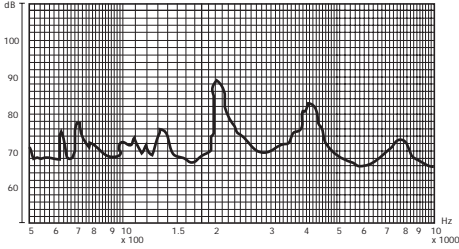


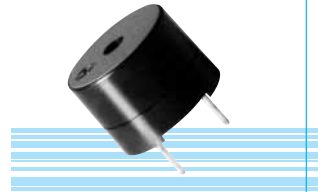
KS111 series Magnetic Transducer

DIMENSIONS

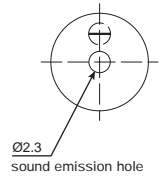
FREQUENCY RESPONSE



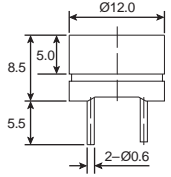
applied voltage : 1.5 V. 1/2 duty, square wave
distance for measurement :10cm



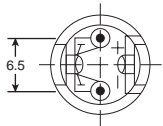
color Black
ABS or Noryl SEI Housing Material
Pin or Leadwire Terminal
Tube Packing is available on request



Top View



Side View



Bottom View

all dimensions are in mm

ELECTRICAL SPECIFICATIONS

Model No.	KS111G	KS111	KS111A	KS111GC	KS111GF	KS111AF	KS111D	KS111E
Operating Voltage (V)	1 - 2	1 - 2	1 - 2	1 - 4	1 - 5	1 - 5	1 - 5	1 - 2
Rated Voltage (V)	1.5	1.5	1.5	3.6	1.5	1.5	1.5	1.5
▲ Max. Rated Current (mA)	30	15	10	60	30	15	10	15
Coil Resistance (Ω)	16±4.5	42±5	50±7.5	16±4.5	16±4.5	42±5	50±7.5	42±5
*Coil Impedance (Ω)	40	80	140	40	40	80	140	80
▲ Min Sound Output (dBA/10cm)	85	80	80	85	85	80	80	80
Resonant Frequency (Hz)	2048	2048	2048	2048	2048	2048	2048	4096
Operating Temperature (°C)	-20 ~ +60	-20 ~ +60	-20 ~ +60	-20 ~ +60	-20 ~ +60	-20 ~ +60	-20 ~ +60	-20 ~ +60
Weight (gm.)	2	2	2	2	2	2	2	2

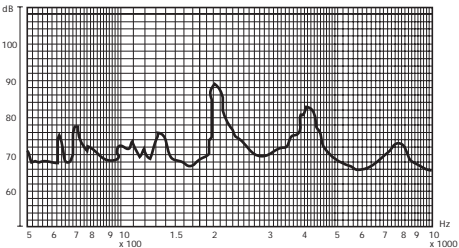
▲ Value applying rated voltage (2048Hz, 1/2 duty, square wave)
* Value applying (2048Hz, sine wave, measuring current 60μA)

03

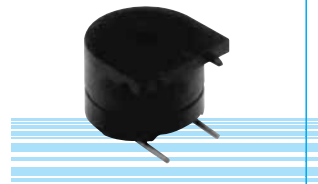
KS112 series Magnetic Transducer

DIMENSIONS

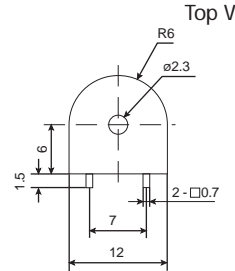
FREQUENCY RESPONSE



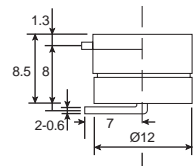
applied voltage : 1.5 V. 1/2 duty, square wave
distance for measurement :10cm



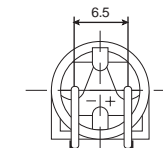
color Black
Noryl SEI Housing Material
Pin Terminal



Top View



Side View



Bottom View

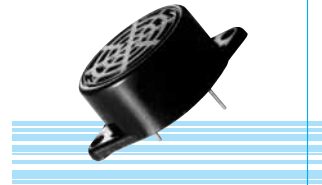
all dimensions are in mm

ELECTRICAL SPECIFICATIONS

Model No.	KS112G
Operating Voltage (V)	1 - 2
Rated Voltage (V)	1.5
▲ Max. Rated Current (mA)	30
Coil Resistance (Ω)	16±4.5
*Coil Impedance (Ω)	40
▲ Min Sound Output (dBA/10cm)	85
Resonant Frequency (Hz)	2,048
Operating Temperature (°C)	-20 ~ +60
Weight (gm.)	2

▲ Value applying rated voltage (2048Hz, 1/2 duty, square wave)
* Value applying (2048Hz, sine wave, measuring current 60μA)

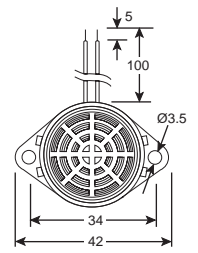
KS •E18 series Magnetic Buzzer



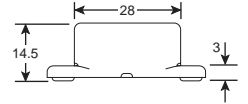
color Black
ABS Housing Material
Pin or Leadwire Terminal

DIMENSIONS

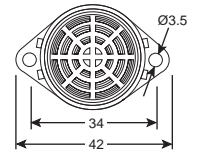
Leadwire Type Top View



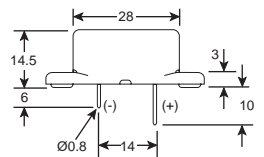
Side View



Pin Type Top View



Side View



all dimensions are in mm

ELECTRICAL SPECIFICATIONS

Model No.	1S3060	1S3090	1S3120	1S3240	1S3415
Operating Voltage (VDC)	4 ~ 9	6 ~ 11	9 ~ 15	15 ~ 28	4 ~ 15
Rated Voltage (VDC)	6	9	12	24	12
* Max. Rated Current (mA.)	35	40	40	20	15
* Min. Sound Output (dBA/30cm)	85	85	90	90	85
* Frequency (Hz.)	2800 ± 200				
Tone Nature	Single				
Operating Temperature (°C)	-20 ~ +60				
Weight (gm.)	17				

* Value applying at rated voltage

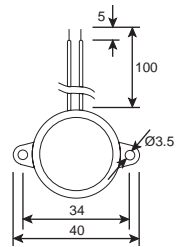
KS •E28 series Magnetic Buzzer



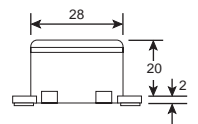
color Black
ABS Housing Material
Pin or Leadwire Terminal

DIMENSIONS

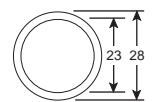
Leadwire Type Top View



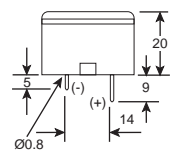
Side View



Pin Type Top View



Side View



all dimensions are in mm

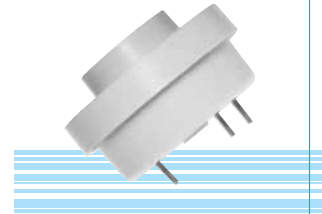
ELECTRICAL SPECIFICATIONS

Model No.	2P3015	2S3030	2P3030	2S3060	2P3060	2D3060	2S3090	2P3090	2D3090	2S3120	2S3415	2P312	2D3120	2S3240	2P3240
Operating Voltage (VDC)	1 - 3	2 - 5	2 - 5	4 - 9	4 - 9	4 - 9	6 - 11	6 - 11	6 - 11	9 - 15	4 - 15	8 - 15	8 - 15	15 - 28	15 - 28
Rated Voltage (VDC)	1.5	3	3	6	6	6	9	9	9	12	12	12	12	24	24
* Max. Rated Current (mA.)	5	35	8	35	10	35/10	40	10	35/15	40	15	15	40/15	25	20
* Min. Sound Output (dBA/30cm)	70	85	73	90	78	85/70	90	80	85/75	95	90	85	90/80	95	85
* Frequency (Hz.)	2800 ± 200														
Tone Nature	pulse	single	pulse	single	pulse	single /pulse	single	pulse	single /pulse	single	single	pulse	single /pulse	single	pulse
Operating Temperature (°C)	-20 ~ +60														
Weight (gm.)	10														

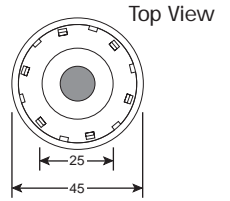
* Value applying at rated voltage
The Pulse Rating is 2-7Hz at Rated Voltage.

KS•E38 series Piezo Buzzer

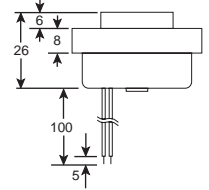
DIMENSIONS



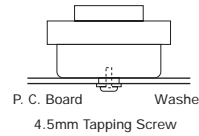
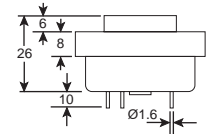
color White
Flame Retardant ABS Housing Material
Pin or Leadwire Terminal



Leadwire Type Side View

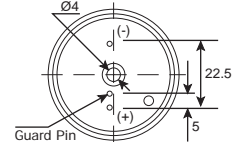


Pin Type Side View



suggested method of mounting

Bottom View



all dimensions are in mm

ELECTRICAL SPECIFICATIONS

Model No.	3S3120	3S3240	3P3120	3D3120
Operating Voltage (VDC)	1 ~ 13	3 ~ 28	1 ~ 13	1 ~ 13
Rated Voltage (VDC)	12	24	12	12
* Max. Rated Current (mA.)	35	20	20	35/20
* Min Sound Output (dBA/30cm)	105	100	100	105/100
* Frequency (Hz.)	2900±500	2900±500	2900±500	2900±500
Tone Nature	single	single	pulse	dual
Operating Temperature (°C)	-20 ~ +60	-20 ~ +60	-20 ~ +60	-20 ~ +60
Weight (gm.)	28	28	28	28

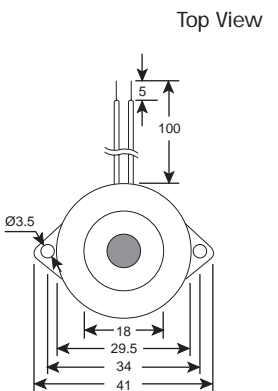
* Value applying at rated voltage
The Pulse Rate at rated voltage is 2 ~ 7Hz.

KS•E78 series Piezo Buzzer

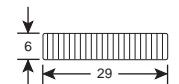
DIMENSIONS



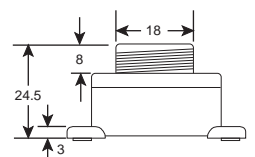
color Black
ABS Housing Material
Leadwire Terminal



Nut



Side View



all dimensions are in mm

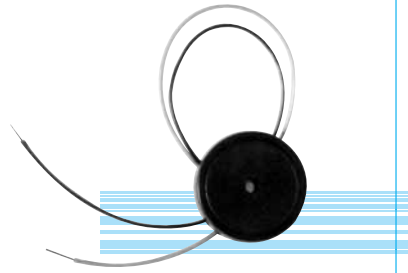
ELECTRICAL SPECIFICATIONS

Model No.	7S4120	7S4240	7P3120	7D3120
Operating Voltage (VDC)	1.5 ~ 16	1.5 ~ 28	3 ~ 15	3 ~ 15
Rated Voltage (VDC)	12	24	12	12
* Max. Rated Current (mA.)	15	20	10	20
* Min Sound Output (dBA/30cm)	95	95	90	95/90
* Frequency (Hz.)	3500±500		3200±500	
Tone Nature	single	single	pulse	dual
Operating Temperature (°C)	-20 ~ +60	-20 ~ +60	-20 ~ +60	-20 ~ +60
Weight (gm.)	15	15	15	15

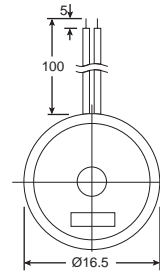
* Value applying at rated voltage
The Pulse Rate at rated voltage is 2 ~ 7Hz.

KS•E228 series External Drive Piezo Transducer

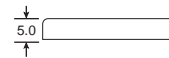
DIMENSIONS



color Black
ABS Housing Material
Leadwire Terminal



Top View



Side View

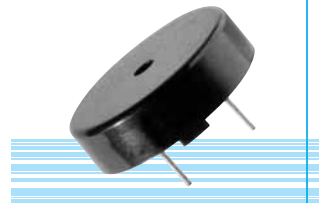
ELECTRICAL SPECIFICATIONS

Model No.	22PZ17400
Sound Pressure Level	80 dBA min. (9V p-p square wave, 10cm, 4000Hz)
Capacitance	9500 pF ± 30% at 120Hz
Max. Input Voltage	25V p-p
Operating Temperature	-20 ~ +60°C
Weight	1 g

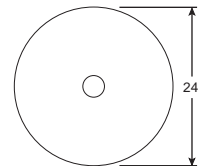
all dimensions are in mm

KS•E338 series External Drive Piezo Transducer

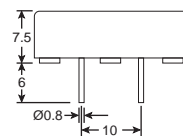
DIMENSIONS



color Black
ABS Housing Material
Pin Terminal



Top View



Side View

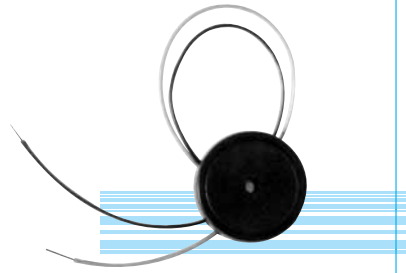
ELECTRICAL SPECIFICATIONS

Model No.	33PZ24400
Sound Pressure Level	85 dBA min. (9V p-p square wave, 10cm, 4000Hz)
Capacitance	17000 pF ± 30% at 120Hz
Max. Input Voltage	60V p-p
Operating Temperature	-20 ~ +60°C
Weight	3 g

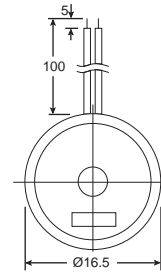
all dimensions are in mm

KS•E228 series External Drive Piezo Transducer

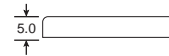
DIMENSIONS



color Black
ABS Housing Material
Leadwire Terminal



Top View



Side View

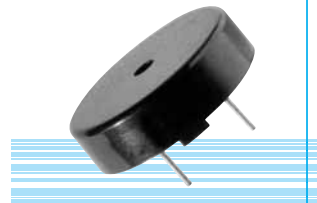
ELECTRICAL SPECIFICATIONS

Model No.	22PZ17400
Sound Pressure Level	80 dBA min. (9V p-p square wave, 10cm, 4000Hz)
Capacitance	9500 pF ± 30% at 120Hz
Max. Input Voltage	25V p-p
Operating Temperature	-20 ~ +60°C
Weight	1 g

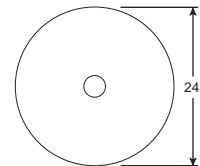
all dimensions are in mm

KS•E338 series External Drive Piezo Transducer

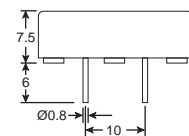
DIMENSIONS



color Black
ABS Housing Material
Pin Terminal



Top View



Side View

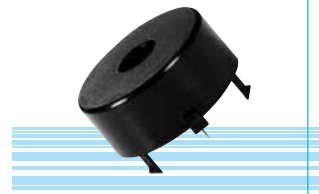
ELECTRICAL SPECIFICATIONS

Model No.	33PZ24400
Sound Pressure Level	85 dBA min. (9V p-p square wave, 10cm, 4000Hz)
Capacitance	17000 pF ± 30% at 120Hz
Max. Input Voltage	60V p-p
Operating Temperature	-20 ~ +60°C
Weight	3 g

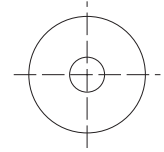
all dimensions are in mm

KS•E168 series Self Drive Piezo Transducer

DIMENSIONS

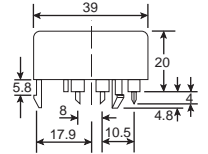


color Black
Noryl SEI Housing Material
Pin Terminal

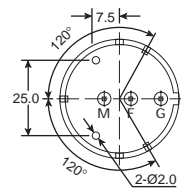


Top View

Side View



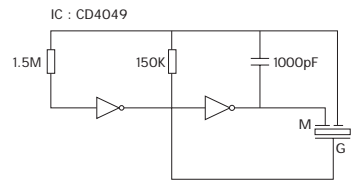
Bottom View



all dimensions are in mm

ELECTRICAL SPECIFICATIONS

Model No.	16PZ3200
Operating Voltage (VDC)	4.5 - 15
Rated Voltage (VDC)	9
Max. Rated Current (mA.)	15
Min Sound Output (dBA/30cm)	95
Frequency (Hz.)	3400±500
Operating Temperature (°C)	-20 ~ +70
Weight (gm.)	11



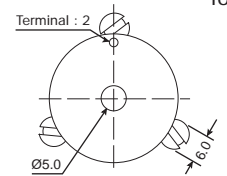
Reference Circuit

KS•E358 series Self Drive Piezo Transducer

DIMENSIONS

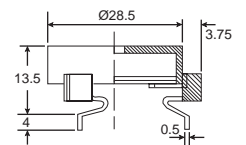


color Grey
PBT Housing Material
Pin Terminal

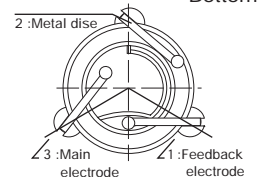


Top View

Side View



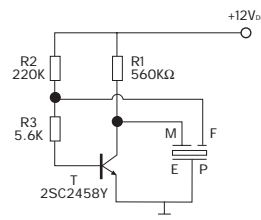
Bottom View



all dimensions are in mm

ELECTRICAL SPECIFICATIONS

Model No.	35PZ28300
Operating Voltage (VDC)	3 - 24
Rated Voltage (VDC)	12
Min Sound Output (dBA/100cm)	75
Frequency (Hz.)	3000±500
Operating Temperature (°C)	-20 ~ +70
Weight (gm.)	3

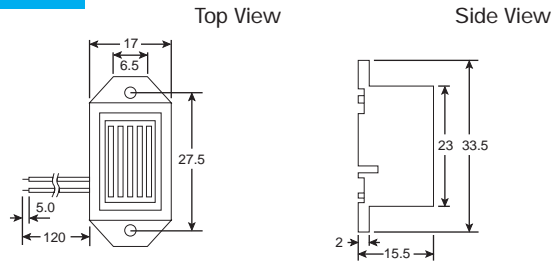


Reference Circuit

KS•E208 series Mechanical Buzzer

DIMENSIONS

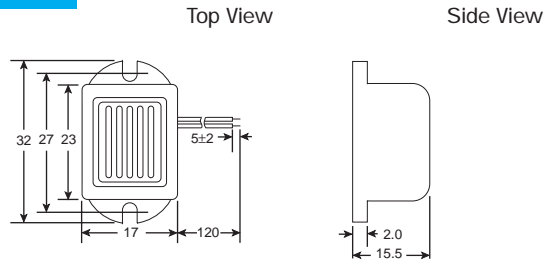
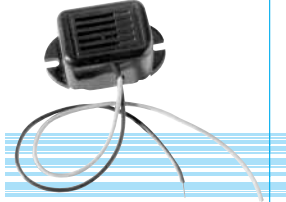
color Black
ABS Housing Material
Leadwire Terminal



KS•E638 series Mechanical Buzzer

DIMENSIONS

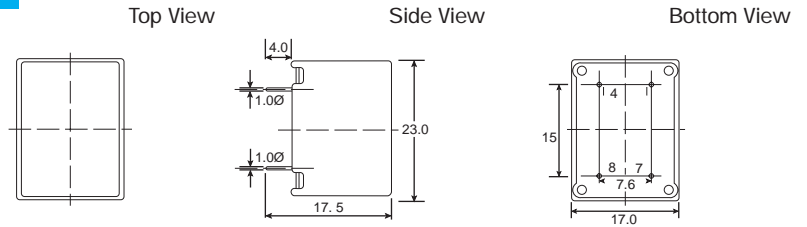
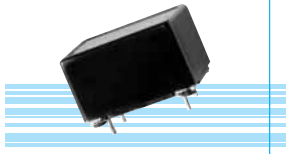
color Black
ABS Housing Material
Leadwire Terminal



KS•E668 series Mechanical Buzzer

DIMENSIONS

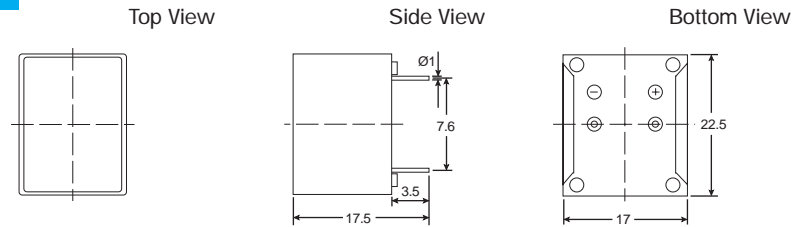
color Black
ABS Housing Material
Pin Terminal



DB•E688 series Mechanical Buzzer

DIMENSIONS

color Black
ABS Housing Material
Pin Terminal



all dimensions are in mm

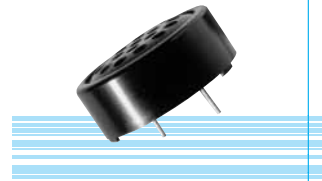
ELECTRICAL SPECIFICATIONS

Model No.	20S1015	20S1030	20S1060	20S1090	20S1120	20S1240
	63S1015	63S1030	63S1060	63S1090	63S1120	63S1240
	66S1015	66S1030	66S1060	66S1090	66S1120	66S1240
	68S1015	68S1030	68S1060	68S1090	68S1120	68S1240
Operating Voltage (VDC)	1 - 3	2 - 4	4 - 8	6 - 12	9 - 15	15 - 27
Rated Voltage (VDC)	1.5	3	6	9	12	24
* Max. Rated Current (mA.)	20	25	25	25	25	30
* Min Sound Output (dBA/20cm)	70	70	75	75	75	75
* Fundamental Frequency (Hz.)	400±100	400±100	400±100	400±100	400±100	400±100
Tone Nature	single	single	single	single	single	single
Operating Temperature (°C)	-10 ~ +60	-10 ~ +60	-10 ~ +60	-10 ~ +60	-10 ~ +60	-10 ~ +60
Weight (gm.)	10	10	10	10	10	10

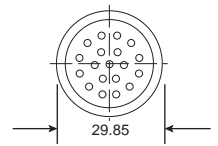
* Value applying at rated voltage

KS•E368 series Mylar Speaker

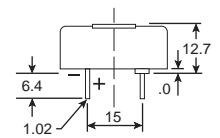
DIMENSIONS



color Black
Noryl SEI Housing Material
Pin Terminal



Top View



Side View

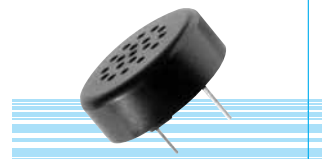
ELECTRICAL SPECIFICATIONS

Model No.	36MS30008	36MS30100
Power (Nominal) (w)	0.15	0.15
Power (Max.) (w)	0.2	0.2
Frequency (Hz.)	700 ~ 5000	700 ~ 5000
Resonant Frequency (Hz.)	1200 ± 15%	1200 ± 15%
Impedance (Ohm)	8	100
Operating Temperature (°C)	-20 ~ +60	-20 ~ +60

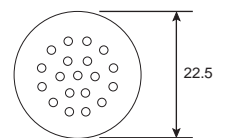
all dimensions are in mm

KS•E378 series Mylar Speaker

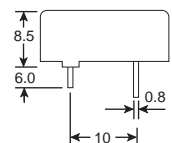
DIMENSIONS



color Black
Noryl SEI Housing Material
Pin Terminal



Top View



Side View

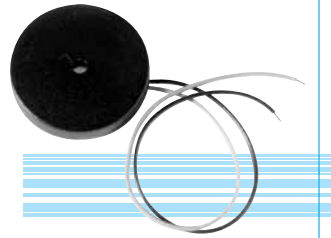
ELECTRICAL SPECIFICATIONS

Model No.	37MS23008
Power (Nominal) (w)	0.08
Power (Max.) (w)	0.15
Frequency (Hz.)	500 ~ 4000
Resonant Frequency (Hz.)	1500 ± 200
Impedance (Ohm)	8
Operating Temperature (°C)	-20 ~ +60

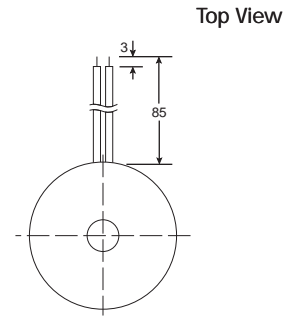
all dimensions are in mm

KS•E778 series Piezo Receiver

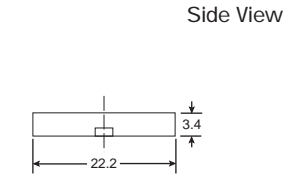
DIMENSIONS



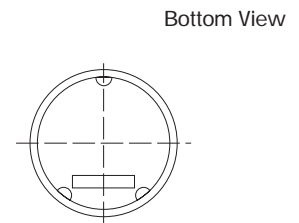
color Black
ABS Housing Material
Leadwire Terminal



Top View



Side View



Bottom View

all dimensions are in mm

ELECTRICAL SPECIFICATIONS

Model No.	77PR23100
Sound Pressure Level	110 ± 3.5 dB (1 KHz, 1 V rms, IEC - 318 coupler)
Impedance	1200 max. Ω
Capacitance	90 nF ± 30% at 1.0KHz
Operating Temperature	-20 ~ +70°C
Weight	1.3 g

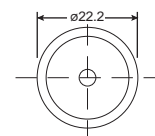
71

KS•E808 series Piezo Receiver

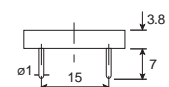
DIMENSIONS



color Black
ABS Housing Material
Pin Terminal



Top View



Side View

all dimensions are in mm

ELECTRICAL SPECIFICATIONS

Model No.	80PR22100
Sound Pressure Level IEC-318 Coupler	110 ± 3.5 dB at 1.0 kHz / 1.0V rms
Capacitance at 1KHZ	45 nF ± 30%
Max. Input Voltage	10V rms
Max. Resistance (1.0kHz)	3.0k Ohm
Operating Temperature	-20 ~ +60°C
Weight	1.6g