pressure level.

Alarms and Buzzers contain internal drive circuitry to produce a specific drive waveform and are driven from a dc voltage. This is a simple method of producing sound without the need for external drive circuits. Since the drive circuit is internal the operating frequency is fixed and is not dependant on input voltage. However with piezo-ceramic alarms the sound pressure is still dependent on input voltage - the higher the dc voltage the greater the sound pressure.

Supply Voltage | - | Material | LCP
| Current Rating | 100mA | Operating Temperature | -30°C to +70°C
| Sound Pressure Level (SPL) | 78dB | Dimensions (H x W x D) | 50 x 50 x 15 mm
| Sound Level Distance | 10cm | Weight | 0.3g
| Self Resonant Frequency | 4kHz |

Surface Mount Audio Transducer

Piezo Ceramic

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SMT-1141-T-3-R</td>
<td>1+ 10+ 25+ 50+</td>
<td>4100Hz</td>
<td>78dB</td>
<td>1+ 10+ 25+ 50+</td>
</tr>
<tr>
<td>SMT-1141-T-3-R</td>
<td>1+ 10+ 25+ 50+</td>
<td>4100Hz</td>
<td>78dB</td>
<td>1+ 10+ 25+ 50+</td>
</tr>
</tbody>
</table>

Surface Mount Audio Transducer

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<th></th>
</tr>
</thead>
<tbody>
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<td>SMT-1341-T-R</td>
<td>1+ 10+ 25+ 50+</td>
<td>4100Hz</td>
<td>78dB</td>
<td>1+ 10+ 25+ 50+</td>
</tr>
<tr>
<td>SMT-1341-T-R</td>
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<td>4100Hz</td>
<td>78dB</td>
<td>1+ 10+ 25+ 50+</td>
</tr>
</tbody>
</table>

Surface Mount Audio Transducer

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SMT-1640-S-R</td>
<td>1+ 10+ 25+ 50+</td>
<td>4000Hz</td>
<td>70dB</td>
<td>1+ 10+ 25+ 50+</td>
</tr>
<tr>
<td>SMT-1640-S-R</td>
<td>1+ 10+ 25+ 50+</td>
<td>4000Hz</td>
<td>70dB</td>
<td>1+ 10+ 25+ 50+</td>
</tr>
</tbody>
</table>
**Surface Mount Audio Transducer - continued**

### Piezo Ceramic

- **SMD mounting**
- **3.5mm low profile miniature case configuration**
- **Compatible with connection, IR and vapour phase**
- **2838KHz frequency**
- **Voltage range: 3.0 to 4.6V p-p**

<table>
<thead>
<tr>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMT-1026-S-R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMT-1028-S-R</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Piezo Ceramic – Audio Visual

- **Rated Voltage 3V**
- **SPL (0.3W @10cm) 74dB**
- **Rated Frequency 4000Hz**
- **Coil Resistance 18Ω±5%**

<table>
<thead>
<tr>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFT-03C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Piezoelectric Transducer - Surface Mount

- **Surface mount piezo ceramic transducer**
- **Compatible with connection, IR and vapour phase**
- **2838KHz frequency**
- **Voltage range: 3.0 to 4.6V p-p**

<table>
<thead>
<tr>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMT-1026-S-R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMT-1028-S-R</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Piezo Transducer, PCB Mount, 5Vp-p

- **PCB mountable**
- **Low power consumption**
- **Sealed base**
- **Wave solderable and washable**

<table>
<thead>
<tr>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>KMTG1261</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Magnetic Transducer - Surface Mount

- **Extremely small reflowable magnetic sounder**
- **High output - cavity for increased SPL not required**
- **Applications: Digital Cameras, Thermometer / Blood Pressure Monitor, Remote Control**

<table>
<thead>
<tr>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT-2220-T-1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### PCB Mount Audio Transducer

- **PCB mounting**
- **2048 Hz frequency**
- **Increased dB**
- **1 to 30V p-p voltage range**

<table>
<thead>
<tr>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT-2720-T-1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Piezo Sounders – External Drive

- PCB mounting piezo sounders
- Low power consumption
- Applications include office equipment, commercial and domestic appliances

<table>
<thead>
<tr>
<th>Dimensions (mm):</th>
<th>Dia.</th>
<th>Height</th>
<th>Lead</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>(D / W / H)</td>
<td>17</td>
<td>7</td>
<td>6.5</td>
<td>119-2517</td>
</tr>
<tr>
<td>(W / H)</td>
<td>22</td>
<td>7</td>
<td>6.5</td>
<td>119-2512</td>
</tr>
<tr>
<td>(W / H)</td>
<td>(7 / 22)</td>
<td>25.6</td>
<td>10</td>
<td>119-2514</td>
</tr>
<tr>
<td>(W / H)</td>
<td>12.6</td>
<td>6.5</td>
<td>3.5</td>
<td>182-3886</td>
</tr>
</tbody>
</table>

- Input Voltage: 15.2 x 1mm
- Weight: 4.4g
- Operating Temperature: -30°C to +85°C
- Capacitance: 0.018µF
- Current Consumption (max.): 10mA
- Drive Frequency: 3kHz
- Operating Voltage: 30V
- Mftrs List No.: KPEG130

### Piezo Sounders – Fitting Leads

- A range of general purpose pieze ceramic transducers
- Flange mounting except 119-3640
- Low current consumption and a high sound pressure level

<table>
<thead>
<tr>
<th>Dimensions (mm):</th>
<th>(W x H x P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring Terminals</td>
<td>24 x 5 x 29mm</td>
</tr>
<tr>
<td>Surface Mount</td>
<td>30 x 5.1 x 35mm</td>
</tr>
</tbody>
</table>

- Weight: 2g
- Dimensions: 12.8 x 12.8 x 6.5mm
- Operating Temperature: -20°C to 70°C
- Sound pressure level: 75dB @ 10cm
- Voltage (max): 4 - 7V dc
- Rated Voltage: 5V dc
- Material: PPS

### Piezo Buzzers

- A self contained solid state device that produces a sound when DC voltage is applied.
- Housing material: PPS
- Electrode: Brass
- Housing material: PPS
- Resonant frequency: 2400Hz

<table>
<thead>
<tr>
<th>Dimensions (mm):</th>
<th>(W x H x P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.8 x 12.8 x 7.1mm</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature: -20°C to 70°C</td>
<td></td>
</tr>
<tr>
<td>Sound Output: 88dB (at 10cm at rated V)</td>
<td></td>
</tr>
<tr>
<td>Material: PPS</td>
<td></td>
</tr>
<tr>
<td>Mounting: SMD</td>
<td></td>
</tr>
<tr>
<td>Weight: 2g</td>
<td></td>
</tr>
</tbody>
</table>

### Piezo Sounders – Surface Mount

- High performance piezo ceramic element offers high sound pressure level and clear sound
- Suitable for reflow soldering - non washable
- Small, thin and lightweight

<table>
<thead>
<tr>
<th>Dimensions (mm):</th>
<th>(W x H x P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.2 x 1mm</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature Range: -20°C to 70°C</td>
<td></td>
</tr>
<tr>
<td>Voltage (max): 25V p-p</td>
<td></td>
</tr>
</tbody>
</table>

### Sounders - Buzzers & Sirens

#### Surface Mount Audio Buzzer

- SMA Mounting
- 6.5mm low profile case configuration
- Compatible with connection, lift and vapour phase
- Sealed with removable tab for washing
- 2400Hz frequency

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>5V DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound pressure level</td>
<td>88dB</td>
</tr>
<tr>
<td>Resonant frequency</td>
<td>2400Hz</td>
</tr>
</tbody>
</table>

### Piezo Transducers, PCB Mount, 9Vp-p

- An externally driven device that contains no electronics and requires circuitry to produce a tone.
- Fitted with flying leads
- Housing material: Brass

<table>
<thead>
<tr>
<th>Specifications</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Voltage</td>
<td>15V</td>
<td>15V</td>
</tr>
<tr>
<td>Operatint Voltage</td>
<td>1 - 30V</td>
<td>5mA</td>
</tr>
<tr>
<td>Rated Current</td>
<td>1 - 30V</td>
<td>5mA</td>
</tr>
<tr>
<td>SPL (at 1cm)</td>
<td>≥85dB</td>
<td>≥85dB</td>
</tr>
<tr>
<td>Resonant Frequency</td>
<td>4.3kHz</td>
<td>4.3kHz</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-20°C to 60°C</td>
<td>-20°C to 60°C</td>
</tr>
<tr>
<td>Housing Material</td>
<td>Brass</td>
<td>Brass</td>
</tr>
<tr>
<td>Mounting Pins</td>
<td>2 pins</td>
<td>2 pins</td>
</tr>
<tr>
<td>Pin Dimensions</td>
<td>L=6, W=12.6, D=0.4mm</td>
<td>L=6, W=12.6, D=0.4mm</td>
</tr>
<tr>
<td>Lead Length</td>
<td>50mm</td>
<td>50mm</td>
</tr>
<tr>
<td>Dimensions</td>
<td>25.2 x 7.5mm</td>
<td>25.2 x 7.5mm</td>
</tr>
<tr>
<td>Weight</td>
<td>2g</td>
<td>2g</td>
</tr>
</tbody>
</table>

### Piezo Buzzers

- A self contained solid state device that produces a sound when DC voltage is applied.
- Housing material: PPS
- Electrode: Brass
- Housing material: PPS
- Resonant frequency: 2400Hz

<table>
<thead>
<tr>
<th>Specifications</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Voltage</td>
<td>5V DC</td>
<td>5V DC</td>
</tr>
<tr>
<td>Sound pressure level</td>
<td>88dB</td>
<td>88dB</td>
</tr>
<tr>
<td>Resonant frequency</td>
<td>2kHz</td>
<td>2kHz</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-20°C to 70°C</td>
<td>-20°C to 70°C</td>
</tr>
<tr>
<td>Dimensions (WxHxP)</td>
<td>12.8 x 12.8 x 6.5mm</td>
<td>12.8 x 12.8 x 6.5mm</td>
</tr>
<tr>
<td>Weight</td>
<td>2g</td>
<td>2g</td>
</tr>
</tbody>
</table>

### Piezo Transducers

- Multi purpose miniature transducers
- Sound outputs up to 92dB
- Applications include office equipment, telecoms and computer equipment

<table>
<thead>
<tr>
<th>Specifications</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Order Code</td>
<td>119-3640</td>
<td>119-3641</td>
</tr>
<tr>
<td>Mftrs List No.</td>
<td>KPEG115</td>
<td>KPEG116</td>
</tr>
<tr>
<td>Operating Voltage</td>
<td>30V</td>
<td>30V</td>
</tr>
<tr>
<td>Drive Frequency</td>
<td>4kHz</td>
<td>4kHz</td>
</tr>
<tr>
<td>Current Consumption</td>
<td>11mA</td>
<td>11mA</td>
</tr>
<tr>
<td>Min. Sound output</td>
<td>85dB</td>
<td>85dB</td>
</tr>
<tr>
<td>Resonant Frequency</td>
<td>4.3kHz</td>
<td>4.3kHz</td>
</tr>
<tr>
<td>Capacitance</td>
<td>0.015µF</td>
<td>0.015µF</td>
</tr>
<tr>
<td>Material</td>
<td>PPS</td>
<td>PPS</td>
</tr>
<tr>
<td>Weight</td>
<td>2g</td>
<td>2g</td>
</tr>
</tbody>
</table>

### Piezo Buzzers – Flying Leads

- A range of general purpose pieze ceramic transducers
- Flange mounting except 119-3640
- Low current consumption and a high sound pressure level

<table>
<thead>
<tr>
<th>Specifications</th>
<th></th>
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<tbody>
<tr>
<td>Order Code</td>
<td>119-3640</td>
<td>119-3641</td>
</tr>
<tr>
<td>Mftrs List No.</td>
<td>KPEG110</td>
<td>KPEG111</td>
</tr>
<tr>
<td>Operating Voltage</td>
<td>30V</td>
<td>30V</td>
</tr>
<tr>
<td>Drive Frequency</td>
<td>4.1kHz</td>
<td>4.1kHz</td>
</tr>
<tr>
<td>Current Consumption</td>
<td>12mA</td>
<td>12mA</td>
</tr>
<tr>
<td>Min. Sound output</td>
<td>90dB</td>
<td>90dB</td>
</tr>
<tr>
<td>Resonant Frequency</td>
<td>4 kHz</td>
<td>4 kHz</td>
</tr>
<tr>
<td>Capacitance</td>
<td>0.025µF</td>
<td>0.025µF</td>
</tr>
<tr>
<td>Material</td>
<td>PPS</td>
<td>PPS</td>
</tr>
<tr>
<td>Weight</td>
<td>2g</td>
<td>2g</td>
</tr>
</tbody>
</table>

### Sounders - Buzzers & Sirens

#### Surface Mount Audio Buzzer

- SMA Mounting
- 6.5mm low profile case configuration
- Compatible with connection, lift and vapour phase
- Sealed with removable tab for washing
- 2400Hz frequency

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>5V DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound pressure level</td>
<td>88dB</td>
</tr>
<tr>
<td>Resonant frequency</td>
<td>2400Hz</td>
</tr>
</tbody>
</table>

#### Piezo Buzzers

- A self contained solid state device that produces a sound when DC voltage is applied.
- Housing material: PPS
- Electrode: Brass
- Housing material: PPS
- Resonant frequency: 2400Hz

<table>
<thead>
<tr>
<th>Specifications</th>
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<tbody>
<tr>
<td>Order Code</td>
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<td>119-3641</td>
</tr>
<tr>
<td>Mftrs List No.</td>
<td>KPEG110</td>
<td>KPEG111</td>
</tr>
<tr>
<td>Operating Voltage</td>
<td>30V</td>
<td>30V</td>
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<td>90dB</td>
</tr>
<tr>
<td>Resonant Frequency</td>
<td>4 kHz</td>
<td>4 kHz</td>
</tr>
<tr>
<td>Capacitance</td>
<td>0.025µF</td>
<td>0.025µF</td>
</tr>
<tr>
<td>Material</td>
<td>PPS</td>
<td>PPS</td>
</tr>
<tr>
<td>Weight</td>
<td>2g</td>
<td>2g</td>
</tr>
</tbody>
</table>
Electromechanical Buzzers

An externally driven device that contains no electronics and requires circuitry to produce a tone.

- PCB mountable
- Low current consumption
- Weight: 0.6g
- Dimensions (Dia. x H): Ø9.6 x 5mm
- Operating Temperature: -30°C to 70°C
- Resonant Frequency (at rated V): 2.3kHz
- SPL (at 10cm at rated V): 85dB
- Rated Current (at rated V): 30mA
- Operating Voltage: 4 - 8VDC

Electromechanical Buzzers, PCB Mount

- Black in colour
- Built-in oscillating circuit
- Sealed structure
- Weight: 2g
- Dimensions (Dia. x H): Ø9.6 x 5mm
- Operating Temperature: -20°C to 70°C
- Resonant Frequency (at rated V): 3.4kHz
- SPL (at 10cm at rated V): 80dB
- Rated Current (at rated V): 7mA
- Operating Voltage: 3 - 16VDC

Piezo Buzzer, PCB Mount, 12V dc

A self contained solid state device that produces a sound when DC voltage is applied.

- Housing material: Noryl
- Black in colour
- Built-in oscillating circuit
- Sealed base
- Low power consumption
- Wave solderable and washable

Piezo Buzzer, PCB Mounting

- Black in colour
- Wave solderable and washable
- Sealed structure
- Weight: 1g
- Dimensions (Dia. x H): Ø9.6 x 5mm
- Operating Temperature: -20°C to 70°C
- Resonant Frequency (at rated V): 4kHz
- SPL (at 10cm at rated V): 85dB
- Rated Current (at rated V): 7mA
- Operating Voltage: 3 - 16VDC

Magnetic Buzzer

PCB Mounting

- Black in colour
- Built-in oscillating circuit
- Sealed structure
- Weight: 2g
- Dimensions (Dia. x H): Ø9.6 x 5mm
- Operating Temperature: -20°C to 70°C
- Resonant Frequency (at rated V): 3.4kHz
- SPL (at 10cm at rated V): 80dB
- Rated Current (at rated V): 7mA
- Operating Voltage: 3 - 16VDC

Piezo Buzzer - PCB Pins

A self contained solid state device that produces a sound when DC voltage is applied.

- Black in colour
- Pin material: Red copper

<table>
<thead>
<tr>
<th>Mfrs.</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABI-001-RC</td>
<td>102-2292</td>
</tr>
<tr>
<td>ABI-009-RC</td>
<td>102-2397</td>
</tr>
<tr>
<td>ABI-010-RC</td>
<td>102-2399</td>
</tr>
<tr>
<td>ABI-011-RC</td>
<td>102-2400</td>
</tr>
<tr>
<td>ABI-023-RC</td>
<td>102-0023</td>
</tr>
<tr>
<td>ABI-033-RC</td>
<td>130-0023</td>
</tr>
<tr>
<td>List No.</td>
<td>Order Code</td>
</tr>
<tr>
<td>102-2392</td>
<td>102-2397</td>
</tr>
<tr>
<td>102-2399</td>
<td>102-2400</td>
</tr>
<tr>
<td>130-0023</td>
<td></td>
</tr>
</tbody>
</table>
Piezo Buzzers

- General purpose continuous tone piezo buzzers
- Built in drive circuit
- High sound pressure level with a low current consumption

Specifications:
- Resonant Frequency: 3.3kHz
- Operating Voltage: 3 - 16VDC
- Housing Material: Noryl
- SPL (at 10cm at rated V): ≥ 50dB
- Operating Temperature: -30°C to +60°C
- Weight: 5g
- Dimensions (Dia x H): 23.3 x 10.2mm
- Pins (Pitch x Pin): 9 x 24mm

Order Code: 119-3652

Piezo Buzzers

- General purpose continuous piezo buzzers
- Built in drive circuit
- 24mm diameter alarms with 3 frequency options

Specifications:
- Resonant Frequency: 2.9kHz
- Operating Voltage: 3 - 20VDC
- Housing Material: ABS
- SPL (at 10cm at rated V): ≥ 50dB
- Operating Temperature: -30°C to +60°C
- Weight: 5g
- Dimensions (Dia x H): 23.8 x 16mm
- Pins (Pitch x Pin): 15 x 0.8mm

Order Code: 119-3670

Piezo Alarms

- General purpose continuous piezo alarm
- Built in drive circuit
- 24mm diameter alarms with 3 frequency options

Specifications:
- Resonant Frequency: 3.2kHz
- Operating Voltage: 3 - 20VDC
- Housing Material: ABS
- SPL (at 10cm at rated V): ≥ 50dB
- Operating Temperature: -30°C to +60°C
- Weight: 5g
- Dimensions (Dia x H): 23.3 x 10.2mm
- Pins (Pitch x Pin): 15 x 0.8mm

Order Code: 119-3649

Piezo Buzzers

- General purpose piezo ceramic audio indicators

Specifications:
- Resonant Frequency: 3.9kHz
- Operating Voltage: 3 - 20VDC
- Housing Material: ABS
- SPL (at 10cm at rated V): ≥ 50dB
- Operating Temperature: -30°C to +60°C
- Weight: 5g
- Dimensions (Dia x H): 23.8 x 16mm
- Pins (Pitch x Pin): 15 x 0.8mm

Order Code: 119-3676

Piezo Buzzers

- General purpose piezo ceramic audio indicators

Specifications:
- Resonant Frequency: 3.2kHz
- Operating Voltage: 3 - 20VDC
- Housing Material: ABS
- SPL (at 10cm at rated V): ≥ 50dB
- Operating Temperature: -30°C to +60°C
- Weight: 5g
- Dimensions (Dia x H): 23.3 x 10.2mm
- Pins (Pitch x Pin): 15 x 0.8mm

Order Code: 119-3675

Audio, Office and Electrical

Audio Visual – Components
Piezo Buzzers - Buzzers & Sirens - continued

Panel Mount Piezo Ceramic Buzzer

AI-4328/9

- Continuous or pulsing tones
- Panel mount design
- Quick connect terminals

PIEZO BUZZER, PANEL MOUNT

<table>
<thead>
<tr>
<th>Mfrs.</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>List No.</td>
<td>Order Code</td>
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<tr>
<td>AI-4328-P-C28-2-R</td>
<td>119-2953</td>
</tr>
<tr>
<td>AI-4329-P-FF28</td>
<td>119-2955</td>
</tr>
</tbody>
</table>

Piezo Buzzer, Leads, 12V dc

- Housing material: ABS
- Black in colour
- Built-in oscillating circuit
- Flange mounted with wire leads

PIEZO BUZZER, LEADS, 12V dc

<table>
<thead>
<tr>
<th>Mfrs.</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>List No.</td>
<td>Order Code</td>
</tr>
<tr>
<td>AI-4328-P-C28-2-R</td>
<td>119-2953</td>
</tr>
<tr>
<td>AI-4329-P-FF28</td>
<td>119-2955</td>
</tr>
</tbody>
</table>

Audio Visual – Components

Piezo Buzzers - Wire Type

KPEG251

Rated Frequency: 3.5kHz ±500Hz
Operating Voltage: 4 - 28V dc
Rated Current (at 12V dc): 6mA
Operating Temperature: -30°C to 85°C
Dimensions (Dia. x H): Ø 28mm x 25.4mm
Weight: 10.1g

KPEG253

Rated Frequency: 3.5kHz ±500Hz
Operating Voltage: 4 - 28V dc
Rated Current (at 12V dc): 5mA
Operating Temperature: -30°C to 85°C
Dimensions (Dia. x H): Ø 28mm x 25.4mm
Weight: 10.2g

KPEG623AN

Rated Frequency: 3.5kHz ±500Hz
Rated Voltage: 60 - 250V dc
Rated Current: 16mA
Rated Power: 60mW
Operating Temperature: -20°C to 60°C
Dimensions (Dia. x H): Ø 42.5mm x 42mm
Weight: 51g

Wire Type

<table>
<thead>
<tr>
<th>Mfrs.</th>
<th>List No.</th>
<th>Order Code</th>
<th>Price Each</th>
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<tbody>
<tr>
<td>KPEG251</td>
<td>150-2699</td>
<td>$12.21</td>
<td>$11.09</td>
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<tr>
<td>KPEG253</td>
<td>150-2701</td>
<td>$12.21</td>
<td>$11.09</td>
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<tr>
<td>KPEG623AN</td>
<td>150-2707</td>
<td>$17.36</td>
<td>$15.71</td>
</tr>
</tbody>
</table>

PIEZO BUZZER, PCB MOUNT, 12V dc

- Housing material: ABS
- Black in colour
- Built-in oscillating circuit
- Flange mounted with wire leads

<table>
<thead>
<tr>
<th>Mfrs.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>List No.</td>
<td>102-2390</td>
<td>1+</td>
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</tbody>
</table>

PIEZO BUZZER, LEADS, 12V dc

- Housing material: ABS
- Black in colour
- Built-in oscillating circuit
- Flange mounted with wire leads

<table>
<thead>
<tr>
<th>Mfrs.</th>
<th>Order Code</th>
<th>Price Each</th>
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</thead>
<tbody>
<tr>
<td>List No.</td>
<td>102-2390</td>
<td>1+</td>
</tr>
</tbody>
</table>

PRO-SIGNAL®

- High efficiency
- Wide frequency range
- Low power consumption

<table>
<thead>
<tr>
<th>PRO-SIGNAL®</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>List No.</td>
<td>150-2703</td>
</tr>
</tbody>
</table>

IMPROVED BACK ORDER DELIVERY

Receive email updates with the exact status, due date and despatch information of all your back order items farne.com
Piezo Buzzer - 3 Tone Options

- A range of flange or PCB mounting piezo audio indicators
- Choice of tones
- Wide operating voltage range

119-3668 119-3671

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Mfrs List No.</th>
<th>Oscillating Frequency</th>
<th>Operating Voltage</th>
<th>Current Consumption (max @12V)</th>
<th>Sound output (min @30cm/12V)</th>
<th>Mftrs List No.</th>
<th>Tone</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>119-3667</td>
<td>KPEG-350</td>
<td>2.9kHz</td>
<td>3-28Vdc</td>
<td>37mA</td>
<td>85dB</td>
<td>KPEG-350</td>
<td>Slow Pulse</td>
<td>15g</td>
</tr>
<tr>
<td>119-3668</td>
<td>KPEG-351</td>
<td>2.9kHz</td>
<td>3-28Vdc</td>
<td>8mA</td>
<td>81dB</td>
<td>KPEG-351</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td>119-3669</td>
<td>KPEG-353</td>
<td>2.9kHz</td>
<td>3-28Vdc</td>
<td>60mA</td>
<td>81dB</td>
<td>KPEG-353</td>
<td>Fast Pulse</td>
<td></td>
</tr>
<tr>
<td>119-3671</td>
<td>KPEG-500</td>
<td>2.9kHz</td>
<td>3-13Vdc</td>
<td>63mA</td>
<td>104dB</td>
<td>KPEG-500</td>
<td>Continuous</td>
<td></td>
</tr>
</tbody>
</table>

Piezo Buzzer - Flying Leads

- General purpose flange mounting piezo ceramic audio indicator
- Loud, clear, penetrating sound
- Wide input voltage range - low current

119-3670

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Mfrs List No.</th>
<th>Oscillating Frequency</th>
<th>Operating Voltage</th>
<th>Current Consumption (max @12V)</th>
<th>Sound output (min @30cm/12V)</th>
<th>Mftrs List No.</th>
<th>Tone</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>119-3670</td>
<td>KPEG-300</td>
<td>2.9kHz</td>
<td>3-28Vdc</td>
<td>7mA</td>
<td>85dB</td>
<td>KPEG-300</td>
<td>Slow Pulse</td>
<td>14g</td>
</tr>
</tbody>
</table>

Piezo Buzzer, Panel Mounting with Leads

- A self contained solid state device that produces a sound when DC voltage is applied.
- Panel or base flange mounted
- Black in colour
- Housing material: ABS
- Fitted with 100mm flying leads

119-25230

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Mfrs List No.</th>
<th>Rated Voltage (Vdc)</th>
<th>Rated Current (mA)</th>
<th>Lead length</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>119-25230</td>
<td></td>
<td>12V</td>
<td>15</td>
<td>100</td>
<td>5.5g</td>
</tr>
</tbody>
</table>

Panel Mounting Buzzer

- Bush mounting panel audio indicator
- Continuous and fast pulse
- Screw and fast on terminations

Diam: 36.5, Body H = 4, Bush H = 19.5
Bush Dia = 31.5, Nut Dia = 37.8

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Mfrs List No.</th>
<th>Operating Voltage (V dc)</th>
<th>Tone</th>
<th>Operating Type</th>
<th>Current Consumption (mA)</th>
<th>Sound Pressure Level, dB (@30cm)</th>
<th>Sound Exit Side</th>
<th>Panel Hole (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>119-3639</td>
<td></td>
<td>6-28</td>
<td></td>
<td>DC Only</td>
<td>25</td>
<td>12</td>
<td>80</td>
<td>7.6</td>
</tr>
</tbody>
</table>

Waterproof Buzzer - PCB Pins

- Model: KPEG244
- Rated Frequency: 5kHz
- Rated Voltage: 12V
- Current Consumption (Max): 35mA
- Coil Resistance: 7Ω
- SPL (12Vdc @30cm): 81dB
- Sound Ext: Side
- Weight: 54g

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Mfrs List No.</th>
<th>Rated Voltage</th>
<th>Rated Current (at rated V)</th>
<th>SPL (at 30cm @ rated V)</th>
<th>Resonant Frequency</th>
<th>Tone Type</th>
<th>Operating Temperature</th>
<th>Mfrs. List No.</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>112-3672</td>
<td></td>
<td>12V</td>
<td>7.5 – 16Vdc</td>
<td>180dB</td>
<td>4kHz</td>
<td>Continuous</td>
<td>-20°C to +60°C</td>
<td></td>
<td>1+ 10+ 50+ 100+ 250+</td>
</tr>
</tbody>
</table>
Sounders - Buzzers & Sirens - continued

Waterproof Buzzers - Flying Leads
KPEG243 & KPEG267

Dia. 14mm, L=9.5mm, Weight 10g
Dia. 25.6mm, L=15mm, Weight 41g
Fixing Holes 2x 3.0mm, 32mm apart

Model  | KPEG243  | KPEG267  
-------|----------|----------
Rated Frequency | 5kHz  | 2.8kHz  
Operating Voltage | 9 - 18V | 6 - 14V  
Rated Voltage | 12V  | 12V  
Current Consumption (Max) | 35mA  | 35mA  
Cell Resistance | 4Ω  | 4Ω  
SPL (12V @30cm) | 80dB  | 85dB  
Sound Output | 30Vp-p | 60Vp-p  
Operating Temperature | -30°C to +85°C  | -30°C to +85°C  
Lead Length | 80mm  | 100mm  

Order Code  | List No.  | Price Each  
-----------|----------|-----------
KPEG243    | 129-9870B |          
KPEG267    | 129-9871B |          

Receivers

Balanced Armature Receivers

BK Series
- High sensitivity
- Low distortion - Total Harmonic Distortion: 2% typical @ 500Hz, nominal drive
- Self-shielded for low magnetic radiation

ED Series
- High sensitivity
- Low distortion - Total Harmonic Distortion: 1.4% typical @ 800Hz, nominal drive
- Self-shielded for low magnetic radiation

FK Series
- High sensitivity
- Low distortion - Total Harmonic Distortion: 2.5% typical @ 800Hz, nominal drive
- Self-shielded for low magnetic radiation
- 34% smaller volume than the BK Series

Balanced-armature, magnetic technology to give high efficiency, stability and reliability.

Mfrs.  | List No.  | Order Code  | Price Each  
-------|----------|------------|-----------
BK28507 | 120-0706  |            |          
ED21913 | 120-0710  |            |          
EH23030 | 120-0711B |            |          
FK24451 | 120-0712B |            |          

Order Code  | Price Each  
-----------|-----------
1+          | 10+       | 50+       | 100+      | 250+      |

Piezo Ceramic Speaker

- Low profile multi-purpose piezo ceramic speaker
- Integral mounting ring and flying lead connections
- A resonant cavity should be designed in to equipment to focus sound

H=2.2 Dia=50, Lead length=100

Order Code  | List No.  | Price Each  
-----------|----------|-----------
KPEG264     | 129-3664  |          

Piezo Element 27mm

An externally driven device that contains no electronics and requires circuitry to produce a tone.
- Reliable and lightweight
- Low power consumption

Capacitance | 25.000pF  
Resonant Frequency | 4000Hz  
Resonant Impedance | 300 ohms  
Lead Length | 200mm  
Sound Output | 90dB  
Operating Temperature | -20°C to +60 °C  

Mfrs.  | List No.  | Order Code  | Price Each  
-------|----------|------------|-----------
ABT-441-RC | 167-5548  |            |          

Piezo Element 35mm

An externally driven device that contains no electronics and requires circuitry to produce a tone.
- With feedback (blue fitted lead)
- Stainless steel piezo element
- Fitted with 90mm flying leads with ceramic disc

Capacitance | 25.000pF  
Resonant Frequency | 2500Hz  
Resonant Impedance | 300 ohms  
Lead Length | 90mm  
Operating Temperature | -20°C to +60 °C  

Mfrs.  | List No.  | Order Code  | Price Each  
-------|----------|------------|-----------
ABT-448-90-RC | 167-5549B |            |          

Loudspeakers - Component

Piezo Diaphragms
- Multi purpose Piezo diaphragms
- External drive
- Ultra low profile
- Applications include keyboards, office equipment, telephones and computer equipment

The first online technical portal for design engineers
Log on, research, refine and design
**Sub-Miniature Speakers**

- **Rated Frequency:** 800Hz ±100Hz
- **Nominal Input (@ 25mm):** 0.5W
- **Impedance:** 8Ω
- **SPL (0.3W @10cm):** 90±3dB
- **Operating Temperature:** -30°C to +5°C

**Order Code:** 129-9760

**Price Each:** 1+ 10+ 50+ 100+

**Dimensions:** 120 x 10 x 10mm

**Weight:** 8.5g

---

**PCB Mount Miniature Speakers**

- **PCB mounting**
- **1200 Hz frequency**

Designed to satisfy the need for a small, PCB mountable speaker transistor for use in keyboards. It has a low profile and a sound output suitable for an office-type environment.

**Model:** KDMG10008C-03

**Order Code:** 119-2971

**Price Each:** 1+ 10+ 100+

**Dimensions:** 12.0 x 1.2mm

**Weight:** 2.3g

---

**Sub-Miniature Speakers**

- **Rated Frequency:** 1200Hz - 10000Hz
- **Rated Impedance:** 8Ω
- **SPL (0.2W @10cm):** 85dB (A)
- **Operating Frequency Range:** 20kHz - 10k Hz

**Order Code:** 119-2971

**Price Each:** 1+ 10+ 100+

**Dimensions:** 12.5 x 1.5mm

**Weight:** 0.7g

---

**PCB Mounting**

- **with flying lead**, H=8.5, Dia=12.0
- **Lead length=50**

**Model:** KDMG13008L-02

**Order Code:** 129-9881

**Price Each:** 1+ 10+ 100+

**Dimensions:** 12.5 x 1.5mm

**Weight:** 0.7g

---

**Micro Loudspeakers**

- **Rated Frequency Range:** 1200Hz to 100kHz
- **Resonant Frequency:** 2048Hz
- **Impedance:** 100Ω
- **Maximum Input Power:** 0.3W

**Order Code:** 119-1946

**Price Each:** 1+ 25+ 100+ 250+

**Dimensions:** 28 x 4mm

**Weight:** 2.3g

---

**KDMG10008C**

- **Model:** KDMG10008C-03
- **Order Code:** 129-9880
- **Price Each:** 1+ 10+ 100+

**KDMG13008L-02**

- **Order Code:** 129-9881
- **Price Each:** 1+ 10+ 50+ 100+

---

**PCB Mounting**

- **with flying lead**, H=8.5, Dia=12.0
- **Lead length=50**

**Model:** KDMG13008L-02

**Order Code:** 129-9881

**Price Each:** 1+ 10+ 50+ 100+

**Dimensions:** 12.5 x 1.5mm

**Weight:** 0.7g

---

**Micro Loudspeakers**

- **Rated Frequency Range:** 200Hz - 10kHz
- **Rated Impedance:** 8Ω
- **Max. Input Power:** 0.5W

**Order Code:** 119-1946

**Price Each:** 1+ 25+ 100+ 250+

**Dimensions:** 26 x 4mm

**Weight:** 4.5g

---

**KDMG10008C**

- **Model:** KDMG10008C-03
- **Order Code:** 129-9880
- **Price Each:** 1+ 10+ 100+

**KDMG13008L-02**

- **Order Code:** 129-9881
- **Price Each:** 1+ 10+ 50+ 100+

---

**Micro Loudspeaker**

- **Rated Frequency Range:** 20kHz - 100kHz
- **Max. Input Power:** 0.5W

**Order Code:** 119-2971

**Price Each:** 1+ 10+ 100+ 250+

**Dimensions:** 28 x 4mm

**Weight:** 2.3g

---

**KDMG10008C**

- **Model:** KDMG10008C-03
- **Order Code:** 129-9880
- **Price Each:** 1+ 10+ 100+

**KDMG13008L-02**

- **Order Code:** 129-9881
- **Price Each:** 1+ 10+ 50+ 100+

---

**Micro Loudspeakers**

- **Rated Frequency Range:** 200Hz - 20kHz
- **Rated Impedance:** 8Ω

**Order Code:** 119-1946

**Price Each:** 1+ 25+ 100+ 250+

**Dimensions:** 26 x 4mm

**Weight:** 4.5g

---

**KDMG10008C**

- **Model:** KDMG10008C-03
- **Order Code:** 129-9880
- **Price Each:** 1+ 10+ 100+

**KDMG13008L-02**

- **Order Code:** 129-9881
- **Price Each:** 1+ 10+ 50+ 100+

---

**Micro Loudspeaker**

- **Rated Frequency Range:** 20kHz - 100kHz
- **Max. Input Power:** 0.5W

**Order Code:** 119-2971

**Price Each:** 1+ 10+ 100+ 250+

**Dimensions:** 28 x 4mm

**Weight:** 2.3g
Miniature Speaker - Mylar Cone

A dynamic speaker is an electro-mechanical device that uses a paper, mylar, cloth or metal cone with an attached coil to produce a tone.

- Cone material: Mylar
- Small, low profile

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Impedance</th>
<th>Frequency Range</th>
<th>Sound Output</th>
<th>Operating Temperature</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABS-209-RC</td>
<td>8Ω</td>
<td>1000Hz</td>
<td>75dB</td>
<td>-20°C to +60°C</td>
<td>2.5g</td>
</tr>
<tr>
<td>ABS-210-RC</td>
<td>8Ω±15%</td>
<td>300Hz - 5000Hz</td>
<td>85dB</td>
<td>-20°C to +55°C</td>
<td>12g</td>
</tr>
<tr>
<td>ABS-215-RC</td>
<td>8Ω±15%</td>
<td>350Hz - 20kHz</td>
<td>80dB</td>
<td>0°C to 40°C</td>
<td>13.2g</td>
</tr>
</tbody>
</table>

Miniature Speaker 20mm Dia

A dynamic speaker is an electro-mechanical device that uses a paper, mylar, cloth or metal cone with an attached coil to produce a tone.

- Cone material: Mylar
- Small, low profile

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Impedance</th>
<th>Frequency Range</th>
<th>Sound Output</th>
<th>Operating Temperature</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABS-209-RC</td>
<td>8Ω</td>
<td>1000Hz</td>
<td>75dB</td>
<td>-20°C to +60°C</td>
<td>2.5g</td>
</tr>
<tr>
<td>ABS-210-RC</td>
<td>8Ω±15%</td>
<td>300Hz - 5000Hz</td>
<td>85dB</td>
<td>-20°C to +55°C</td>
<td>12g</td>
</tr>
<tr>
<td>ABS-215-RC</td>
<td>8Ω±15%</td>
<td>350Hz - 20kHz</td>
<td>80dB</td>
<td>0°C to 40°C</td>
<td>13.2g</td>
</tr>
</tbody>
</table>

Miniature Speaker 29mm Dia

A dynamic speaker is an electro-mechanical device that uses a paper, mylar, cloth or metal cone with an attached coil to produce a tone.

- Cone material: Mylar
- Small, low profile

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Impedance</th>
<th>Frequency Range</th>
<th>Sound Output</th>
<th>Operating Temperature</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABS-209-RC</td>
<td>8Ω</td>
<td>1000Hz</td>
<td>75dB</td>
<td>-20°C to +60°C</td>
<td>2.5g</td>
</tr>
<tr>
<td>ABS-210-RC</td>
<td>8Ω±15%</td>
<td>300Hz - 5000Hz</td>
<td>85dB</td>
<td>-20°C to +55°C</td>
<td>12g</td>
</tr>
<tr>
<td>ABS-215-RC</td>
<td>8Ω±15%</td>
<td>350Hz - 20kHz</td>
<td>80dB</td>
<td>0°C to 40°C</td>
<td>13.2g</td>
</tr>
</tbody>
</table>

Microphone - Component

**Electret Condenser Microphones**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sensitivity</th>
<th>Operating Impedance</th>
<th>Operating Voltage</th>
<th>Max Voltage</th>
<th>Max Current Consumption</th>
<th>Frequency Range</th>
<th>Signal-to-Noise-Ratio (SNR)</th>
<th>Microphone Material</th>
<th>Operating Temperature</th>
<th>Contact</th>
<th>Dimensions (Dia. x L)</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEEG1542CBL-A</td>
<td>2.42V±3dB</td>
<td>2.42Vdc</td>
<td>2Vdc</td>
<td>10Vdc</td>
<td>0.5mA (Vc = 2V)</td>
<td>100Hz - 20kHz</td>
<td>58dB</td>
<td>Brass (Plating Au)</td>
<td>-30°C to 80°C</td>
<td>0.15g</td>
<td>≤ 1.5mm x 4.5mm</td>
<td>0.11g</td>
</tr>
<tr>
<td>KEEG1542PBL-A</td>
<td>2.42V±3dB</td>
<td>2.42Vdc</td>
<td>2Vdc</td>
<td>10Vdc</td>
<td>0.5mA (Vc = 2V)</td>
<td>100Hz - 20kHz</td>
<td>58dB</td>
<td>Brass (Plating Au)</td>
<td>-30°C to 80°C</td>
<td>0.15g</td>
<td>≤ 1.5mm x 4.5mm</td>
<td>0.11g</td>
</tr>
<tr>
<td>KEEG1542TBL-A</td>
<td>2.42V±3dB</td>
<td>2.42Vdc</td>
<td>2Vdc</td>
<td>10Vdc</td>
<td>0.5mA (Vc = 2V)</td>
<td>100Hz - 20kHz</td>
<td>58dB</td>
<td>Brass (Plating Au)</td>
<td>-30°C to 80°C</td>
<td>0.15g</td>
<td>≤ 1.5mm x 4.5mm</td>
<td>0.11g</td>
</tr>
</tbody>
</table>

**CQR COMPONENTS**

Miniature Speakers with paper cones and ferrite magnets suitable for use in small portable equipment.

<table>
<thead>
<tr>
<th>Model</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>176-1629</td>
<td></td>
</tr>
<tr>
<td>Mylar</td>
<td>176-1630</td>
<td></td>
</tr>
<tr>
<td>Paper</td>
<td>176-1631</td>
<td></td>
</tr>
</tbody>
</table>

**Audio, Office and Electrical**

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Audio Visual – Components
Electret Condenser Microphones

**Omnidirectional**

<table>
<thead>
<tr>
<th>Name</th>
<th>Code</th>
<th>Sensitivity</th>
<th>Operating Impedance</th>
<th>Operating Voltage</th>
<th>Max. Current Consumption</th>
<th>Max. Voltage</th>
<th>Operating Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>KECA2742BL-B</td>
<td>22.3 mV</td>
<td>2.2 kΩ</td>
<td>2.2 kΩ</td>
<td>2.2 kΩ</td>
<td>2.2 kΩ</td>
<td>2.2 kΩ</td>
<td>2.2 kΩ</td>
</tr>
<tr>
<td>KECA2742PL-B</td>
<td>32 dB</td>
<td>100 Hz</td>
<td>100 Hz</td>
<td>100 Hz</td>
<td>100 Hz</td>
<td>100 Hz</td>
<td>100 Hz</td>
</tr>
<tr>
<td>KECA2742BL-B</td>
<td>42 dB</td>
<td>0.5 mA</td>
<td>0.5 mA</td>
<td>0.5 mA</td>
<td>0.5 mA</td>
<td>0.5 mA</td>
<td>0.5 mA</td>
</tr>
</tbody>
</table>

**Microphone Elements - PCB Mount**

**Omnidirectional**

- Omni directional response
- Screw mount design
- Super clarity, distortion-free response
- Compact design

<table>
<thead>
<tr>
<th>Name</th>
<th>Code</th>
<th>Diameter (mm)</th>
<th>Height (mm)</th>
<th>Power Supply (V)</th>
<th>External Resistor (Ω)</th>
<th>Sensitivity Tolerance (± dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOM-1545P-RI</td>
<td>100-2000</td>
<td>0.5</td>
<td>0.17</td>
<td>2</td>
<td>-45</td>
<td>±3</td>
</tr>
<tr>
<td>ROM-2338P-RI</td>
<td>100-2000</td>
<td>0.5</td>
<td>0.17</td>
<td>2</td>
<td>-45</td>
<td>±3</td>
</tr>
<tr>
<td>ROM-2438P-RI</td>
<td>100-2000</td>
<td>0.5</td>
<td>0.17</td>
<td>2</td>
<td>-45</td>
<td>±3</td>
</tr>
<tr>
<td>ROM-2538P-RI</td>
<td>100-2000</td>
<td>0.5</td>
<td>0.17</td>
<td>2</td>
<td>-45</td>
<td>±3</td>
</tr>
<tr>
<td>ROM-2638P-RI</td>
<td>100-2000</td>
<td>0.5</td>
<td>0.17</td>
<td>2</td>
<td>-45</td>
<td>±3</td>
</tr>
<tr>
<td>ROM-2738P-RI</td>
<td>100-2000</td>
<td>0.5</td>
<td>0.17</td>
<td>2</td>
<td>-45</td>
<td>±3</td>
</tr>
<tr>
<td>ROM-2838P-RI</td>
<td>100-2000</td>
<td>0.5</td>
<td>0.17</td>
<td>2</td>
<td>-45</td>
<td>±3</td>
</tr>
<tr>
<td>ROM-2938P-RI</td>
<td>100-2000</td>
<td>0.5</td>
<td>0.17</td>
<td>2</td>
<td>-45</td>
<td>±3</td>
</tr>
</tbody>
</table>

**Uni-Directional Electret Condenser Microphones**

- Highly efficient electrical specifications
- Industry standard sizes
- Omni-directional
- Solder pad / PCB pin termination
- Integrated capacitors for RF filtering
- Standard Operating Voltage: 2V
- Maximum Operating Voltage: 10V
- Output impedance (F = 1kHz) = 2.2KΩ
- Applications - Corded and cordless phones, PDAs, notebooks, mobile phones, headsets

<table>
<thead>
<tr>
<th>Name</th>
<th>Code</th>
<th>Size (mm)</th>
<th>Power Supply (V)</th>
<th>External Resistor (Ω)</th>
<th>Sensitivity Tolerance (± dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>173-6558</td>
<td>6</td>
<td>2.2</td>
<td>-45</td>
<td>±3</td>
<td></td>
</tr>
<tr>
<td>173-6559</td>
<td>6</td>
<td>2.2</td>
<td>-45</td>
<td>±3</td>
<td></td>
</tr>
<tr>
<td>173-6560</td>
<td>6</td>
<td>2.2</td>
<td>-45</td>
<td>±3</td>
<td></td>
</tr>
<tr>
<td>173-6561</td>
<td>6</td>
<td>2.2</td>
<td>-45</td>
<td>±3</td>
<td></td>
</tr>
<tr>
<td>173-6562</td>
<td>6</td>
<td>2.2</td>
<td>-45</td>
<td>±3</td>
<td></td>
</tr>
<tr>
<td>173-6563</td>
<td>6</td>
<td>2.2</td>
<td>-45</td>
<td>±3</td>
<td></td>
</tr>
</tbody>
</table>

**Noise Cancelling Electret Condenser Microphones**

- Highly efficient electrical specifications
- Industry standard sizes
- Noise Cancelling
- Integrated capacitors for RF filtering
- Solder pad termination
- Standard Operating Voltage: 2V
- Maximum Operating Voltage: 10V
- Output impedance (F = 1kHz) = 2.2KΩ
- Applications - Corded and cordless phones, PDAs, notebooks, mobile phones, headsets
**Microphone - Component - continued**

### Noise Cancelling Electret Condenser Microphones - continued

<table>
<thead>
<tr>
<th>Connector Type</th>
<th>Size (mm)</th>
<th>Sensitivity (dB)</th>
<th>Frequency (kHz)</th>
<th>Impedance</th>
<th>Supply Voltage</th>
<th>Consumption</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCB Pins</td>
<td>4</td>
<td>1.5</td>
<td>500</td>
<td>1000</td>
<td>0.5mA</td>
<td>206-6509</td>
<td></td>
</tr>
<tr>
<td>Leads</td>
<td>4</td>
<td>1.5</td>
<td>-44</td>
<td>500</td>
<td>0.5mA</td>
<td>206-6501</td>
<td></td>
</tr>
<tr>
<td>PCB Pins</td>
<td>6</td>
<td>2.2</td>
<td>500</td>
<td>1000</td>
<td>0.5mA</td>
<td>206-6499</td>
<td></td>
</tr>
<tr>
<td>Solder Pads</td>
<td>6</td>
<td>2.2</td>
<td>-40</td>
<td>500</td>
<td>0.5mA</td>
<td>173-6568</td>
<td></td>
</tr>
<tr>
<td>Solder Pads</td>
<td>9.7</td>
<td>5</td>
<td>-40</td>
<td>500</td>
<td>0.5mA</td>
<td>173-6569</td>
<td></td>
</tr>
</tbody>
</table>

**Mini Noise Cancelling Microphones**

- NR Series

  - Integral FET amplifier
  - Diaphragm responds to pressure differentially giving high rejection of background noise
  - Small size
  - Withstands severe environmental conditions
  - Low vibration sensitivity
  - High electroacoustical sensitivity

<table>
<thead>
<tr>
<th>Mfrs.</th>
<th>List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NR23159</td>
<td>93-9079#</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EK23349</td>
<td>450573.473351</td>
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</tr>
</tbody>
</table>

**Waterproof Microphones**

- WP Series

  - Omnidirectional noise cancelling
  - Waterproof to submersion in 1m water
  - Close-taking (noise-cancelling)
  - Corrosion resistant
  - Withstands explosive decomposition
  - Excellent environmental performance
  - High resistance to mechanical shock
  - Leads attached

<table>
<thead>
<tr>
<th>Mfrs.</th>
<th>List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WP23501</td>
<td>130-0704#</td>
<td></td>
</tr>
</tbody>
</table>

**High Performance Mini Microphones**

- FG Series

  - Tiny 2.59 x 2.59mm form factor
  - Rugged construction to withstand severe environmental conditions
  - High resistance to mechanical shock
  - Cylindrical shape and compact size provide for superior fit rates
  - Exceptionally low vibration sensitivity
  - Integral RFI suppression

<table>
<thead>
<tr>
<th>Mfrs.</th>
<th>List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FG-23329-C05</td>
<td>130-0701#</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FG23329-P07</td>
<td>130-0702#</td>
<td></td>
</tr>
</tbody>
</table>

**Dynamic Microphone Cartridge**

- A dynamic, omnidirectional microphone cartridge with protected diaphragm, providing good voice reproduction.

<table>
<thead>
<tr>
<th>Mfrs.</th>
<th>List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FG-23329-C05</td>
<td>130-0701#</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FG23329-P07</td>
<td>130-0702#</td>
<td></td>
</tr>
</tbody>
</table>

**Electret Microphone Cartridge**

- A miniature microphone cartridge with a wide frequency response, an omnidirectional, electret design and superior characteristics. Termination is via 2x PCB pins, 2.5mm pitch.

<table>
<thead>
<tr>
<th>Mfrs.</th>
<th>List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FG-23329-C05</td>
<td>130-0701#</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FG23329-P07</td>
<td>130-0702#</td>
<td></td>
</tr>
</tbody>
</table>