

# Piezoelectric Sound Components



## Piezoelectric Sounders External Drive Pin Type

Now microcomputers are widely used for microwave ovens, air conditioners, cars, toys, timers, and other alarm equipment. Externally driven piezoelectric sounders are used in digital watches, electronic calculators, telephones and other equipment. They are driven by a signal (ex: 2048Hz or 4096Hz) from an LSI and provide melodious sound.

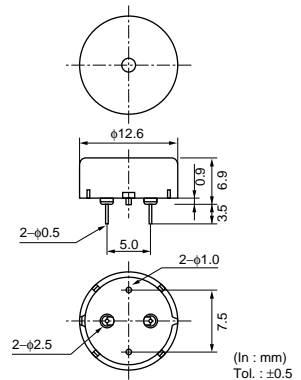
### ■ Features

1. Low power consumption
2. No contacts therefore, no noise and highly reliable

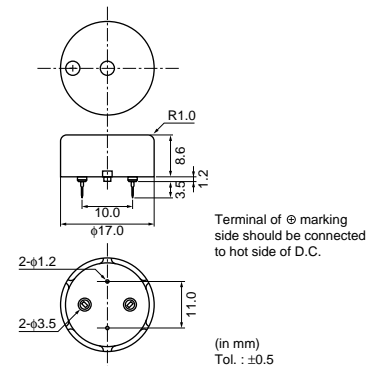
### ■ Applications

1. Telephone ringers
2. Various office equipment such as PPCs, printers and keyboards
3. Various home appliances such as microwave ovens
4. Confirmation sound of various audio equipment

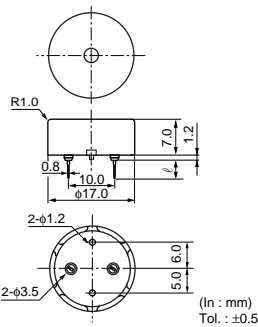
PKM13EPY-4002-B0



PKM17EPP-2002-B0

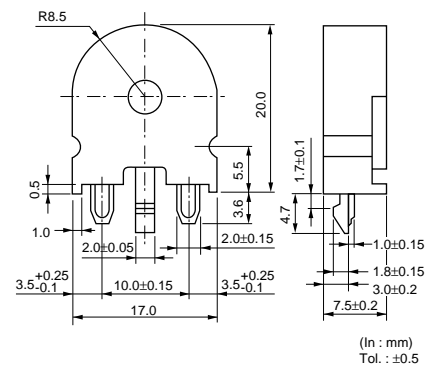


PKM17EPP-4001-B0

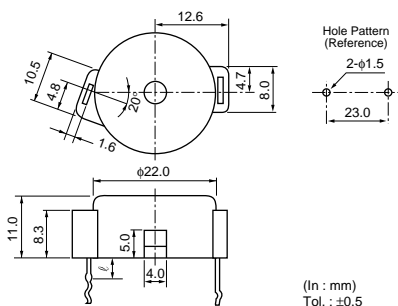


Part Number	ℓ
PKM17EPP-4001-B0	6.5
PKM17EPP-4002-B0	3.5

PKM17EPT-4001-B0

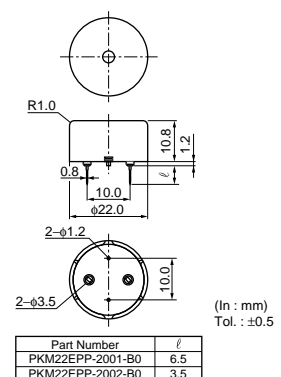


PKM22EP-2001



Part Number	ℓ
PKM22EP-2001	4.0
PKM22EP-2002	8.0
PKM22EP-2003	12.0

PKM22EPP-2001-B0



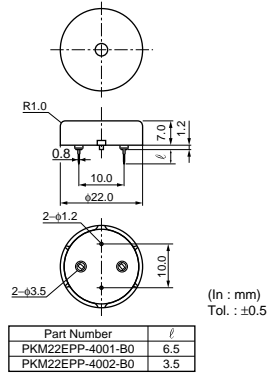
Part Number	ℓ
PKM22EPP-2001-B0	6.5
PKM22EPP-2002-B0	3.5

Continued on the following page. ↗

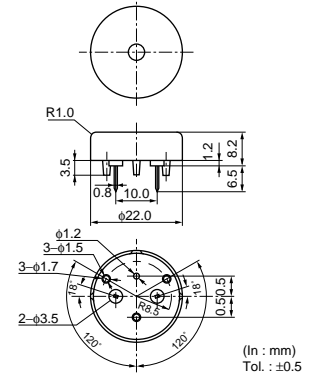
Continued from the preceding page.



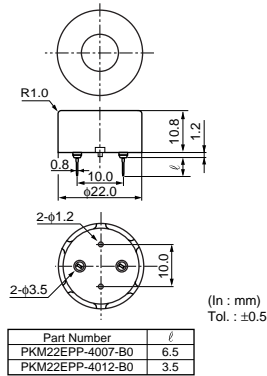
PKM22EPP-4001-B0



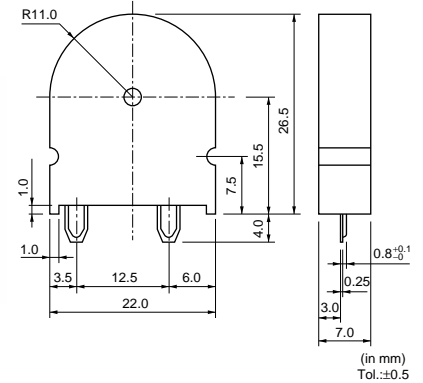
PKM22EPP-4005-B0



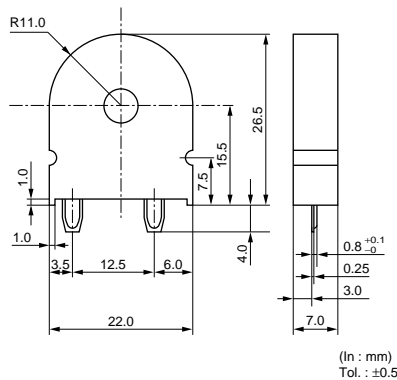
PKM22EPP-4007-B0



PKM22EPT-2001-B0



PKM22EPT-4001-B0



Part Number	Sound Pressure Level (dB)	Sound Pressure Level (Ref. only) (dB)	Min. of Operating Voltage Range	Capacitance (nF)	Operating Temp. Range	Storage Temp. Range
PKM13EPY-4002-B0	70 min. [3Vp-p, 4kHz, square wave, 10cm]	70 min. [1Vrms, 4kHz, sine wave, 10cm]	30 Vp-p max.	5.5 $\pm 30\%$ [1kHz]	-20 to +70°C	-30 to +80°C
PKM17EPP-2002-B0	70 min. [3Vo-p, 2kHz, square wave, 10cm]	70 min. [1Vrms, 2kHz, sine wave, 10cm]	25 Vo-p max. [with polarity]	34 $\pm 30\%$ [120Hz]	-20 to +70°C	-30 to +80°C
PKM17EPP-4001-B0	72 min. [3Vp-p, 4kHz, square wave, 10cm]	72 min. [1Vrms, 4kHz, sine wave, 10cm]	25 Vp-p max.	7 $\pm 30\%$ [1kHz]	-20 to +70°C	-30 to +80°C
PKM17EPT-4001-B0	75 min. [3Vp-p, 4kHz, square wave, 10cm]	75 min. [1Vrms, 4kHz, sine wave, 10cm]	25 Vp-p max.	9.5 $\pm 30\%$ [1kHz]	-20 to +70°C	-30 to +80°C
PKM22EP-2001	75 min. [3Vp-p, 2kHz, square wave, 10cm]	75 min. [1Vrms, 2kHz, sine wave, 10cm]	25 Vp-p max.	17 $\pm 30\%$ [120Hz]	-20 to +70°C	-30 to +80°C
PKM22EPP-2001-B0	70 min. [3Vp-p, 2kHz, square wave, 10cm]	70 min. [1Vrms, 2kHz, sine wave, 10cm]	25 Vp-p max.	19 $\pm 30\%$ [120Hz]	-20 to +70°C	-30 to +80°C
PKM22EPP-4001-B0	75 min. [3Vp-p, 4kHz, square wave, 10cm]	75 min. [1Vrms, 4kHz, sine wave, 10cm]	25 Vp-p max.	12 $\pm 30\%$ [1kHz]	-20 to +70°C	-30 to +80°C
PKM22EPP-4005-B0	75 min. [3Vp-p, 4kHz, square wave, 10cm]	75 min. [1Vrms, 4kHz, sine wave, 10cm]	25 Vp-p max.	12 $\pm 30\%$ [1kHz]	-20 to +70°C	-30 to +80°C
PKM22EPP-4007-B0	85 min. [3Vp-p, 4kHz, square wave, 10cm]	85 min. [1Vrms, 4kHz, sine wave, 10cm]	25 Vp-p max.	12 $\pm 30\%$ [1kHz]	-20 to +70°C	-30 to +80°C

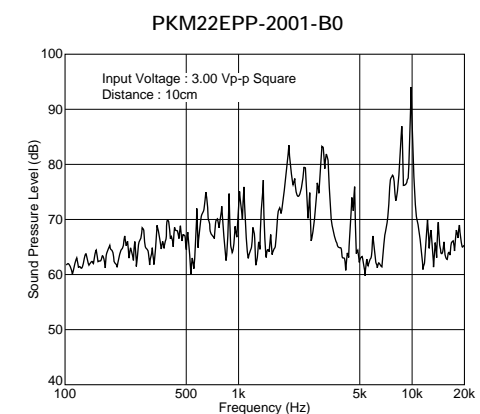
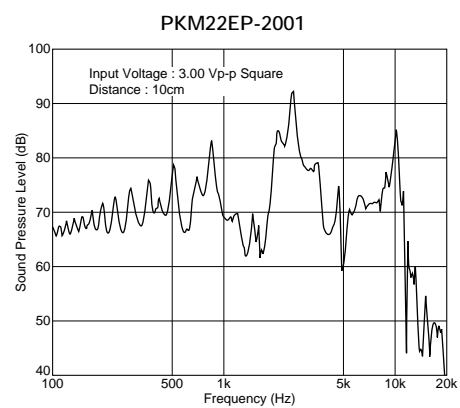
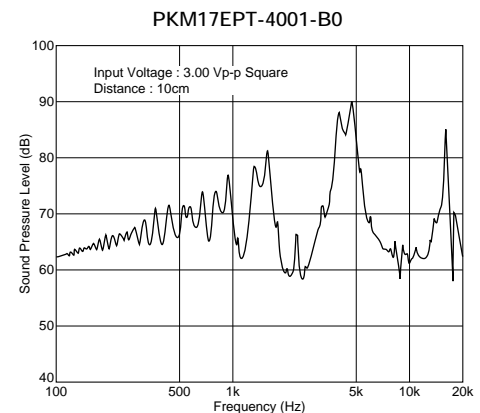
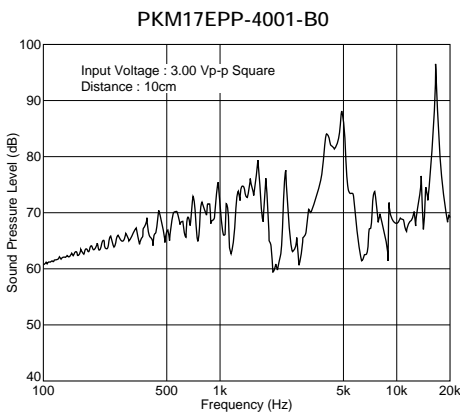
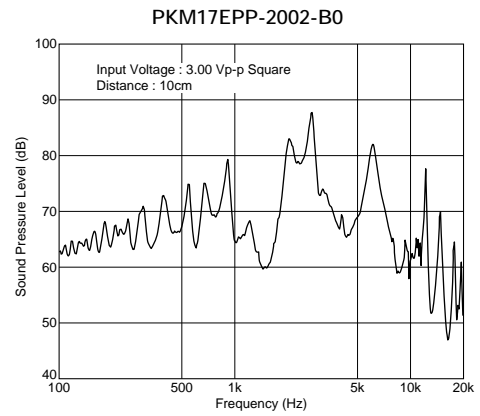
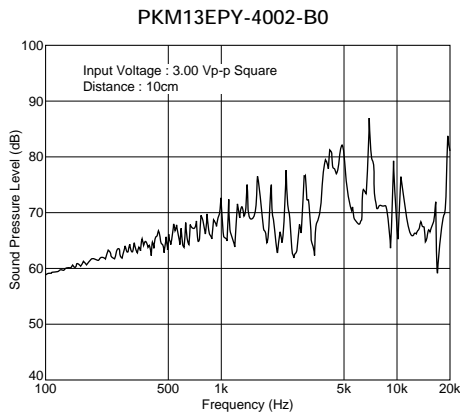
Continued on the following page. ↗

↳ Continued from the preceding page.

Part Number	Sound Pressure Level (dB)	Sound Pressure Level (Ref. only) (dB)	Min. of Operating Voltage Range	Capacitance (nF)	Operating Temp. Range	Storage Temp. Range
PKM22EPT-2001-B0	70 min. [3Vp-p,2kHz,square wave,10cm]	70 min. [1Vrms,2kHz,sine wave,10cm]	25 Vp-p max.	19 ±30% [120Hz]	-20 to +70°C	-30 to +80°C
PKM22EPT-4001-B0	85 min. [3Vp-p,4kHz,square wave,10cm]	85 min. [1Vrms,4kHz,sine wave,10cm]	25 Vp-p max.	10 ±30% [1kHz]	-20 to +70°C	-30 to +80°C

2

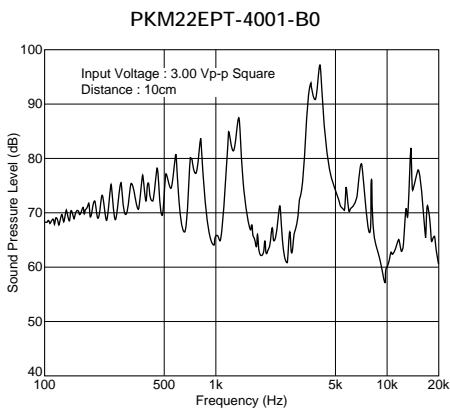
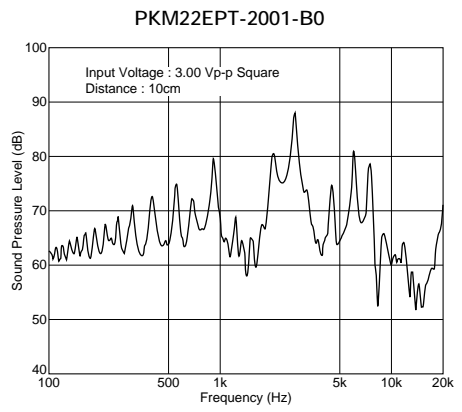
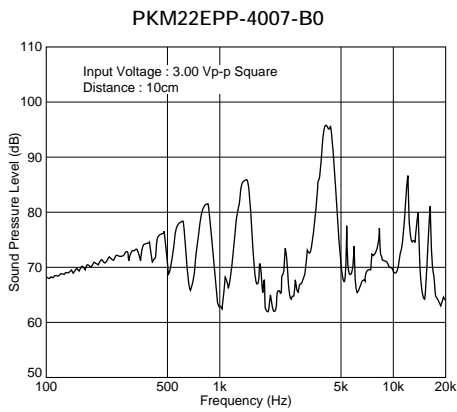
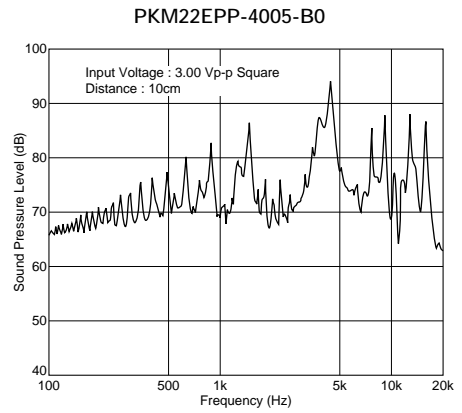
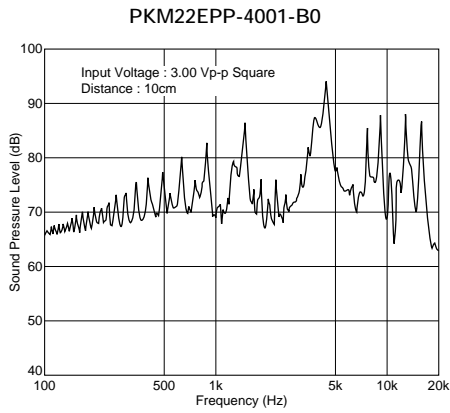
■ Freq. Response (Square Wave 3Vp-p, 10cm)



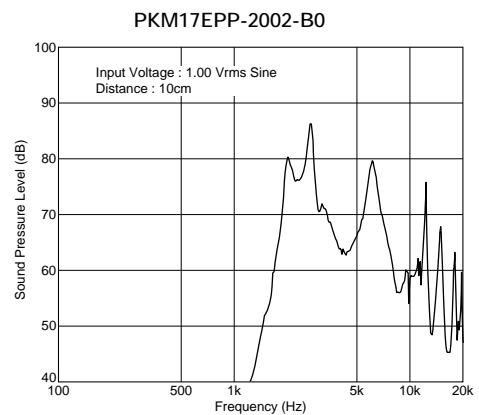
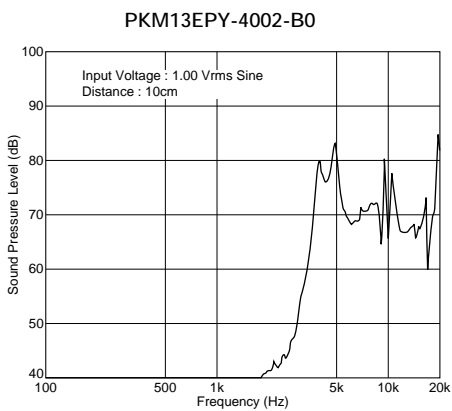
Continued on the following page. ↗

Continued from the preceding page.

**■ Freq. Response (Square Wave 3Vp-p, 10cm)**



**■ Freq. Response (Sine Wave 1Vrms, 10cm)**

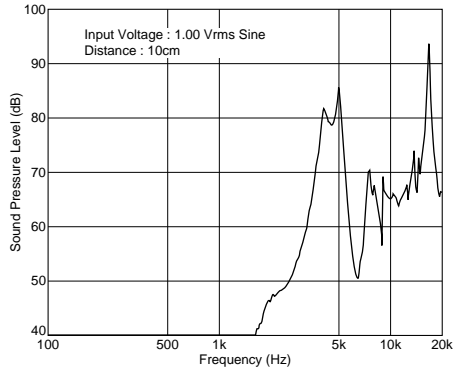


Continued on the following page. ↗

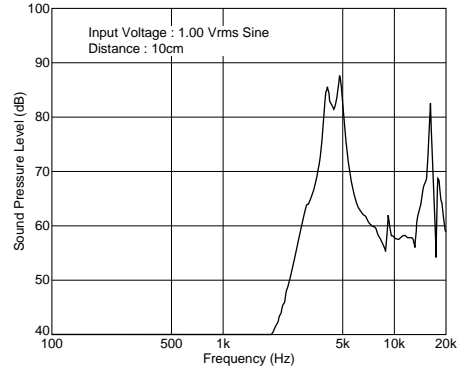
Continued from the preceding page.

### ■ Freq. Response (Sine Wave 1Vrms, 10cm)

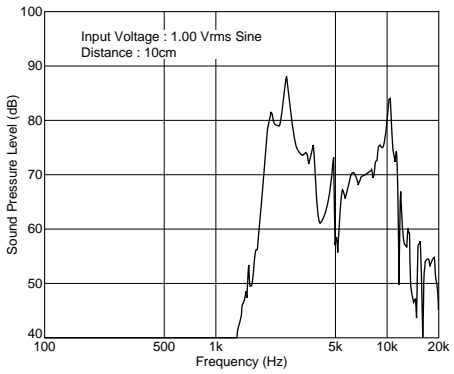
PKM17EPP-4001-B0



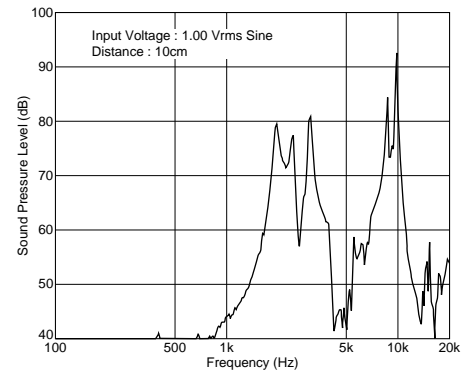
PKM17EPT-4001-B0



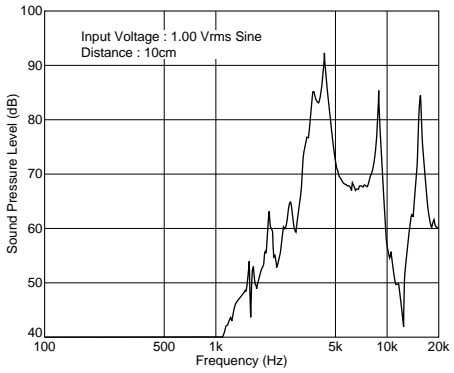
PKM22EP-2001



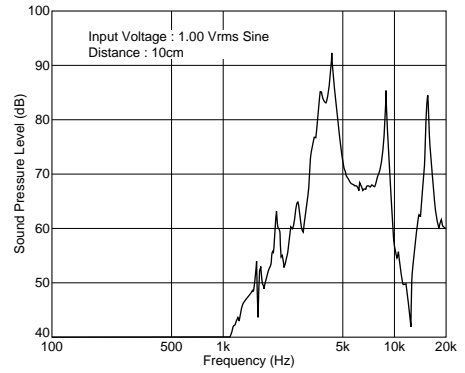
PKM22EPP-2001-B0



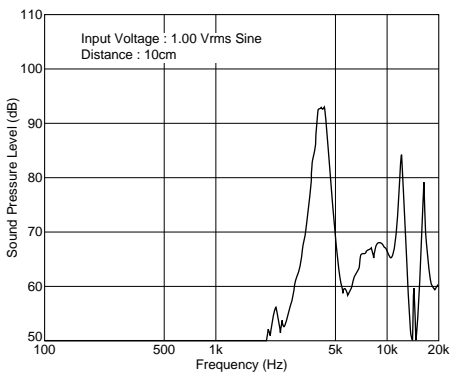
PKM22EPP-4001-B0



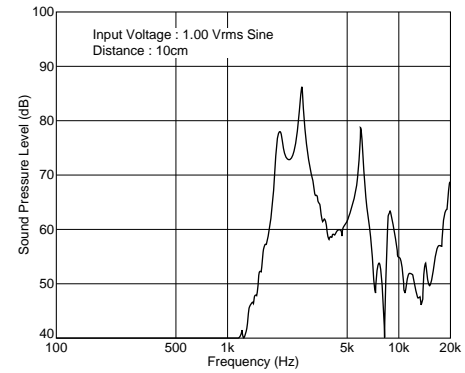
PKM22EPP-4005-B0



PKM22EPP-4007-B0



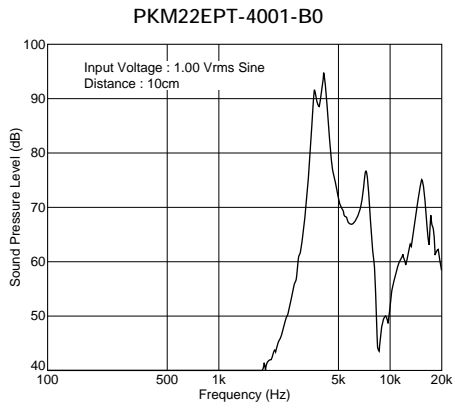
PKM22EPT-2001-B0



Continued on the following page. ↗

↳ Continued from the preceding page.

### ■ Freq. Response (Sine Wave 1Vrms, 10cm)



2