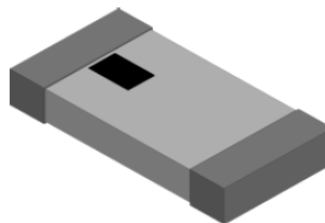


Features

- Bluetooth/WIFI Protocols
- Support: 2.45 GHz Frequency
- Small Case Size:1206 (3.2 x 1.6mm)
- RoHs Complaint



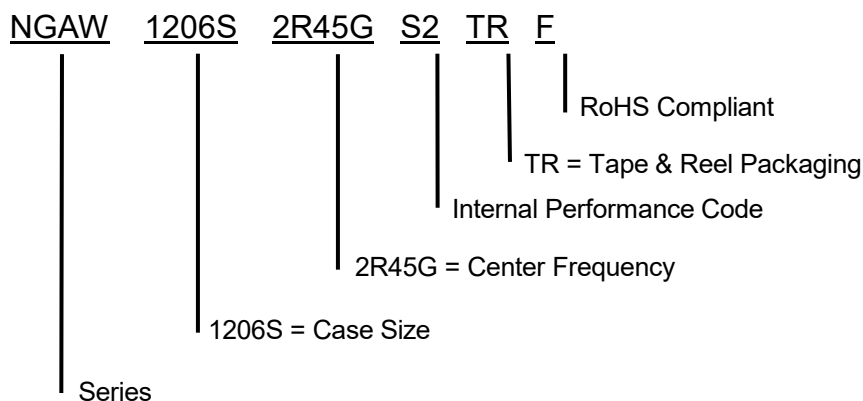
Applications

- Navigation
- Tracking
- Monitoring

Specifications

Electrical	
Frequency Range	2450 MHz
Bandwidth	≥100 MHz
Peak Gain	2.5 dBi @ XZ-total
Average Gain	0.5 dBi @ XZ-total
VSWR in BW	< 2
Impedance	50Ω
Power Capacity	2 W max.
Environmental	
Operating Temperature -	-40°C~+85°C
Storage Temperature	-10°C~ +40°C
Relative Humidity	70% (Max)
ROHS Compliant	Yes

Part Number Breakdown

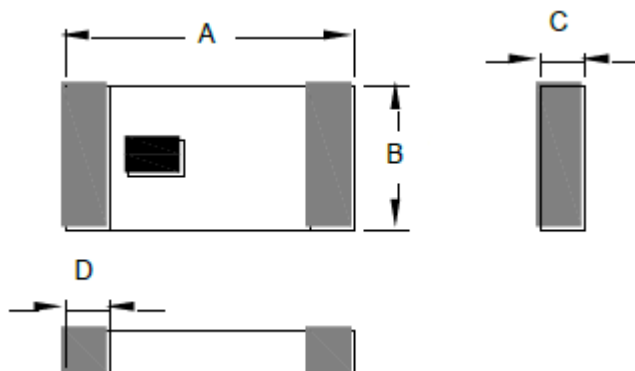


NGAW1206S2R45GS2TRF

2.45 GHz Multilayer Chip Antenna

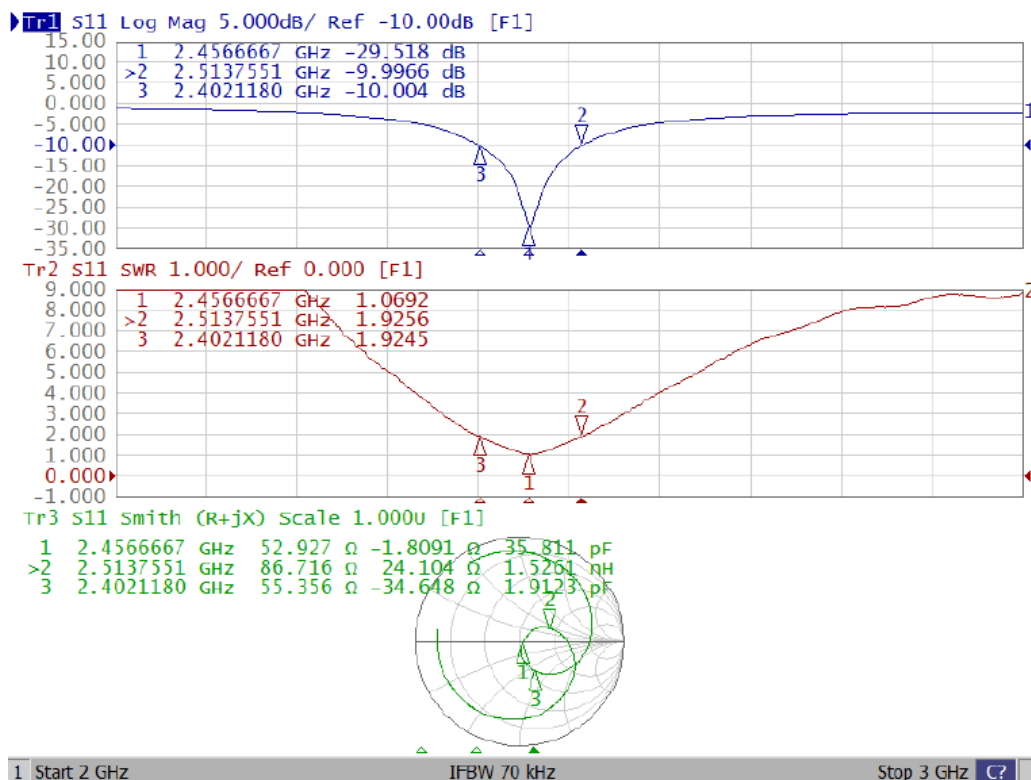


Dimension Drawing & Dimensions (mm)



A	B	C	D
3.20 ± 0.20	1.60 ± 0.20	0.50 ± 0.10	0.50 ± 0.10

VSWR

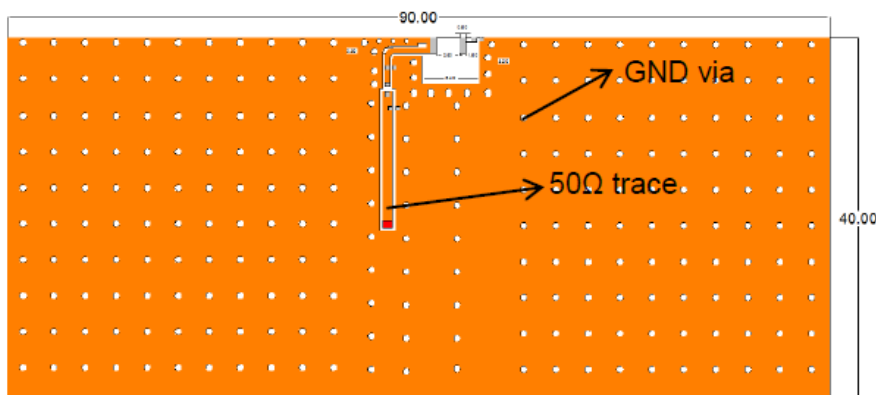


NGAW1206S2R45GS2TRF

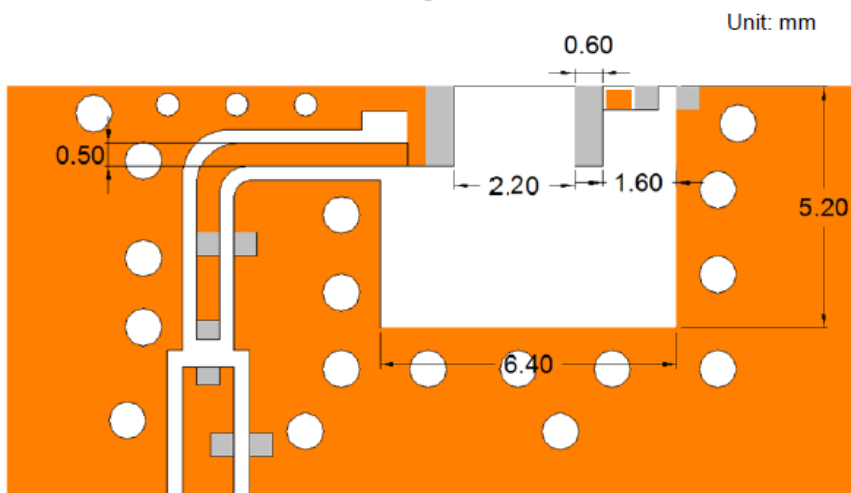
2.45 GHz Multilayer Chip Antenna



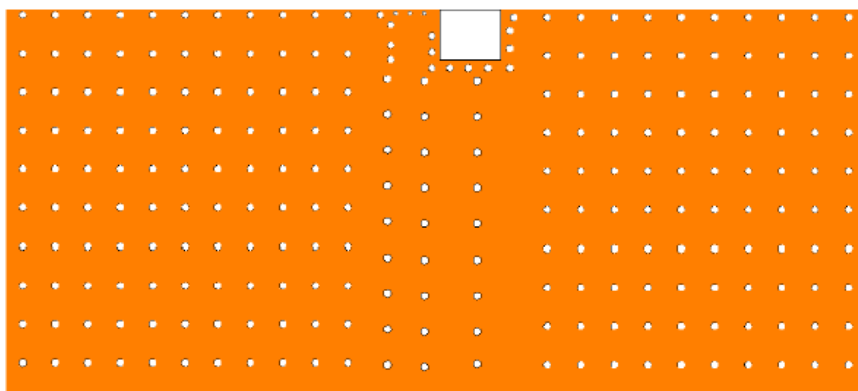
Recommended Land Pattern



Top view



Detail view



NGAW1206S2R45GS2TRF

2.45 GHz Multilayer Chip Antenna



Terminal Configuration:



No.	Terminal Name	No.	Terminal Name
(1)	Feeding Point	(2)	Soldering terminal

Test Conditions:

Unless otherwise specified, the standard atmospheric conditions for measurement/test as:

- a. Ambient Temperature: $20\pm15^{\circ}\text{C}$
- b. Relative Humidity: $65\pm20\%$
- c. Air Pressure: 86 Pa to 106KPa

If any doubt on the results, measurements/tests should be made within the following limits:

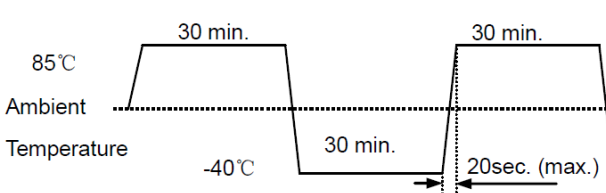
- a. Ambient Temperature: $20\pm2^{\circ}\text{C}$
- b. Relative Humidity: $65\pm5\%$
- c. Air Pressure: 86KPa to 106KPa



Reliability Test

Items	Requirements	Test Methods and Remarks
Terminal Strength	No visible mechanical damage	① Solder the Antenna to the testing jig (glass epoxy board shown as the following figure) using leadfree solder. Then apply a force in the direction of the arrow. ② 10N force for 3216 series. ③ Keep time: 10±1sec. Chip Mounting Pad 10N/10±1s Speed: 1.0mm/s Glass Epoxy Board
Resistance to Flexure	No visible mechanical damage	① Solder the chip to the test jig (glass epoxy board) using a leadfree solder. Then apply a force in the direction shown as the following figure. Solder the chip to the test jig (glass epoxy board) using leadfree solder. Then apply a force in the direction. ② Flexure: 2mm ③ Pressurizing Speed: 0.5mm/sec ④ Keep time: ≥30 sec
		Unit: mm 20 10 R10 45 45 Flexure: 2
Dropping	No visible mechanical damage	Drop the chip 5 times on a wood floor from a height of 50 cm.
Solderability	① No visible mechanical damage. ② Wetting shall be exceeded 75% coverage.	① Solder temperature: 240±2℃ ② Duration: 3sec ③ Solder: Sn/3.0Ag/0.5Cu ④ Flux: 25% Resin and 75% ethanol in weight

Reliability Test

Items	Requirements	Test Methods and Remarks
Resistance to Soldering Heat	No visible mechanical damage	- Solder temperature: $260 \pm 5^{\circ}\text{C}$ - Duration: 5 sec - Solder: Sn/3.0Ag/0.5Cu - Flux: 25% Resin and 75% ethanol in weight - The chip shall be stabilized at normal condition for 1~2 hours before measuring.
Thermal Shock	- No visible mechanical damage. - Satisfy electrical Characteristic.	- Temperature and time: -40°C for 30 ± 3 min $\rightarrow$ 85°C for 30 ± 3 min - Transforming interval: Max. 20 sec. - Tested cycle: 10 cycles - The chip shall be stabilized at normal condition for 1~2 hours before measuring.  The graph shows a temperature profile for thermal shock testing. The y-axis is labeled 'Temperature' with points for 'Ambient', 85°C, and -40°C. The profile consists of a series of trapezoidal pulses. Each pulse has a dwell time of 30 minutes at the high temperature (85°C) and 30 minutes at the low temperature (-40°C). The transition between temperatures is labeled '20sec. (max.)'.
Damp Heat (Steady State)	- No visible mechanical damage. - Satisfy electrical Characteristic.	- Temperature: $60 \pm 2^{\circ}\text{C}$ - Humidity: 90% to 95% RH - Duration: 96^{+24} hours - The chip shall be stabilized at normal condition for 1~2 hours before measuring.
Resistance to High Temperature	- No visible mechanical damage. - Satisfy electrical Characteristic.	- Temperature: $85 \pm 2^{\circ}\text{C}$ - Duration: 96^{+24} hours - The chip shall be stabilized at normal condition for 1~2 hours before measuring.



Efficiency Table

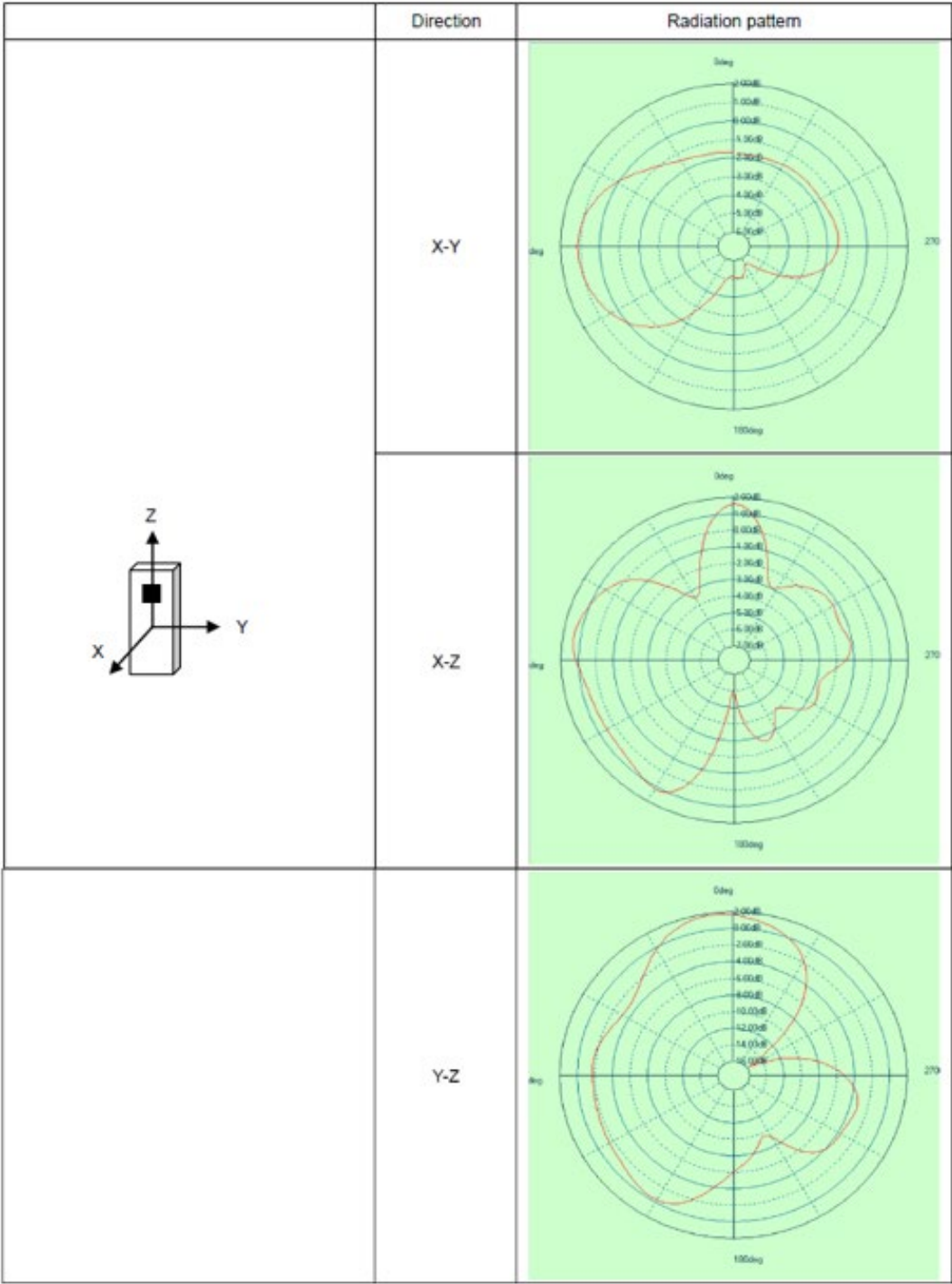
Frequency	Efficiency	Efficiency. dB
2400	60.74%	-2.17
2410	63.14%	-2.00
2420	64.57%	-1.90
2430	65.37%	-1.85
2440	66.14%	-1.80
2450	66.37%	-1.78
2460	65.11%	-1.86
2470	62.77%	-2.02
2480	61.40%	-2.12
2490	58.06%	-2.36
2500	55.13%	-2.59

NGAW1206S2R45GS2TRF

2.45 GHz Multilayer Chip Antenna

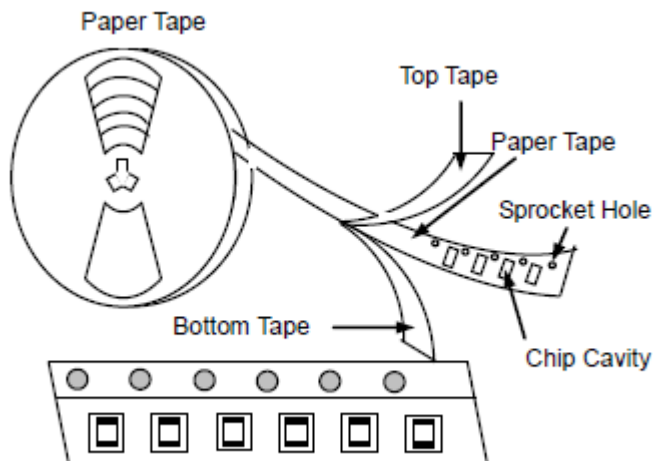


Gain & 2D Radiation Pattern for 2.45 GHz Band

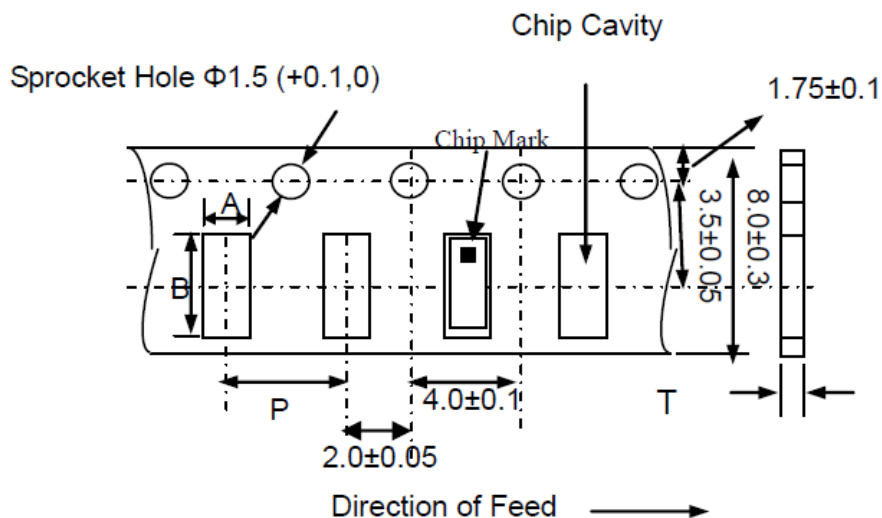


Packaging & Storage

Type	1206
Tape	Paper Tape
Quantity	3K



* The sprocket holes are to the right as the tape is pulled toward the user



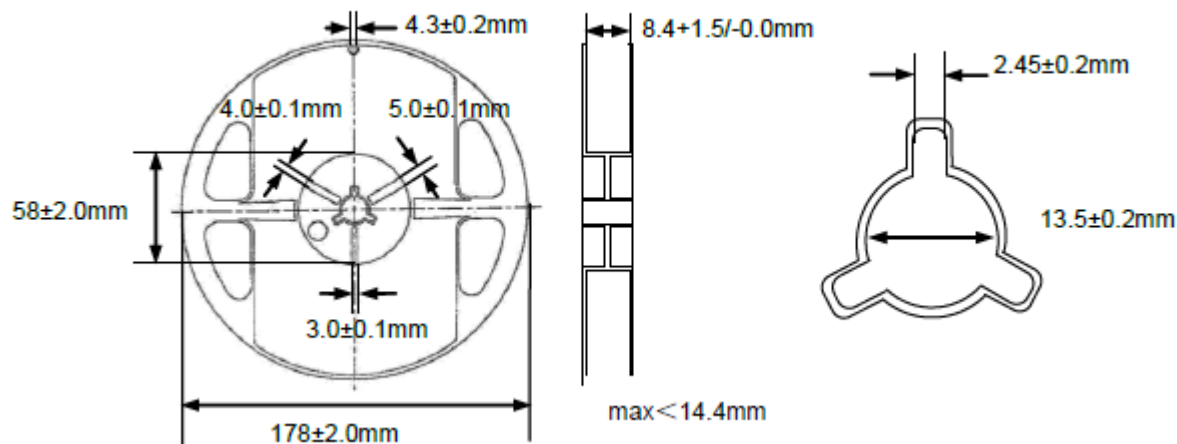
Chip Thickness	A	B	P	T max
0.50±0.10	1.85±0.1	3.5±0.1	4.0±0.10	0.75

NGAW1206S2R45GS2TRF

2.45 GHz Multilayer Chip Antenna



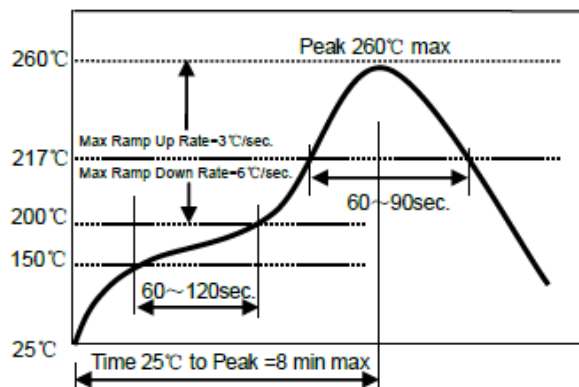
Reel Dimensions: (Unit: mm)



Reflow Profile

- △ Preheat condition: $150 \sim 200^{\circ}\text{C} / 60 \sim 120\text{sec}$.
- △ Allowed time above 217°C : $60 \sim 90\text{sec}$.
- △ Max temp: 260°C
- △ Max time at max temp: 10sec.
- △ Solder paste: Sn/3.0Ag/0.5Cu
- △ Allowed Reflow time: 2x max

[Note: The reflow profile in the above table is only for qualification and is not meant to specify board assembly profiles. Actual board assembly profiles must be based on the customer's specific board design, solder paste and process, and should not exceed the parameters as the Reflow profile shows.]



Iron Soldering Profile

- △ Iron soldering power: Max.30W
- △ Pre-heating: $150^{\circ}\text{C} / 60 \text{ sec}$.
- △ Soldering tip temperature: 350°C Max.
- △ Soldering time: 3 sec Max.
- △ Solder paste: Sn/3.0Ag/0.5Cu
- △ Max.1 times for iron soldering

[Note: Take care not to apply the tip of the soldering iron to the terminal electrodes.]

