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Piezoelectric Sound Components

Piezoelectric Speakers (CERAMITONE®)

Piezoelectric Diaphragms

Piezoelectric Buzzers

Piezoelectric Sounders

Piezoelectric Ringers (PIEZORINGER®)

- **Part Numbering** (The structure of the "Global Part Numbers" that will be adopted from June 2001 and the meaning of each code are described herein.)
If you have any questions about details, inquire at your usual Murata sales office or distributor.

Piezoelectric Speakers (CERAMITONE®)

(Global Part Number)

VS	B	35	E	W	-07	01	B
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① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Product ID

Product ID	
VS	Piezoelectric Speakers

② Product

Code	Product
B	Piezoelectric Diaphragms

③ Outer Dimensions

Code	Outer Dimensions
35	ø35mm
50	ø50mm

④ Drive

Code	Drive
E	External Drive

⑤ Outer Electrode Style

Code	Outer Electrode Style
W	Lead Type

⑥ Resonant Frequency Type

Code	Resonant Frequency
-03	1st Resonant Frequency : 300Hz
-07	1st Resonant Frequency : 700Hz

⑦ Individual Specification Code

Code	Individual Specification Code
01	Characteristics, Style, others

⑧ Numbers of Ceramic

Code	Numbers of Ceramic
B	Two Elements (The code is omitted when element is one.)

Piezoelectric Diaphragms

(Global Part Number)

7	N	B	-31R2	DM	-1R5		A	10
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① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Product ID(1)

Product ID(1)	Ceramic Material
7	A2

② Product(2)

Product ID(2)	Metal Plate Material
B	Brass
N	Nickel Alloy
M	Ni Plated Iron
S	SUS

③ Product

Code	Product
B	Piezoelectric Diaphragms

④ Metal Plate Diameter

Code	Metal Plate Diameter
-31R2	A hyphen (-) plus four-digit alphanumerics express metal plate outer dimensions. A decimal point is expressed by the capital letter "R".

If there is no decimal point, the decimal point code is omitted.

⑤ Form of Piezoelectric Style

Code	Form of Piezoelectric Style
DM	Two digits express shape of ceramics.

For an Ag electrode, this digit remains blank, the corresponding code is omitted.

⑥ Resonant Frequency Type

Code	Resonant Frequency (kHz)
-1R5	A hyphen (-) and three-digit alphanumerics express resonant frequency. A decimal point is expressed by the capital letter "R".

If there is no decimal point, the decimal point is omitted.

⑦ With Feedback Electrode

Code	With Feedback Electrode
C	With Feedback Electrode
-	without Feedback Electrode

⑧ Product Specification

Code	Product Specification
A	With lead
-	No lead (omitted)

⑨ Individual Specification Code

Code	Individual Specification Code
10	These digits express a lead length, lead number, and presence/absence of a connector.

If the product has no individual specification, the corresponding code is omitted.

Piezoelectric Sounders/Piezoelectric Buzzers/Piezoelectric Ringers(PIEZORINGER®)

(Global Part Number) **PK M 13 E P Y -40 00 P -A0**
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

① Product ID

Product ID	
PK	Piezoelectric Sound Components

② Product

Code	Product
M	Sounder, Ringer
B	Buzzer

③ Outer Dimensions

Expressed by two figures in mm.

Ex.)

Code	Outer Dimensions
13	ø12.6mm

④ Drive

Code	Drive
E	External-Drive
S	Self-Drive

⑤ Outer Electrode Style

Code	Outer Electrode Style
P	Pin Type
W	Lead Type

⑥ Structure

Code	Structure
T	Standing Type
P	Flat Type Auto-assemble
Y	Flat Type/Available for Taping
C	Flat Type/Semi-auto-assemble

⑦ Oscillating Frequency Type

Code	Oscillating Frequency Type
-40	A hyphen (-) plus two-digit figures express Oscillating Frequency type.

If there is no decimal point, the decimal point is omitted.

⑧ Individual Specification Code

Code	Individual Specification Code
00	Two digits express specific specification in characteristics.

⑨ Special Quality Guarantee

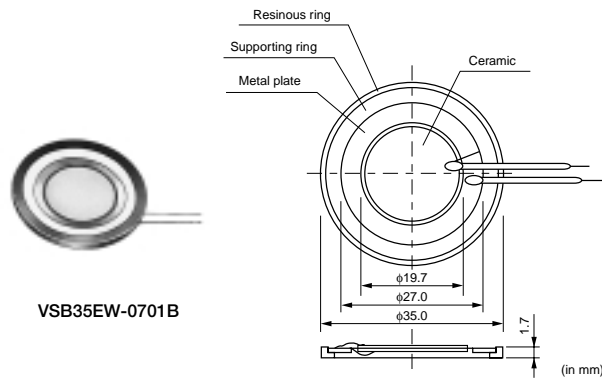
Code	Special Quality Guarantee
P	Post Plated Terminal
-	Omitted

⑩ Packaging

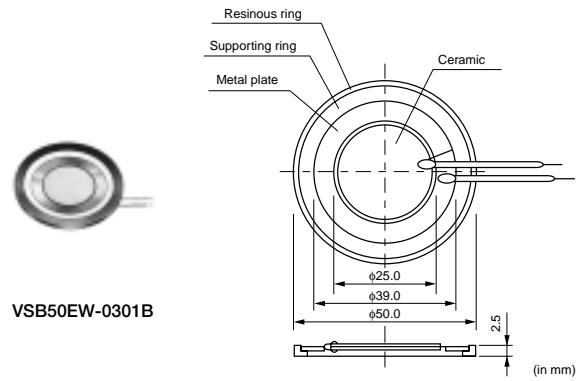
Code	Packaging
-B0	Bulk
-A0	Radial Taping
-M0	Magazine

Radial taping or magazine are not available for all types. Please contact us.

Piezoelectric Speakers (CERAMITONE)



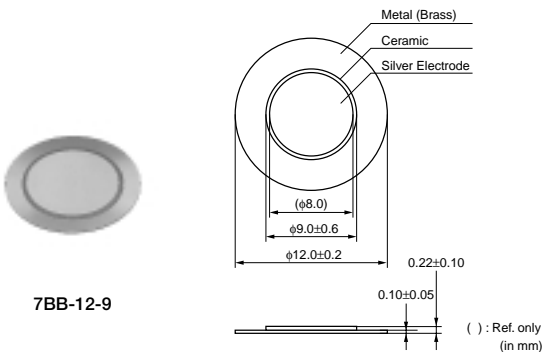
VSB35EW-0701B



VSB50EW-0301B

Part Number	Oscillating Frequency Range	Capacitance (nF)	Maximum Input (mW)	Operating Temperature Range
VSB35EW-0701B	600Hz to 20kHz	340 ±35%[120Hz]	75	-20 to +70°C
VSB50EW-0301B	250Hz to 20kHz	600 ±35%[120Hz]	150	-20 to +70°C

Piezoelectric Diaphragms



7BB-12-9

Part Number	Resonant Frequency (kHz)	Plate Size (dia)	Thickness	Plate Material	Drive Type
7BB-12-9	9.0 ±1.0kHz	12.0	0.22	Brass	External Drive
7BB-12-9A0	9.5 ±1.5kHz	12.0	0.22	Brass(with Lead)	External Drive
7BB-15-6A0	6.0 ±1.0kHz	15.0	0.22	Brass(with Lead)	External Drive
7BB-20-3CA0	3.7 ±0.6kHz	20.0	0.22	Brass(with Lead)	Self Drive
7BB-20-4	4.0 ±0.5kHz	20.0	0.27	Brass	External Drive
7BB-20-6A0	6.3 ±0.6kHz	20.0	0.42	Brass(with Lead)	External Drive
7BB-20-6C	6.3 ±0.6kHz	20.0	0.42	Brass	Self Drive
7BB-20-6CA0	6.3 ±0.6kHz	20.0	0.42	Brass(with Lead)	Self Drive
7BB-22R5-5	5.2 ±0.5kHz	22.5	0.42	Brass	External Drive
7BB-27-3A0	3.6 ±0.5kHz	27.0	0.52	Brass(with Lead)	External Drive
7BB-27-3C	3.0 ±0.5kHz	27.0	0.27	Brass	Self Drive
7BB-27-4A0	4.6 ±0.5kHz	27.0	0.54	Brass(with Lead)	External Drive
7BB-27-4C	4.6 ±0.5kHz	27.0	0.54	Brass	Self Drive
7BB-27-4CA0	4.6 ±0.5kHz	27.0	0.54	Brass(with Lead)	Self Drive
7BB-35-3A0	2.8 ±0.5kHz	35.0	0.53	Brass(with Lead)	External Drive
7BB-35-3C	2.8 ±0.5kHz	35.0	0.53	Brass	Self Drive
7BB-35-3CA0	2.8 ±0.5kHz	35.0	0.53	Brass(with Lead)	Self Drive
7BB-41-2	2.2 ±0.3kHz	41.0	0.63	Brass	External Drive

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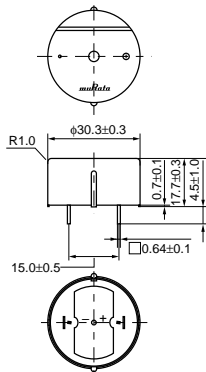
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Part Number	Resonant Frequency (kHz)	Plate Size (dia)	Thickness	Plate Material	Drive Type
7BB-41-2A0	2.2 ±0.3kHz	41.0	0.63	Brass(with Lead)	External Drive
7BB-41-2C	2.2 ±0.3kHz	41.0	0.63	Brass	Self Drive
7BB-41-2CA0	2.2 ±0.3kHz	41.0	0.63	Brass(with Lead)	Self Drive
7MB-20-5R5	5.5 ±1.5kHz	20.0	0.37	Nickel Plated Iron	External Drive
7MB-50-1	1.0 ±0.3kHz	50.0	0.44	Nickel-Plated Brass	External Drive
7NB-27-2	2.2 ±0.4kHz	27.0	0.22	Iron Nickel Alloy	External Drive
7NB-27-2C	2.2 ±0.5kHz	27.0	0.22	Iron Nickel Alloy	Self Drive
7NB-27-3C	3.0 ±0.5kHz	27.0	0.32	Iron Nickel Alloy	Self Drive
7NB-27-4C	3.8 ±0.5kHz	27.0	0.42	Iron Nickel Alloy	Self Drive
7NB-31R2-1	1.3 ±0.5kHz	31.2	0.22	Iron Nickel Alloy	External Drive
7NB-35-1A0	1.16 ±0.2kHz	35.0	0.27	Iron Nickel Alloy(with Lead)	External Drive
7NB-41-1	0.8 ±0.3kHz	41.0	0.21	Iron Nickel Alloy	External Drive
7SB-20-7	7.2 ±0.8kHz	20.0	0.42	Stainless	External Drive
7SB-20-7A1	7.2 ±0.8kHz	20.0	0.42	Stainless(with Solder dot)	External Drive
7SB-34R7-3C	3.1 ±0.3kHz	34.7	0.50	Stainless	Self Drive
7BB-15-6	6.0 ±1.0kHz	15.0	0.22	Brass	External Drive
7BB-20-3	3.6 ±0.6kHz	20.0	0.22	Brass	External Drive
7BB-20-6	6.3 ±0.6kHz	20.0	0.42	Brass	External Drive
7BB-27-4	4.6 ±0.5kHz	27.0	0.54	Brass	External Drive
7BB-35-3	2.8 ±0.5kHz	35.0	0.53	Brass	External Drive
7NB-35-1	1.16 ±0.2kHz	35.0	0.27	Iron Nickel Alloy	External Drive

Piezoelectric Buzzers



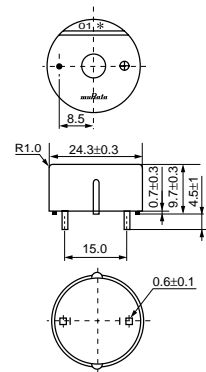
PKB30SPC-2001-B0



(in mm)



PKM24SPC-361W-B0



(in mm)

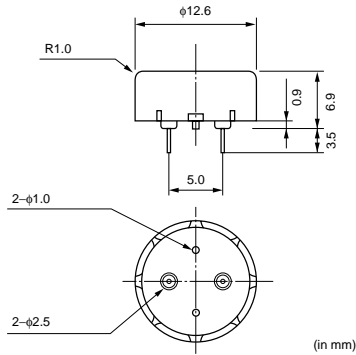
Part Number	Sound Pressure Level (dB)	Oscillating Frequency (kHz)	Current Consumption (mA)	Operating Voltage Range (Vdc)
PKB30SPC-2001-B0	92 min.[12Vdc, 10cm]	2.0 ±0.4kHz	15 max.	3.0 to 15.0
PKB30SPC-3001-B0	92 min.[12Vdc, 10cm]	2.7 ±0.4kHz	15 max.	3.0 to 15.0
PKB24SW-3301	80 min.[12Vdc, 10cm]	3.3 ±0.5kHz	12 max.	3.0 to 20.0
PKB24SPC-3601-B0	90 min.[12Vdc, 10cm]	3.6 ±0.5kHz	16 max.	3.0 to 15.0

Piezoelectric Sounders

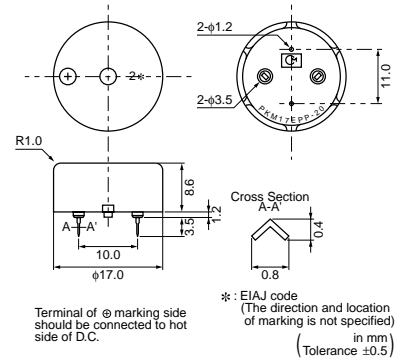
External-Drive



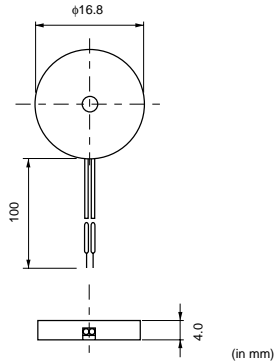
PKM13EPY-4000-A0



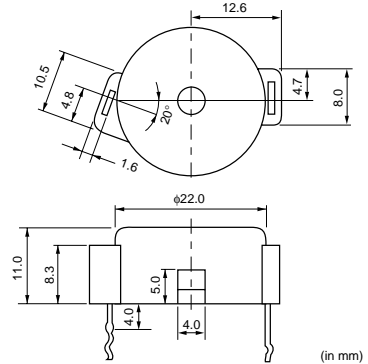
PKM17EPP-2002-B0



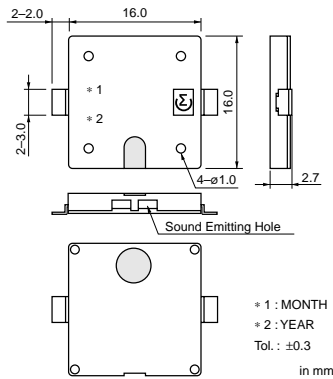
PKM17EW-4000



PKM22EP-2001



PKMC16E-4000-T0



Part Number	Sound Pressure Level (dB)	Operating Voltage Range (Vp-p)	Capacitance (nF)
PKM13EPY-4000-A0	70 min.[3Vp-p,4kHz,square wave,10cm]	25 max.	5.5 $\pm 30\%$ [1kHz]
PKM13EPY-4002-B0	70 min.[3Vp-p,4kHz,square wave,10cm]	25 max.	5.5 $\pm 30\%$ [1kHz]
PKM17EPP-2002-B0	70 min.[3Vp-p,2kHz,square wave,10cm]	25 max.[with polarity]	34 $\pm 35\%$ [120kHz]
PKM17EPP-4001-B0	72 min.[3Vp-p,4kHz,square wave,10cm]	25 max.	7 $\pm 30\%$ [1kHz]
PKM17EPP-4002-B0	72 min.[3Vp-p,4kHz,square wave,10cm]	25 max.	7 $\pm 30\%$ [1kHz]
PKM17EPT-4001-B0	75 min.[3Vp-p,4kHz,square wave,10cm]	25 max.	9.5 $\pm 30\%$ [1kHz]
PKM17EPT-4001-M0	75 min.[3Vp-p,4kHz,square wave,10cm]	25 max.	9.5 $\pm 30\%$ [1kHz]
PKM17EW-2001	72 min.[3Vp-p,2kHz,square wave,10cm]	7 max.	40 $\pm 30\%$ [120Hz]
PKM17EW-4000	75 min.[3Vp-p,4kHz,square wave,10cm]	25 max.	9.5 $\pm 30\%$ [1kHz]
PKM22EP-2001	75 min.[3Vp-p,2kHz,square wave,10cm]	25 max.	17 $\pm 30\%$ [120Hz]
PKM22EP-2002	75 min.[3Vp-p,2kHz,square wave,10cm]	25 max.	17 $\pm 30\%$ [120Hz]
PKM22EP-2003	75 min.[3Vp-p,2kHz,square wave,10cm]	25 max.	17 $\pm 30\%$ [120Hz]
PKM22EPP-2001-B0	70 min.[3Vp-p,2kHz,square wave,10cm]	25 max.	19 $\pm 30\%$ [120Hz]
PKM22EPP-2002-B0	70 min.[3Vp-p,2kHz,square wave,10cm]	25 max.	19 $\pm 30\%$ [120Hz]
PKM22EPP-4001-B0	75 min.[3Vp-p,4kHz,square wave,10cm]	25 max.	12 $\pm 30\%$ [1kHz]

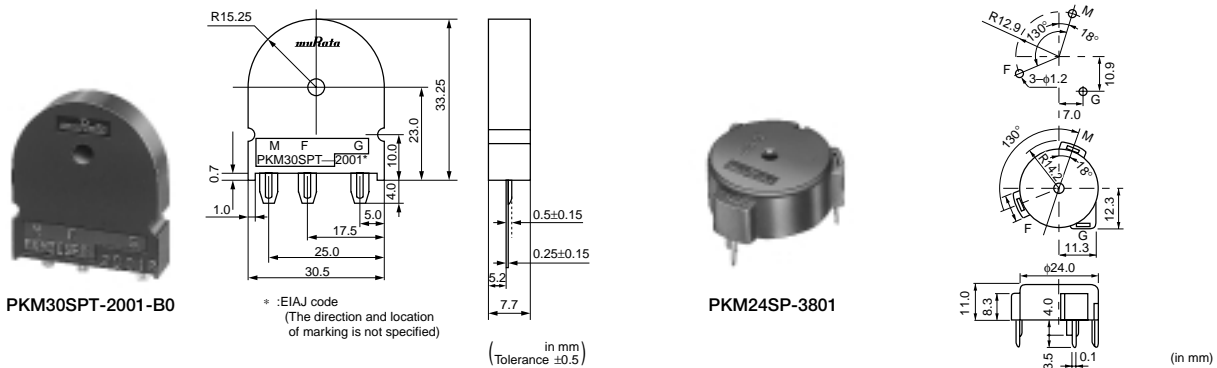
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Part Number	Sound Pressure Level (dB)	Operating Voltage Range (Vp-p)	Capacitance (nF)
PKM22EPP-4002-B0	75 min.[3Vp-p,4kHz,square wave,10cm]	25 max.	12 ±30%[1kHz]
PKM22EPP-4005-B0	75 min.[3Vp-p,4kHz,square wave,10cm]	25 max.	12 ±30%[1kHz]
PKM22EPP-4007-B0	85 min.[3Vp-p,4kHz,square wave,10cm]	25	12 ±30%[1kHz]
PKM22EPP-4012-B0	85 min.[3Vp-p,4kHz,square wave,10cm]	25 max.	12 ±30%[1kHz]
PKM22EPT-2001-B0	70 min.[3Vp-p,2kHz,square wave,10cm]	25 max.	19 ±30%[120Hz]
PKM22EPT-2001-M0	70 min.[3Vp-p,2kHz,square wave,10cm]	25 max.	19 ±30%[120Hz]
PKM22EPT-4001-B0	85 min.[3Vp-p,4kHz,square wave,10cm]	25 max.	10 ±30%[1kHz]
PKMC16E-4000-T0	75 min.[3Vp-p,4kHz,square wave,10cm]	25 max.	14 ±30%[1kHz]

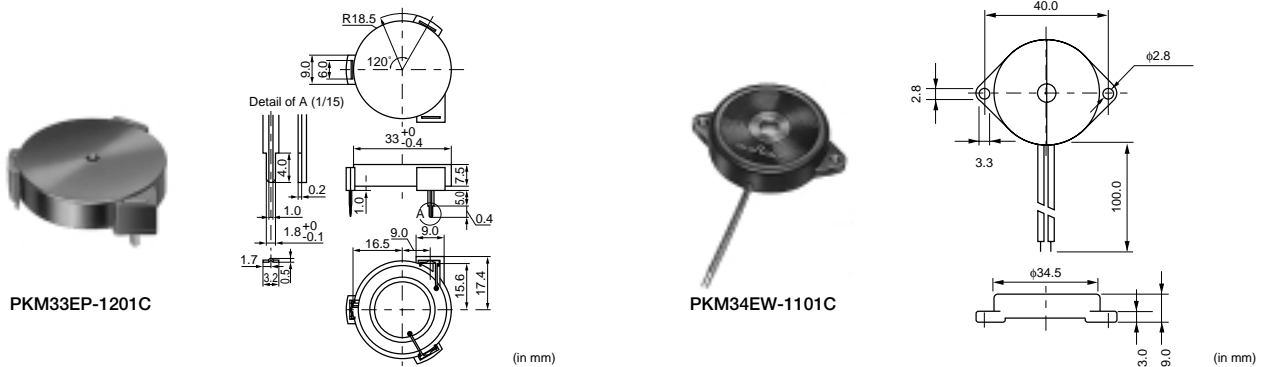
Piezoelectric Sounders

Self-Drive



Part Number	Sound Pressure Level (dB)	Oscillating Frequency (kHz)	Current Consumption (mA)	Operating Voltage Range (Vdc)
PKM30SPT-2001-B0	75 min.[12Vdc,10cm]	2.0 ±0.3kHz	20 max.	3.0 to 20.0
PKM30SPT-2501-B0	75 min.[12Vdc,10cm]	2.5 ±0.3kHz	20 max.	3.0 to 20.0
PKM24SP-3801	90 min.[12Vdc,10cm]	3.8 ±0.4kHz	12 max.	3.0 to 20.0
PKM24SP-3805	90 min.[12Vdc,10cm]	3.8 ±0.4kHz	12 max.	3.0 to 20.0
PKM24SP-3807	90 min.[12Vdc,10cm]	3.8 ±0.4kHz	12 max.	3.0 to 20.0
PKM24SP-3810	90 min.[12Vdc,10cm]	3.8 ±0.4kHz	12 max.	3.0 to 20.0

Piezoelectric Ringer (PIEZORINGER®)

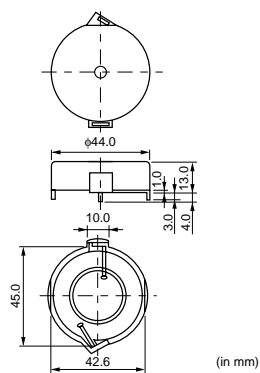


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PKM44EP-0901



Part Number	Sound Pressure Level (dB)	Operating Voltage Range (Vp-p)	Capacitance (nF)
PKM33EP-1201C	68 min.[30Vp-p,1.2kHz,square wave,1m]	40 max.	40 ±30%[120Hz]
PKM33EP-1202C	70 min.[20Vp-p,1.2kHz,square wave,50cm]	40 max.	40 ±30%[120Hz]
PKM34EW-1101C	70 min.[30Vp-p,1.1kHz,square wave,1m]	40 max.	40 ±30%[120Hz]
PKM34EW-1201C	70 min.[30Vp-p,1.2kHz,square wave,1m]	60 max.	32 ±30%[120Hz]
PKM44EP-0901	70 min.[30Vp-p,1kHz,square wave,1m]	40 max.	68 ±30%[120Hz]
PKM44EW-1001C	75 min.[30Vp-p,1kHz,square wave,1m]	30 max.	68 ±30%[120Hz]