SMD CERAMIC ANTENNA
Data Sheet

TS2012E245K04

For 2400-2484MHz

2.0x1.2mm [EIA2012]

Manufacturer:TSUN TECHNOLOGY CO., LTD
Address:No. 1145, Houcai, Jinfeng Village, Dongyuan Town, Taiwan Investment Zone, Quanzhou, Fujian Province

FEATURES

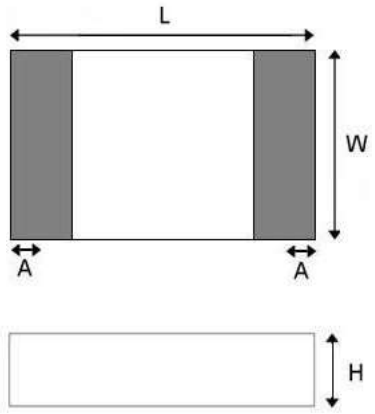
- Light weight,compact
- Wide bandwidth,low cost
- Built-in antenna with high gain
- Operating Temp. : -40℃~+85℃

APPLICATIONS

- Bluetooth,Wireless LAN, Mobile TV
- Home RF system, etc

TS2012E245K04

SHAPES AND DIMENSIONS Dimensions in mm



L	W	A	H
2.0±0.3	1.2±0.3	0.3±0.1	0.55±0.1

ELECTRIC SPECIFICATIONS

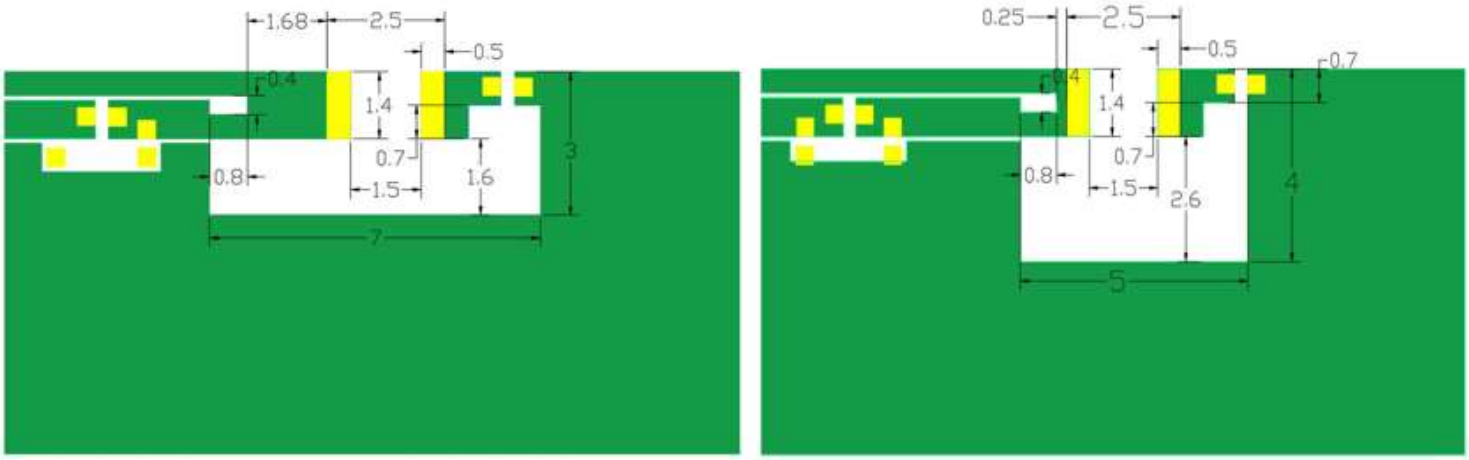
Parameter	Specification	Units
Frequency Band	2400~2483	MHz
Polarization	Linear	
Peak Gain	2.18	dBi
Peak Efficiency	68.8%	%
Impendance	50	Ω

✷Test condition: Test board size 98*65 mm; Matching circuit: Pi matching circuit will be required。

PART NUMBERING SYSTEM

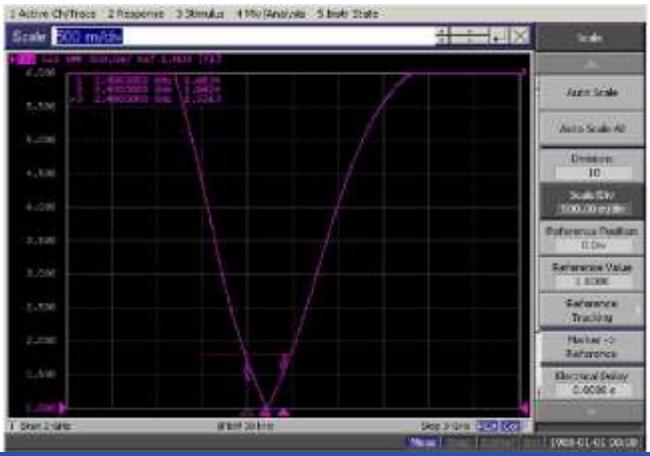
TS - 2012 - E - 2450 - K - 04

Brand Dimension Material **Frequency** **Feeding mode** **Type**



Typical Characteristics

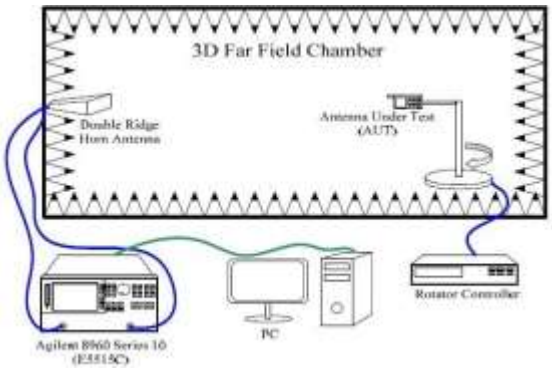
Fig.1 VSWR

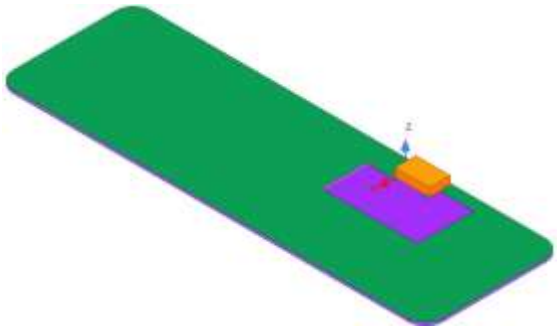


Radiation Pattern

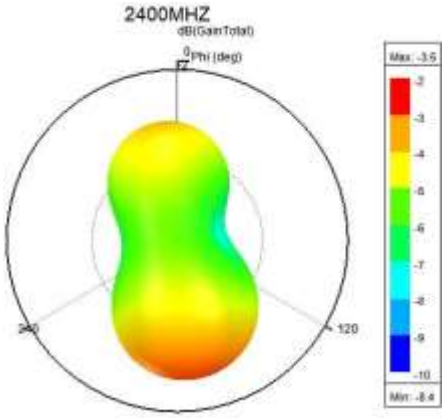
The Gain pattern is measured in FAR-field chamber. DUT is placed on the table of rotator , a standard horn antenna and Vector Network Analyzer is used to collect data.

Fig.2 FAR-field Chamber

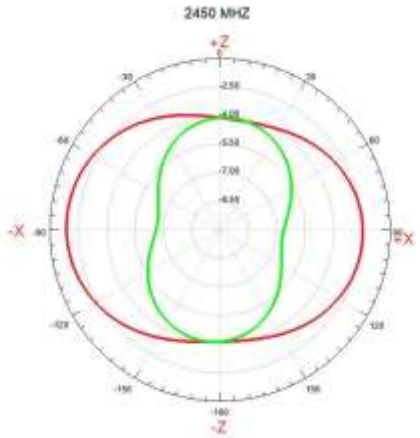




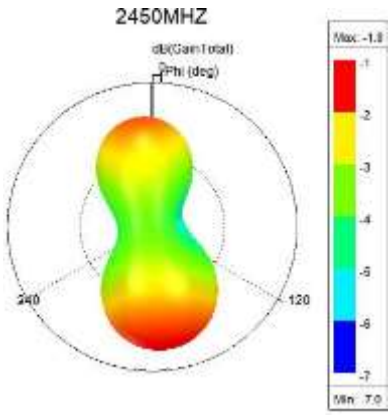
3D Gain Pattern (2400 MHz)



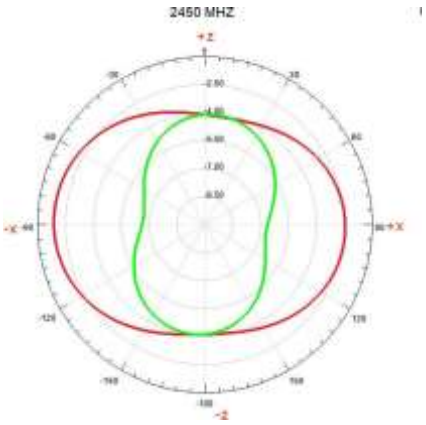
2D Gain Pattern (2400 MHz)



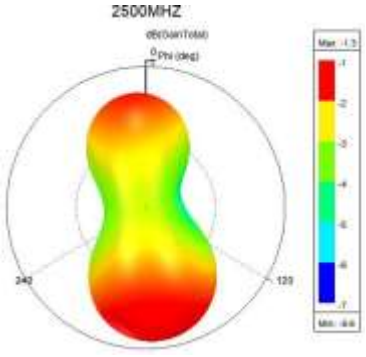
3D Gain Pattern (2450 MHz)



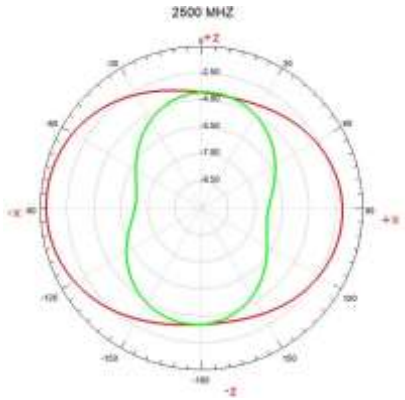
2D Gain Pattern (2450 MHz)



3D Gain Pattern (2500 MHz)



2D Gain Pattern (2500 MHz)



Item	Condition	Specification
Thermal shock	1. 30±3 minutes at -40°C±5°C, 2. Convert to +105°C (5 minutes) 3. 30±3 minutes at +105°C±5°C, 4. Convert to -40°C (5 minutes) 5. Total 100 continuous cycles	No apparent damage Fulfill the electrical spec. after test.
Humidity resistance	1. Humidity: 85% R.H. 2. Temperature: 85±5°C 3. Time: 1000 hours.	No apparent damage Fulfill the electrical spec. after test.
High temperature resistance	No apparent damage Fulfill the electrical spec. after test.	1. Temperature: 150°C±5°C 2. Time: 1000 hours.
Low temperature resistance	1. Temperature: -40°C±5°C 2. Time: 1000 hours.	No apparent damage Fulfill the electrical spec. after test.
Soldering heat resistance	1. Solder bath temperature : 260±5°C 2. Bathing time: 10±1 seconds	No apparent damage
Solderability	The dipped surface of the terminal shall be at least 95% covered with solder after dipped in solder bath of 245±5°C for 3±1 seconds.	No apparent damage

(2)) Storage Condition

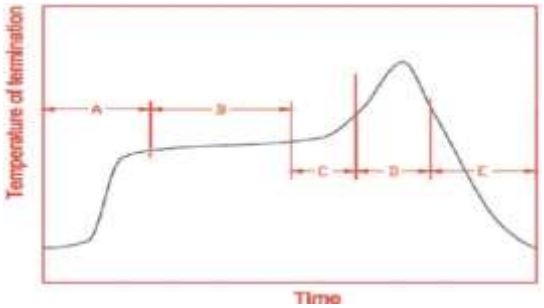
(a) At warehouse: The temperature should be within 0 ~ 30℃ and humidity should be less than 60% RH.The product should be used within 1 year from the time of elivery.

(b) On board: The temperature should be within -40~85℃ and humidity should be less than 85% RH.

(3) Operating Temperature Range

Operating temperature range : -40℃ to +85℃.

Recommended Reflow Solder curve



A	1st rising temperature	The normal to Preheating temperature	30s to 60s
B	Preheating	140℃ to 160℃	60s to 120s
C	2nd rising temperature	Preheating to 200℃	20s to 40s
D	Main heating	if 220℃	50s~60s
		if 230℃	40s~50s
		if 240℃	30s~40s
		if 250℃	20s~40s
		if 260℃	20s~40s
E	Regular cooling	200℃ to 100℃	1℃/s ~ 4℃/s

*reference: J-STD-020C

(1)) Soldering Gun Procedure

Note the follows, in case of using solder gun for replacement.

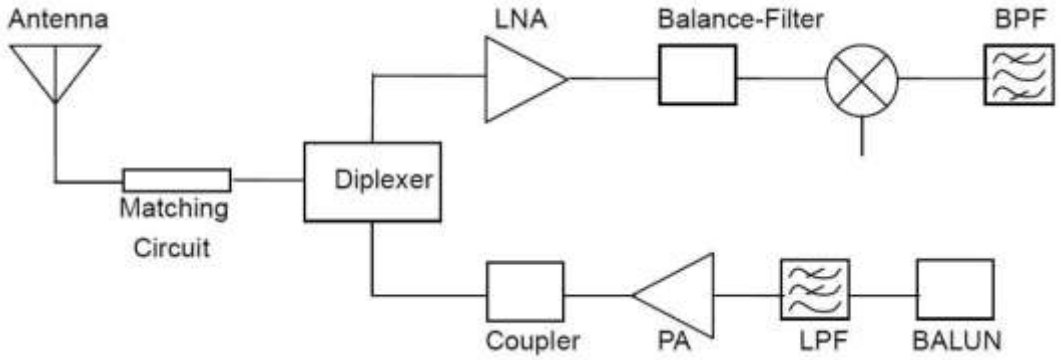
(a) The tip temperature must be less than 350°C for the period within 3 seconds by using soldering gun under 30 W.

(b) The soldering gun tip shall not touch this product directly.

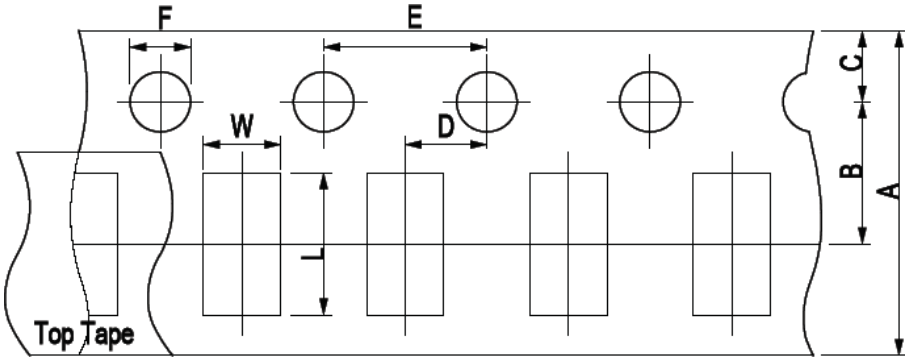
(2) Soldering Volume

Note that excess of soldering volume will easily get crack the body of this product.

Application Guide



Package Information

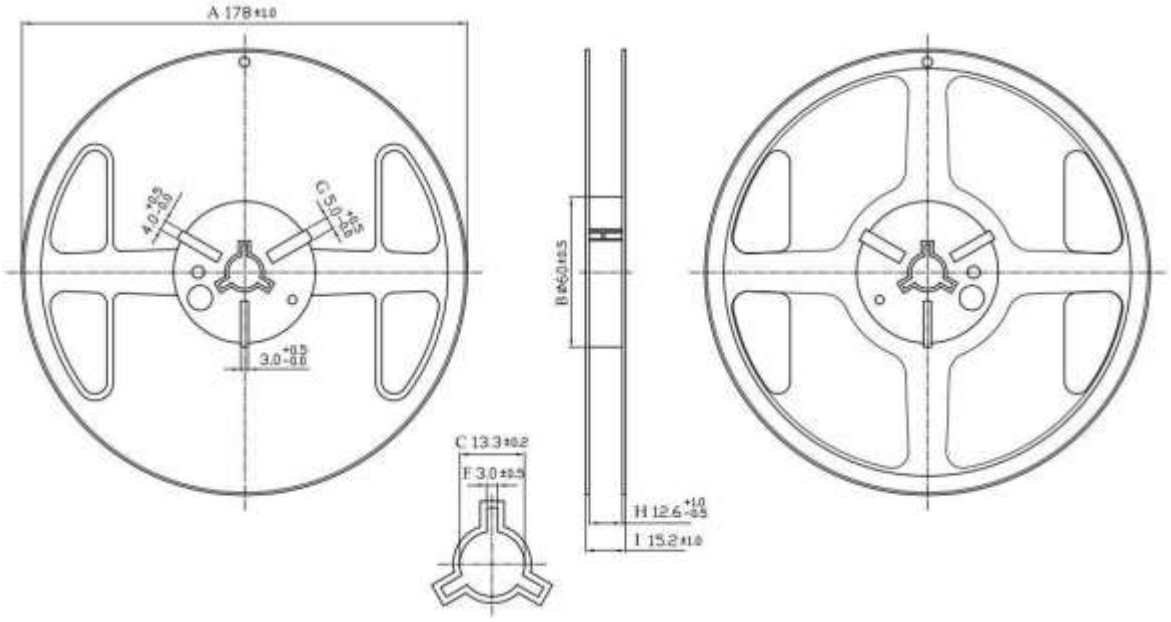


A	B	C	D	E	F	L	W
8.00±0.3	3.50±0.05	1.75±0.1	2.00±0.05	4.00±0.1	1.50±0.1	2.30±0.1	1.55±0.1

Device	Package	Net Weight	Carrier	Qty /reel	HSF
TS2012E245K04	2012	0.0014g	Reel	5000pcs	RoHS compliant

■PACKAGING STYLE

□REEL DIMENSIONS



Revision History

Date	Revision	Description of changes
2021-4-2	1.0	First Version
2022-1-2	1.1	Second Version