

※音響/電気変換素子としてのマイクロホンにおいて、その音響ピックアップ部を振動板と、それと対向する背極板で一種のコンデンサを形成する構造のものを総称して、コンデンサマイクといいます。  
音による振動板の動きが、振動板、背極板間の静電容量の変化として取り出されます。  
この時通常はコンデンサ成極電圧として、数十V～数百Vを外部から印加する必要がありますが、エレクトレット効果により高分子フィルムに電荷を持続させ、成極用直流高電圧を不要としたものがエレクトレットコンデンサマイクロホンです。  
構造的には、エレクトレット用のフィルムをどこに使用しているかで以下の三タイプに分類されます。

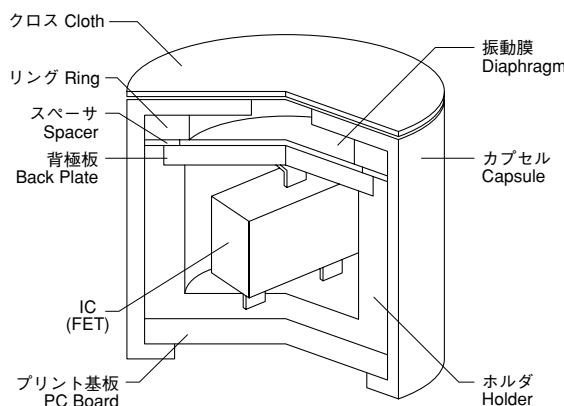
- ① ホイルエレクトレットコンデンサマイクロホン  
振動板自体が、エレクトレット用的高分子フィルムで出来ているもの。
- ② バックエレクトレットコンデンサマイクロホン  
①とは逆に、背極板側に高分子フィルムを溶着したもの。
- ③ フロントエレクトレットコンデンサマイクロホン  
構造的に背極板をなくし、振動板とマイクカプセル内側自体でコンデンサを形成、エレクトレットはケース内側にあります。

※A microphone as an audio-electric converting device, whose audio pickup section has a structure of a condenser consisting of a diaphragm and a back plate opposite thereto, is called a condenser microphone.  
The motion of the diaphragm by sound is picked up as a variation of capacitance between the diaphragm and the back plate.  
In this case, usually, a voltage of tens or hundreds of volts should be applied externally as a condenser polarizing voltage.  
However, electric charge can be maintained in a polymer film by the electret effect, thereby eliminating the polarizing direct-current high voltage. Such is an electret condenser microphone.  
In structure, electret condenser microphones are grouped into the following three types according to where the electret film is used:

- ① Foil-type electret condenser microphone  
The diaphragm itself is made of an electret polymer film.
- ② Back-type electret condenser microphone  
Contrary to ①, a polymer film is adhered to the back plate.
- ③ Front-type electret condenser microphone  
The back plate is structurally eliminated. The diaphragm and the inside portion of the microphone capsule itself form the condenser. The electret is located inside the case.

エレクトレットコンデンサマイク構造図

Structural schema of Electret Condenser Microphone



### 感度

ある一定量 (1 kHz で 1 Pa) の音圧がマイクロホンに加わったとき、そのマイクロホンの出力端子に生ずる開放端電圧を感度と称し、-40 dB/Pa at 1 kHz の様に表します。

$$0 \text{ dB} = 1 \text{ V/Pa} = 1 \text{ V}/10 \mu \text{ bar at } 1 \text{ kHz}$$

### 出力インピーダンス

マイクロホンの出力端子側から見たマイクロホン内部の電気抵抗を表わします。  
JIS C-5502の規定では、50Ω、200Ω、250Ω、400Ω、600Ωを標準としています。

尚、エレクトレットコンデンサマイクロホンユニットの場合は、主に負荷抵抗によって定まります。

### 周波数特性

低音域から高音域まで、どれくらいの周波数の範囲に感度を持っているかを表すデータを周波数特性といいます。言い換えれば、マイクロホンが収音出来る周波数範囲の事で、50 Hz～15 000 Hzのよう表します。

### Sensitivity

The sensitivity is defined as the output voltage for a specified acoustic stimulus and load condition. In this catalog it is expressed in dBV/pa (dBV/10μbar).

In the case of dynamic types it is expressed as the open circuit voltage appearing at the output terminals.

In the case of electret type it is expressed with a specified resistive load and supply voltage since the output resistance tends towards constant current characteristic.

### Output impedance

The output impedance represents the internal electric resistance within a microphone as seen from the side of output terminals of the microphone.

JIS C-5502 specifies 50,200,250,400 and 600 ohms as standard.

In the case of ECMs, the effective output resistance is determined mainly by the value of load resistance. It can be made higher or lower by the value of load resistance with a corresponding change in sensitivity.

### Frequency Response

The frequency response of a microphone is the data indicating which frequency range, from the lower to the higher range, the microphone has a certain sensitivity. In other words, it is the frequency range within which the microphone can receive sound. It is expressed as 50 Hz-15000 Hz.

### 全指向性 / Omnidirectional

品番 Model No.	寸法 Dimensions		質量 Mass (g)	感度 Sensitivity (dB/Pa)	インピーダンス Impedance (kΩ)	基準電圧 Standard Power Supply (V DC)	消費電流 Current Consumption (mA)	端子形状 Terminal Style			チップ コンデンサ Chip-Condenser		掲載頁 Page No.
	径 Diameter φ (mm)	高さ Height (mm)						Lead Wire Type	PCB Type	Solderless Type	内蔵可 Built-In available	外付可 Soldered is available	
KUF4723	4.0	0.9	0.04	-45	2.2	2.0	0.5			●	●		3
KUR0023	4.0	1.5	0.08	-45	2.2	2.0	0.5	●	●	●	●		3
KUF4623	6.0	1.0	0.1	-45	2.2	2.0	0.5		●			●	4
KUF4523	6.0	1.2	0.1	-45	2.2	2.0	0.5		●	●	●		4
KUB4323	6.0	1.5	0.15	-44	2.2	2.0	0.5	●	●	●	●		4
KUF4323	6.0	1.5	0.15	-45	2.2	2.0	0.5	●	●	●	●		5
KUB4223	6.0	1.9	0.15	-40	2.2	2.0	0.5	●	●	●	●	●	5
KUB3323	6.0	2.2	0.2	-45	2.2	2.0	0.5		●	●	●		5
KUF3323	6.0	2.2	0.2	-45	2.2	2.0	0.5	●	●	●	●	●	6
KUB2823	6.0	2.7	0.2	-45	2.2	2.0	0.5	●	●	●	●	●	6
KUC3523	9.4	4.5	0.6	-45	1.0	4.5	0.8	●	●			●	6
KUC2123	9.4	6.5	0.8	-45	1.0	4.5	0.8	●	●			●	7
KUC4023	9.7	6.7	0.9	-45	1.0	4.5	0.8	●	●			●	7

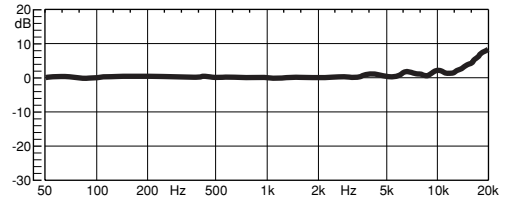
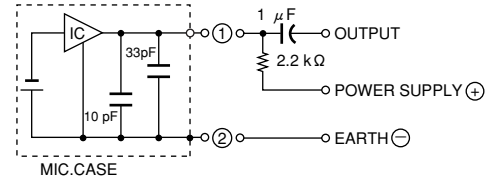
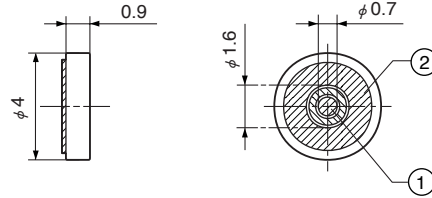
### 単一指向性 / Unidirectional

品番 Model No.	寸法 Dimensions		質量 Mass (g)	感度 Sensitivity (dB/Pa)	インピーダンス Impedance (kΩ)	基準電圧 Standard Power Supply (V DC)	消費電流 Current Consumption (mA)	端子形状 Terminal Style			チップ コンデンサ Chip-Condenser		掲載頁 Page No.
	径 Diameter φ (mm)	高さ Height (mm)						Lead Wire Type	PCB Type	Solderless Type	内蔵可 Built-In available	外付可 Soldered is available	
KUB8223	8.0	4.7	0.5	-45	1.0	4.5	0.5	●				●	8
KUB8023	9.4	6.5	1.0	-45	1.0	4.5	0.8	●				●	8
KUC8323	9.4	6.5	0.8	-45	1.0	4.5	0.8	●				●	8

**KUF4723**



**Solderless Type**



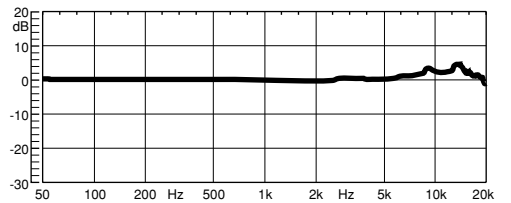
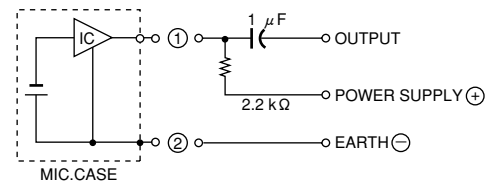
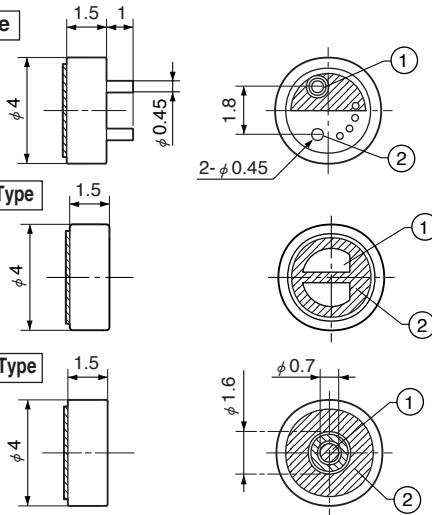
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**PCB Type**

**Lead Wire Type**

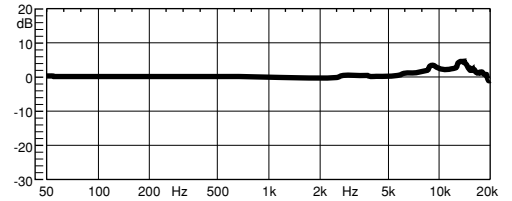
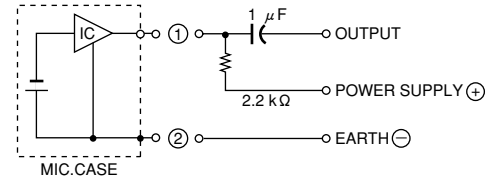
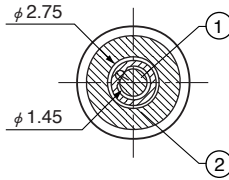
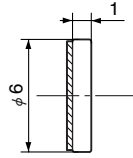
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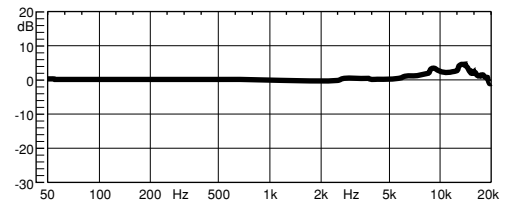
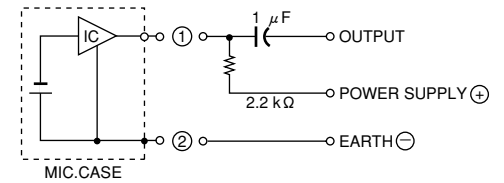
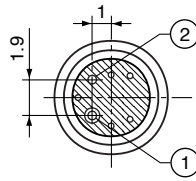
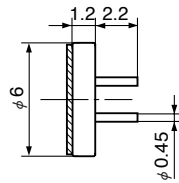
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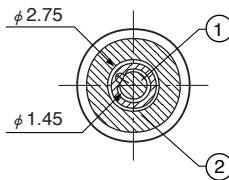
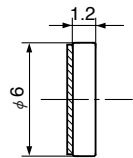
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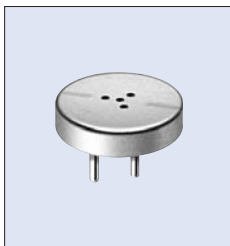
PCB Type



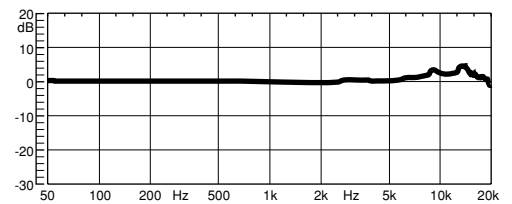
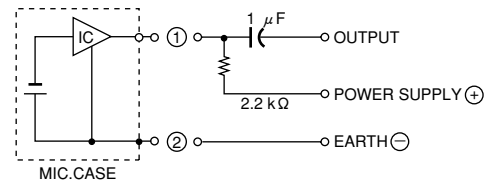
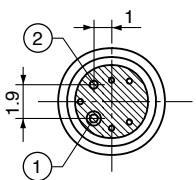
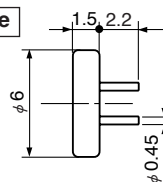
Solderless Type



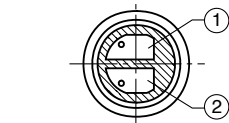
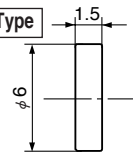
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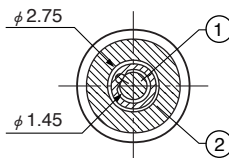
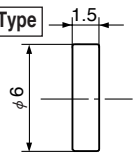
PCB Type



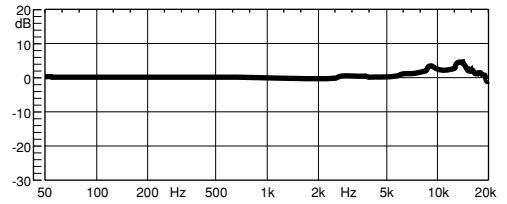
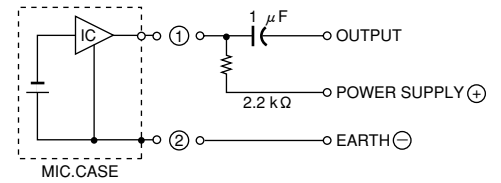
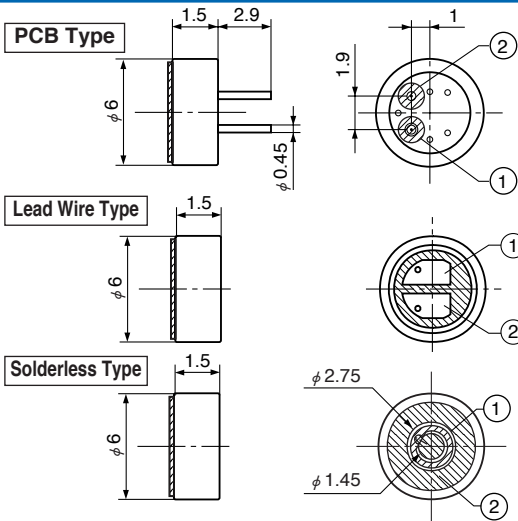
Lead Wire Type



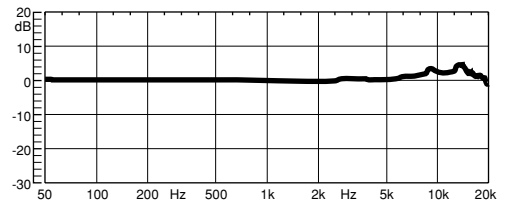
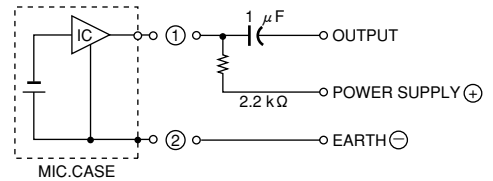
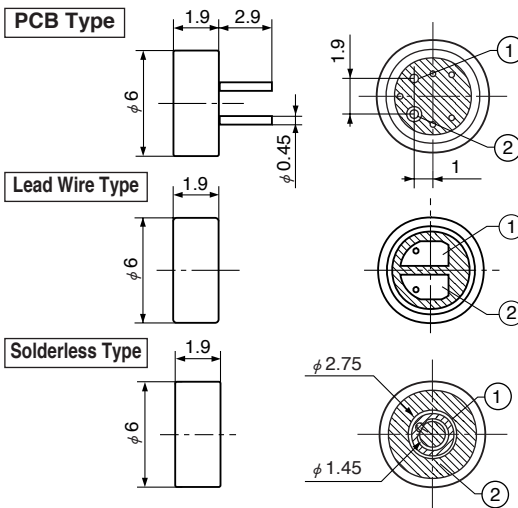
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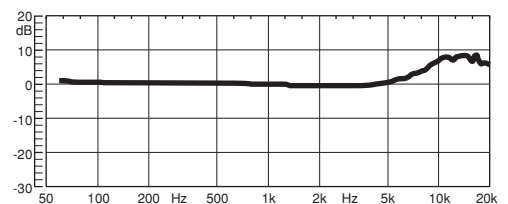
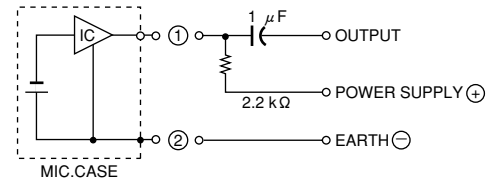
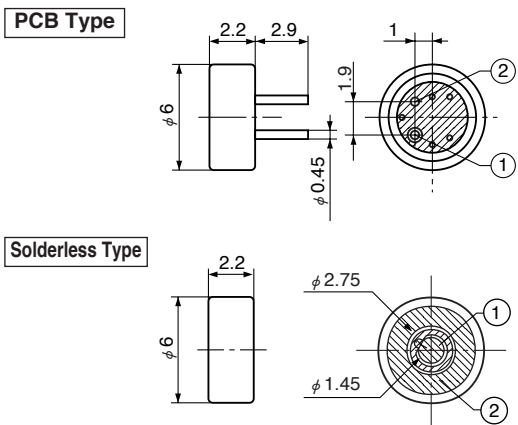
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**KUB4223**



**KUB3323**

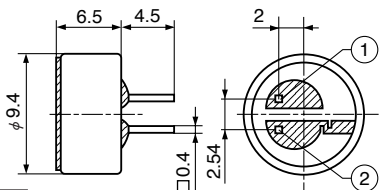




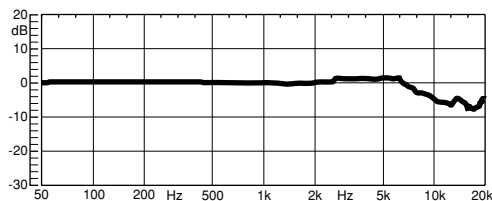
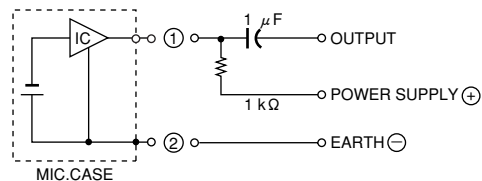
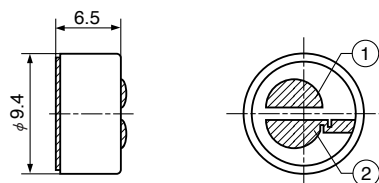
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**PCB Type**



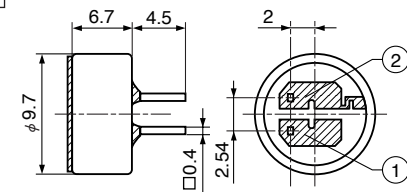
**Lead Wire Type**



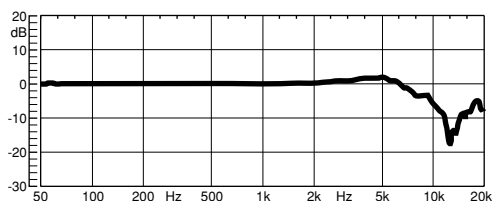
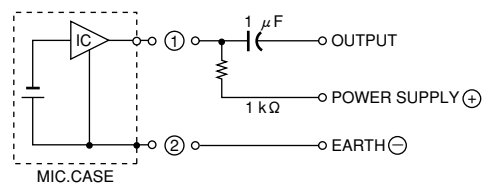
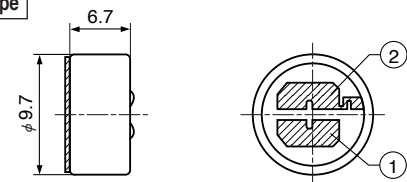
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**PCB Type**



**Lead Wire Type**

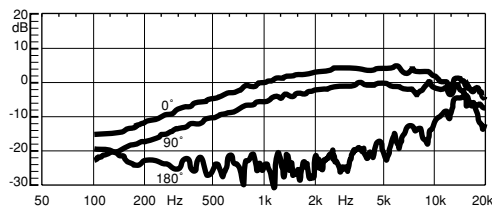
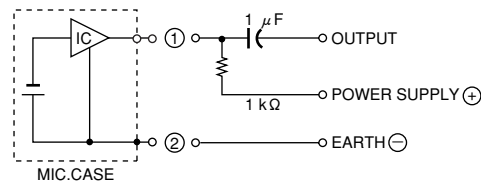
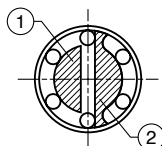
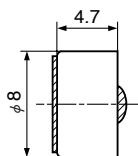


Unit: mm

**KUB8223**



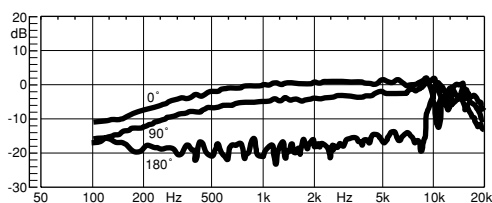
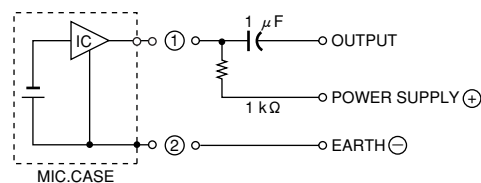
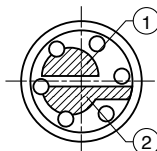
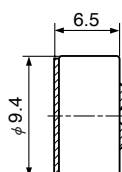
Lead Wire Type



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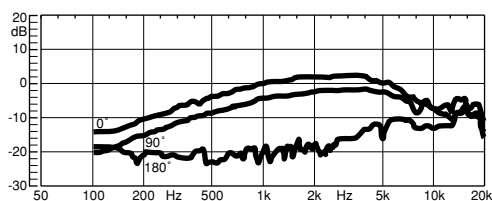
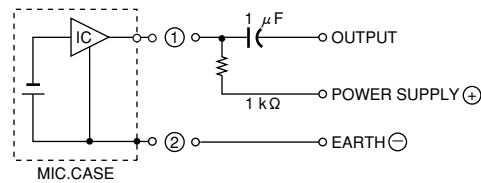
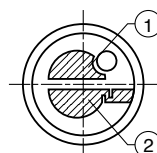
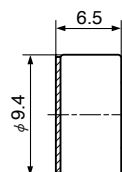
Lead Wire Type



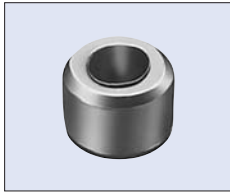
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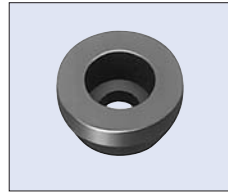
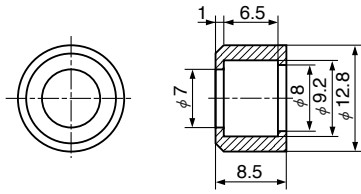
Lead Wire Type



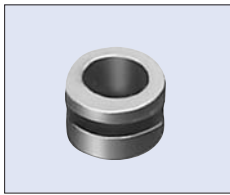
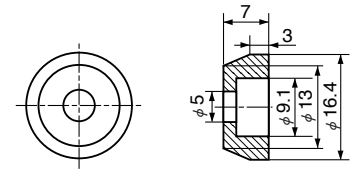




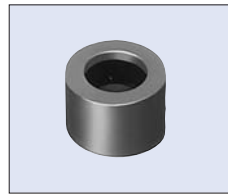
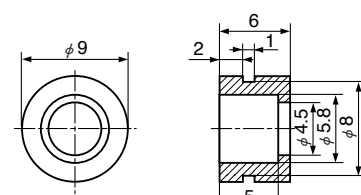
**KCU2018**



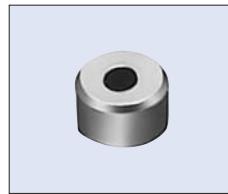
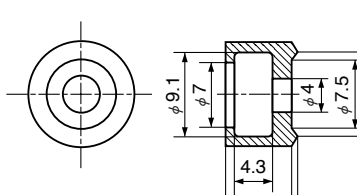
**KCU2078**



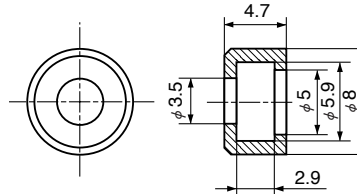
**KCU2027**



**KCU2079**



**KCU2085**



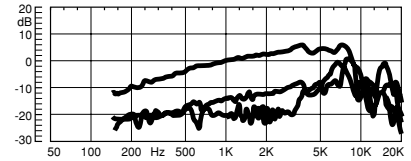
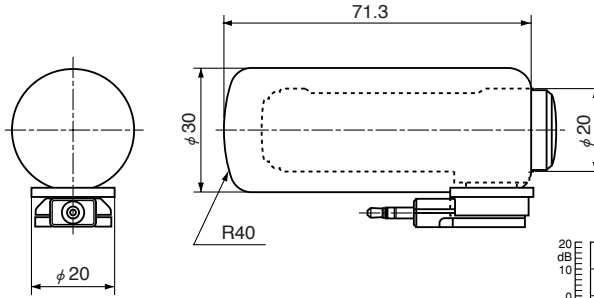
### Microphones

品番 Model No.	形式 Type	指向性 Directivity	インピーダンス Impedance Input ( $\Omega$ )	感度 Sensitivity (dB/Pa)	SN比 SN Ratio	最大入力音圧 Maximum Input SPL	コードプラグ Cord Plug	質量 Mass (g)	掲載頁 Page No.
※KZM0005	ECM	単一指向性 Uni directional	360	-28	58dB	100dB	$\phi$ 3.5 3極 3.5DIA 2 Poles	20	11
HHM8862			1K	-45	55dB	100dB	$\phi$ 3.5 2極 3.5DIA 2 Poles	53	11
HHM7672			2.2K	-41.5	55dB	100dB	$\phi$ 3.5 2極 3.5DIA 2 Poles	10	12
HHM7582		無指向性 Non directional	1K	-45	55dB	100dB	$\phi$ 3.5 2極 3.5DIA 2 Poles	12	12
HHM7632		単一指向性 Uni directional	1K	-42.5	55dB	100dB	$\phi$ 3.5 2極 3.5DIA 2 Poles	17	12
HHM8962			1K	-40.5	-	-	$\phi$ 3.5 2極 3.5DIA 2 Poles	21	13
KHM8712			1K	-45	56dB	120dB	$\phi$ 3.5 2極 3.5DIA 2 Poles	23.5	13

※Custom-Designed Products

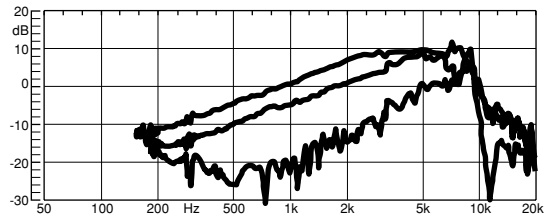
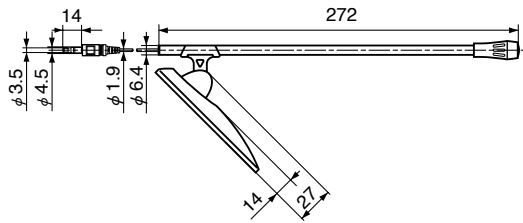
**KZM0005-010010 ※**

**for Video Camera**



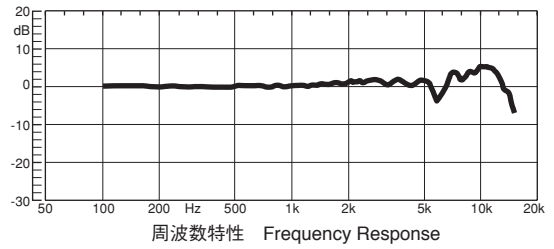
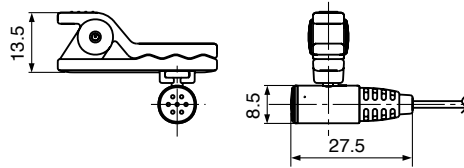
周波数特性 Frequency Response

**HHM8862**

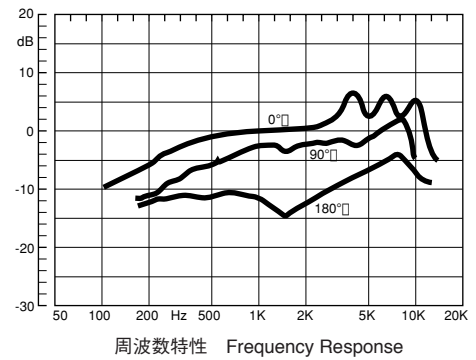
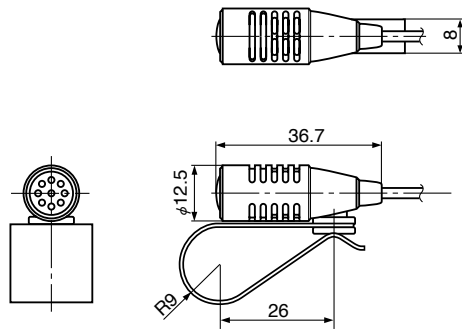


周波数特性 Frequency Response

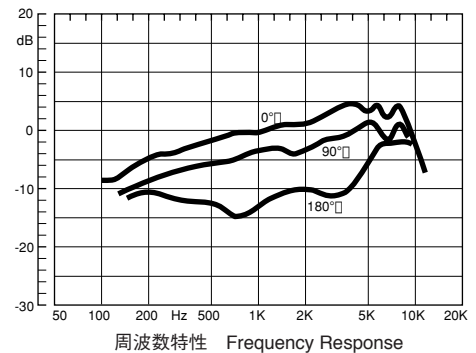
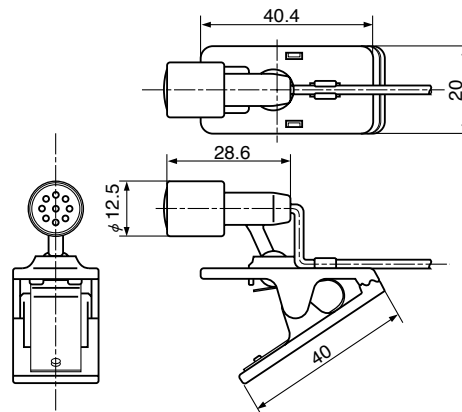
**HHM7672**



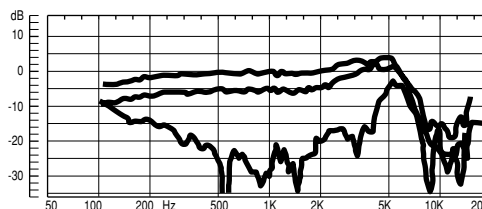
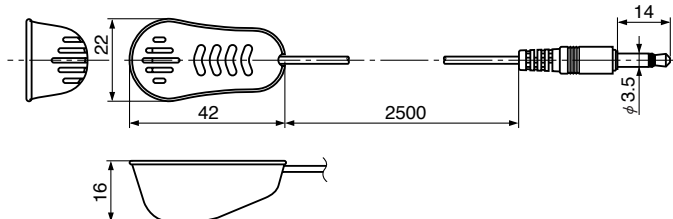
**HHM7582**



**HHM7632**

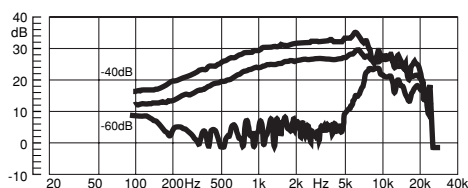
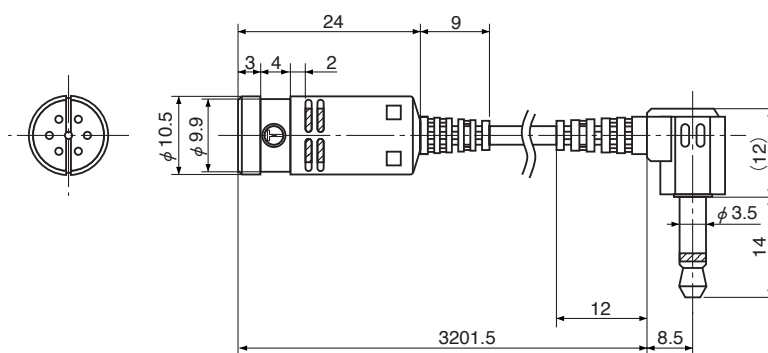


**HHM8962**



周波数特性 Frequency Response

**KHM8712 ※**



周波数特性 Frequency Response