

## **SPECIFICATION**

**Ceramic Antenna 2012 Size**

**2400-2500 MHz**

**P/N: KH-2012-HM1**

## 1. Frequency

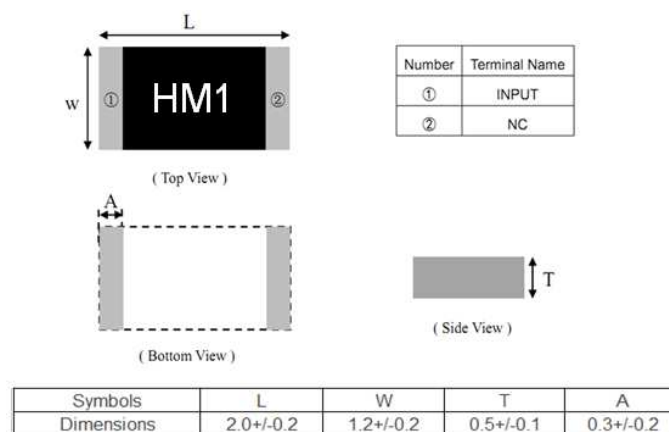
2400-2500 MHz

## 2. Applications

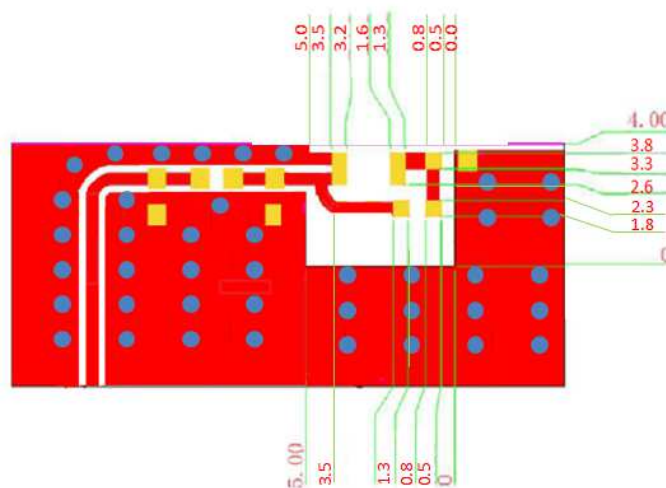
For Miniaturized Bluetooth System

## 3. Dimensions (Unit : mm)

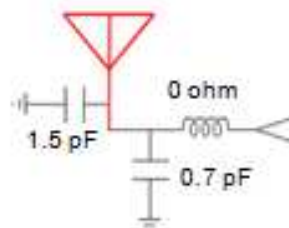
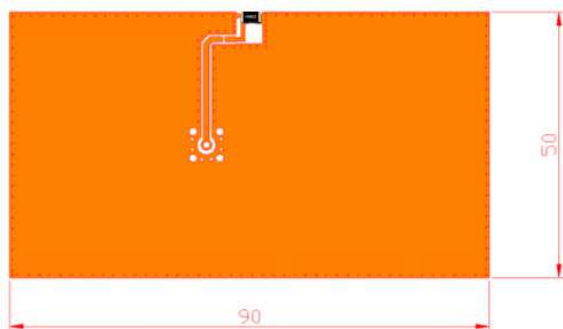
### 1). Over View :



### 2). PCB Layout (Unit : mm) :



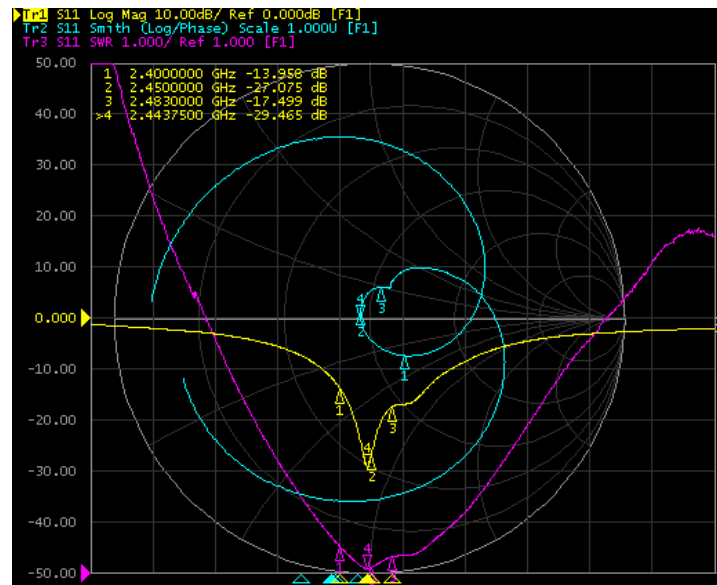
## 4. Evaluation Board Size and Matching Circuits



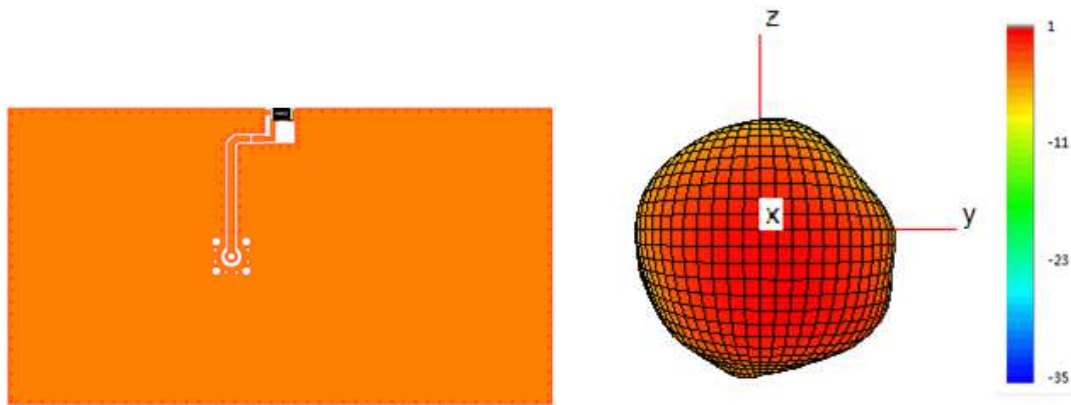
## 5. Electrical Characteristics

Part Number	KH-2012-HM1
Central Frequency	2450 MHz
Bandwidth	100(typ.) MHz
V.S.W.R	$\leq 2.0$
Peak Gain	3.12 dBi
Impedance	50 Ohm
Polarization	Linear
Azimuth Beamwidth	Omni-directional

## 6. Return Loss (S11)

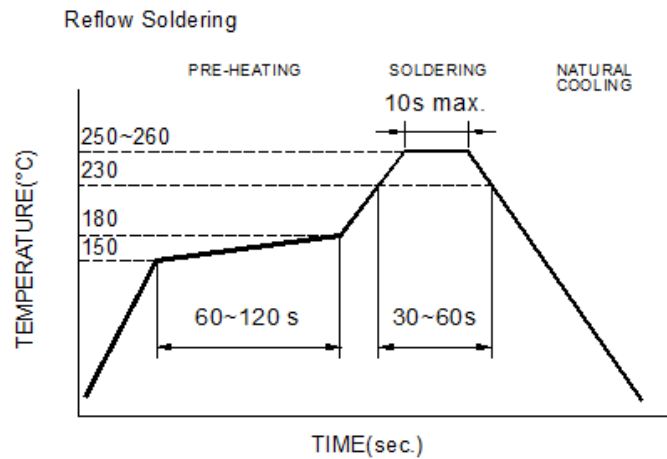


## 7. Radiation Pattern & Efficiency



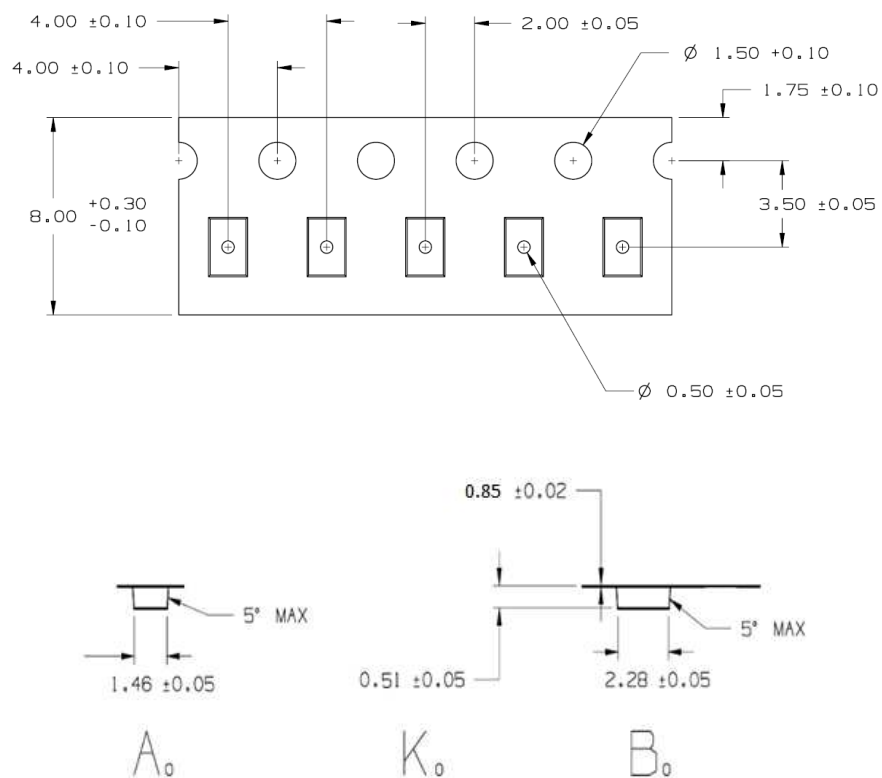
Frequency (MHz)	2400	2450	2500
Efficiency (dB)	-2.22	-1.87	-2.08
Efficiency (%)	60	65	62
Gain (dBi)	2.75	3.12	3.01

## 8. Reflow Soldering Standard Condition



## 9. Packaging and Dimensions

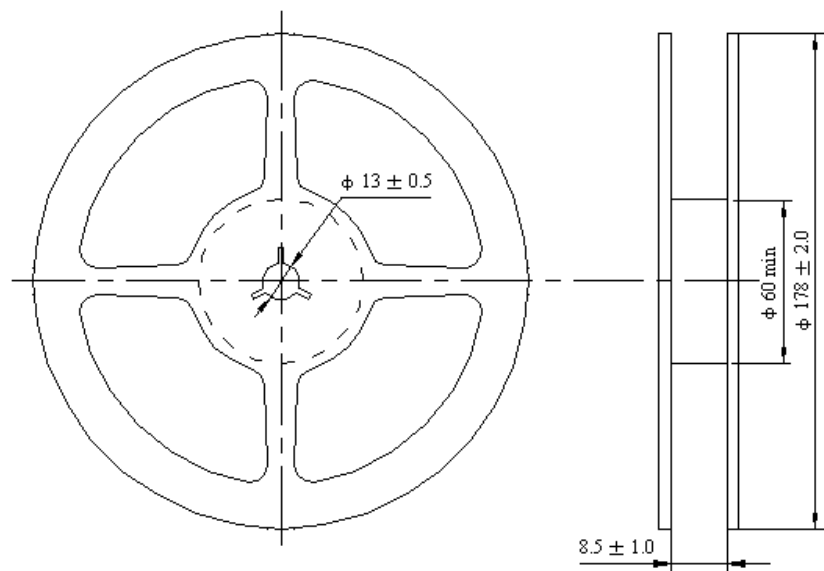
- Plastic Tape



- **Remarks for Package**

Reserve a length of 150~200mm for the trailer of the carrier and 250~300 mm for the leader of the carrier and further 250mm of cover tape at the leading part of the carrier.

- **Reel (4000 pcs/Reel)**



- **Storage Period**

Oxidizable Material, 12 months in vacuum sealed bag, please repack within 168 hours by re-seal the package treatment after using.

Storage Temperature Range : <30 degree C, Humidity : <60%RH

## 10. Dependability Test

Test item	Test condition / Test method	Specification
Solderability IEC 60068-2-58 GB/T2423.28	*Solder bath temperature : $240\pm 5^{\circ}\text{C}$ *Immersion time : $2\pm 0.5$ sec Solder : Sn96.5Ag3.0Gu0.5 for lead-free.	At least 95% of a surface of each terminal electrode must be covered by fresh solder.
Leaching (Resistance to dissolution of metallization) JIS C5101	*Solder bath temperature : $260\pm 5^{\circ}\text{C}$ *Leaching immersion time : $10\pm 1$ sec Solder : Sn96.5 Ag3.0 Gu0.5 for lead-free.	Loss of metallization on the edges of each electrode shall not exceed 25%.
Resistance to soldering heat IEC 60068-2-58 GB/T2423.28	*Preheating temperature : $120\sim 150^{\circ}\text{C}$ , 1 minute. *Solder temperature : $260\pm 5^{\circ}\text{C}$ *Immersion time : $10\pm 1$ sec Solder : Sn96.5Ag3.0Gu0.5 for lead-free Measurement to be made after keeping at room temperature for $24\pm 2$ hrs.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature. Loss of metallization on the edges of each electrode shall not exceed 25%.
Drop Test IEC 60068-2-32 GB/T2423.8 Customer' s specification.	*Height : 50 cm *Test Surface: Rigid surface of concrete or steel. *Times : 6 surfaces for each units ; 2 times for each side.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
Vibration IEC 60068-2-6 GB/T 2423.10	*Frequency : $10\text{Hz}\sim 55\text{Hz}\sim 10\text{Hz}(1\text{min})$ *Total amplitude : 1.5mm *Test times : 6hrs.(Two hrs each in three mutually perpendicular directions)	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
Adhesive Strength of Termination IEC60068-2-21 GB/T 2423.6	*Pressurizing force : $5\text{N}(\leq 0603)$ ; $10\text{N}(> 0603)$ *Test time: $10\pm 1$ sec	No remarkable damage or removal of the termination.

Bending test IEC 60068-2-21 GB/T 2423.29	The middle part of substrate shall be pressurized by means of the pressurizing rod at a rate of about 1 mm/s per second until the deflection becomes 2mm and then pressure shall be maintained for 10±1 sec. Measurement to be made after keeping at room temperature for 24±2 hours.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
Temperature cycle IEC60068-2-14 GB/T 2423.22	30 minutes at -40°C±2°C. 10~15 minutes at room temperature. 30minutes at +85°C±2°C. 10~15 minutes at room temperature. Total 100 continuous cycles Measurement to be made after keeping at room temperature for 24±2 hrs.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
High temperature IEC 60068-2-2 GB/T2423.2	*Temperature : 85±2°C. *Test duration : 500+24/-0 hours. Measurement to be made after keeping at room temperature for 24±2 hrs.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics.
Humidity (steady conditions) IEC60068-2-3 GB/T 2423.3	*Humidity : 85±5%R.H. *Temperature : 85±2°C. *Time : 500+24/-0 hrs. Measurement to be made after keeping at room temperature for 24±2 hrs ※ 200hrs measuring the first data then 300hrs data.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
Low temperature IEC 60068-2-1 GB/T2423.1	*Temperature : -40±2°C. *Test duration : 500+24/-0 hours Measurement to be made after keeping at room temperature for 24±2 hrs.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.