SUNTSU

Chip Antenna

SATCA-1GID-WFB1

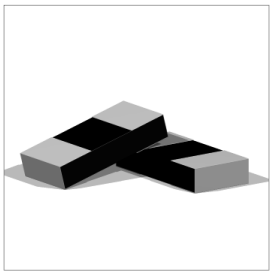
1.6mm x 0.8mm x 0.3mm

Features

- WiFi/ZigBee/Bluetooth
- Chip Type
- Stable And Reliable Performance
- 2400-2500MHz
- SMT Process Compatible

Applications

- ISM 2.4 GHz Applications
- ZigBee/BLE Applications
- Bluetooth Earphone Systems
- Smart Hand Held Devices
- Machine To Machine Communication



Part Numbering Guide

S AT CA 1G1D WF B1

- **S** — SUNTSU
- **AT** — ANTENNA
- **CA** — CHIP ANTENNA
- **1G1D** — PACKAGE SIZE*: 1GID = 1.6mm x 0.8mm x 0.3mm
- **WF** — APPLICATION: WF = WiFi
- **B1** — FREQUENCY: B1 = 2400-2500MHz

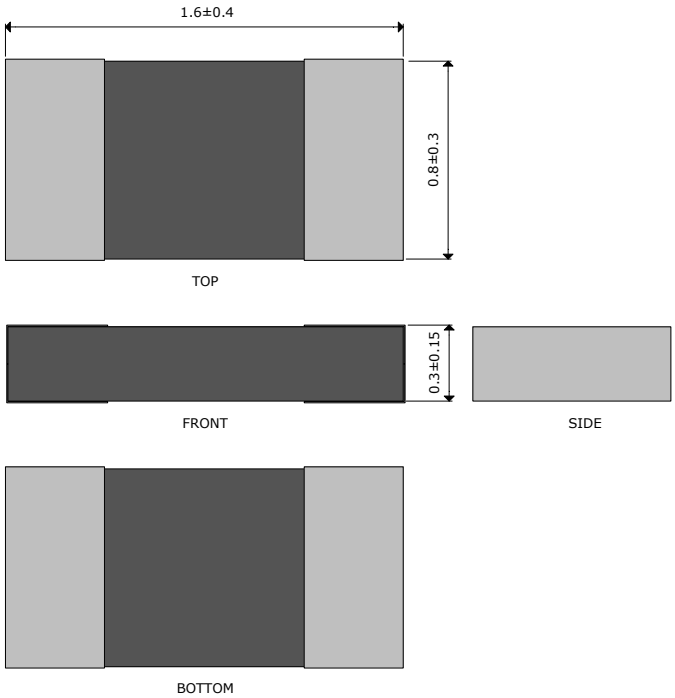
RoHS COMPLIANT

* Where letters denote decimal location (A=.0, B=.1, C=.2, etc.); e.g. B5=0.15, 3A5=3.05, 9A=9.0

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Band	MHz	2400		2500	
Impedance	Ω		50		
Polarization			Linear		
Peak Gain	dBi		-0.3		At 2442MHz
Efficiency	%		60		At 2442MHz
VSWR				2.5	At Center Frequency
Operating Temperature	C	-40		85	

Outline Drawing

All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.



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Specifications are subject to change without notice.

Suntsu Electronics, Inc.
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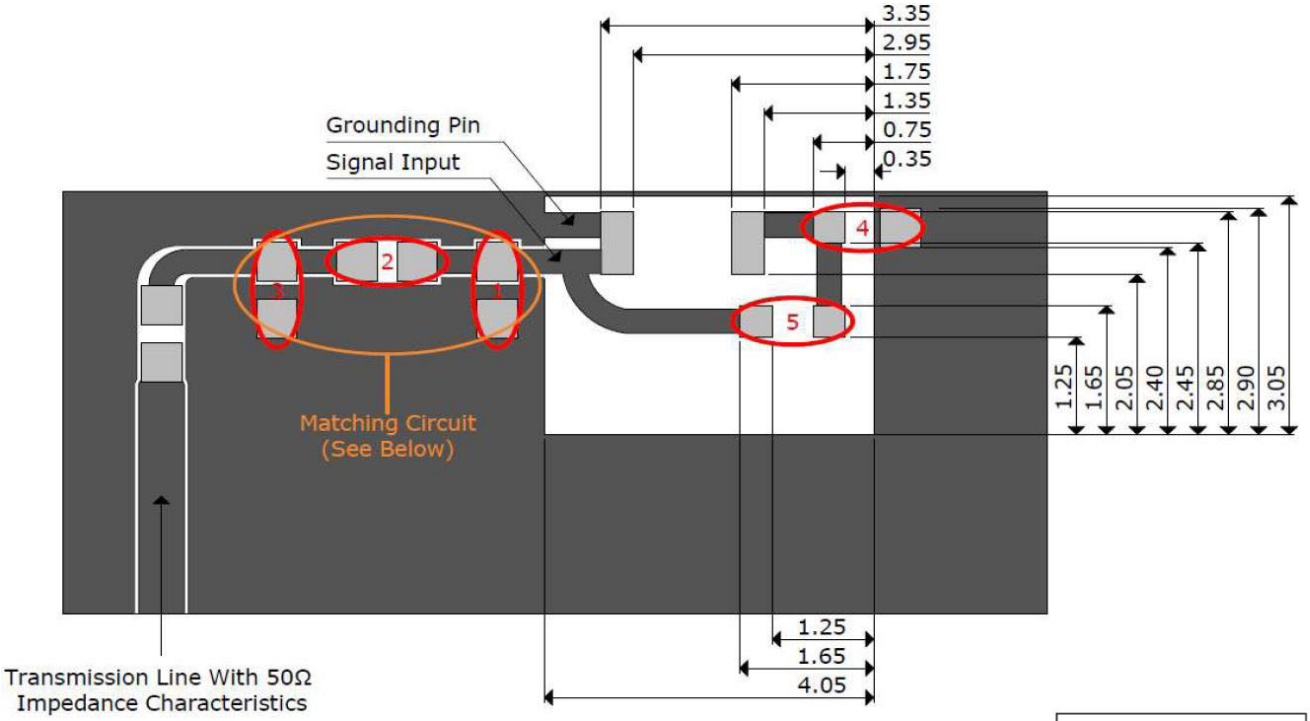
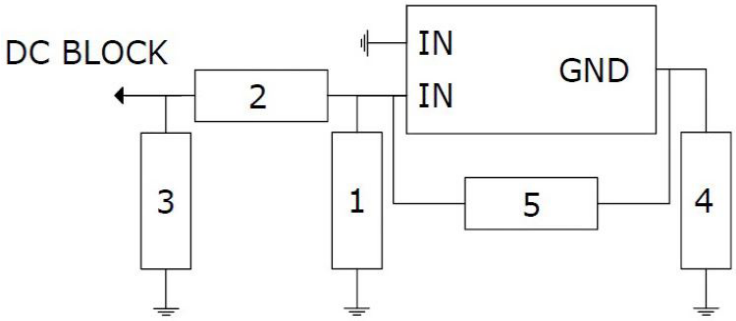
Recommended Land Pattern & Frequency Tuning Scenario Circuit

All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.

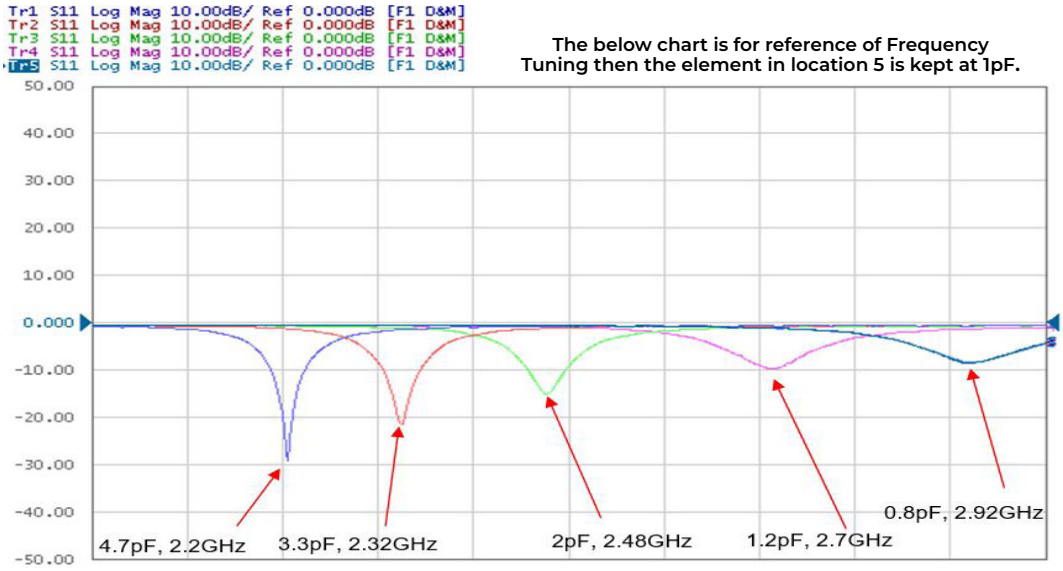


System Matching Circuit Components

Location	Description	Vendor	Tolerance
1	N/A	-	-
2	0Ω, (0402)	-	-
3	N/A	-	-
4 (Fine Tuning)	2.2pF, (0402)	DARFON	±0.1pF
5 (Fine Tuning)	1.2pF, (0402)	DARFON	±0.1pF



The below chart is for reference of Frequency Tuning then the element in location 5 is kept at 1pF.



For these suggested values for the matching and tuning of components, the average frequency will be 2442MHz on a standard 40 x 20mm2 Evaluation board.

Please note, these are average reference values which may need to be changed when different circuit boards or manufactures are used.

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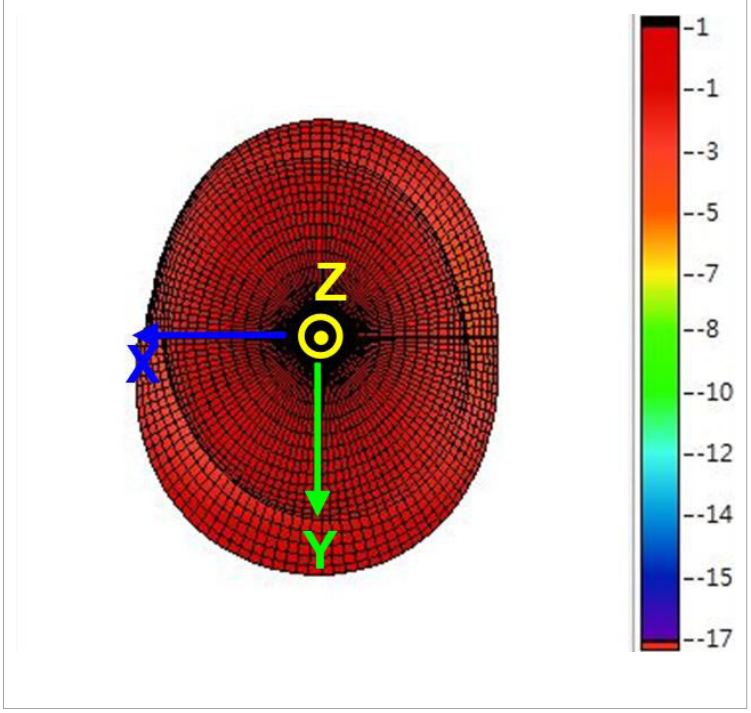
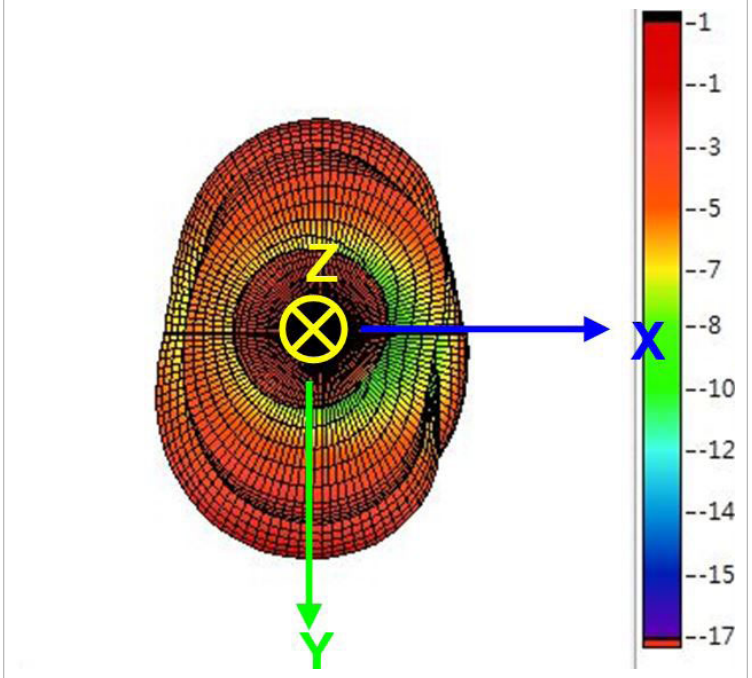
Radiation Pattern

2442MHz



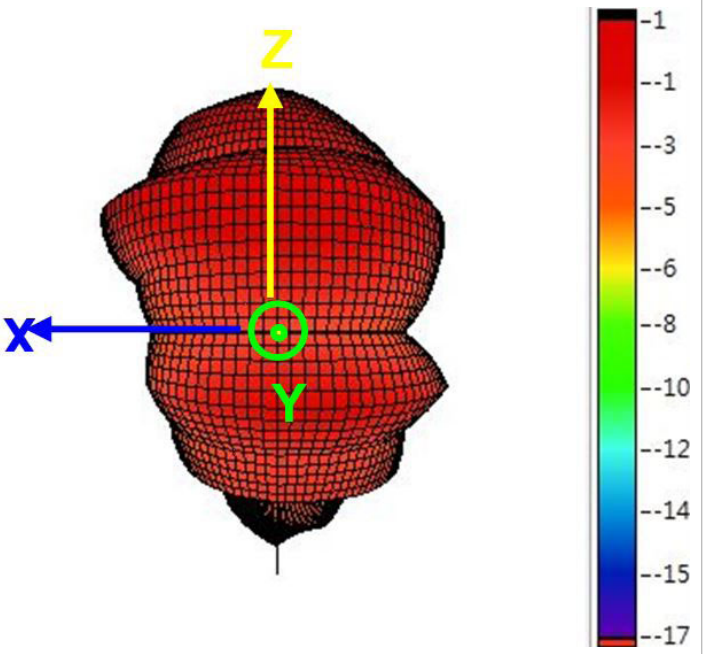
Radiation Pattern

2442MHz



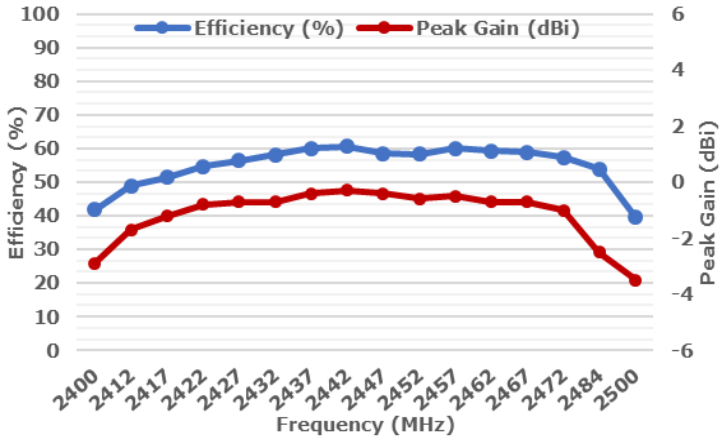
Radiation Pattern

2442MHz



Efficiency V's Frequency

2442MHz



Freq.	2400	2412	2417	2422	2427	2432	2437	2442	2447	2452	2457	2462	2467	2472	2484	2500
Eff. (%)	41.8	48.9	51.4	54.6	56.5	58.1	60.1	60.7	58.6	58.3	60	59.2	59	57.4	53.9	39.5
P.G.(dBi)	-2.9	-1.7	-1.2	-0.8	-0.7	-0.7	-0.4	-0.3	-0.4	-0.6	-0.5	-0.7	-0.7	-1	-2.5	-3.5

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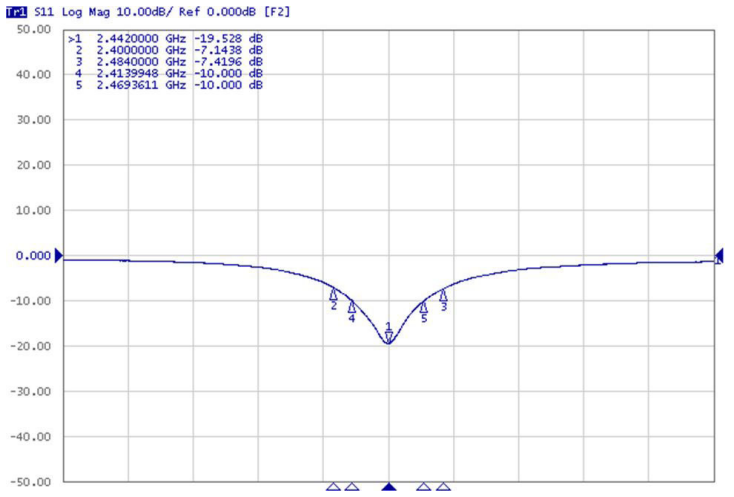
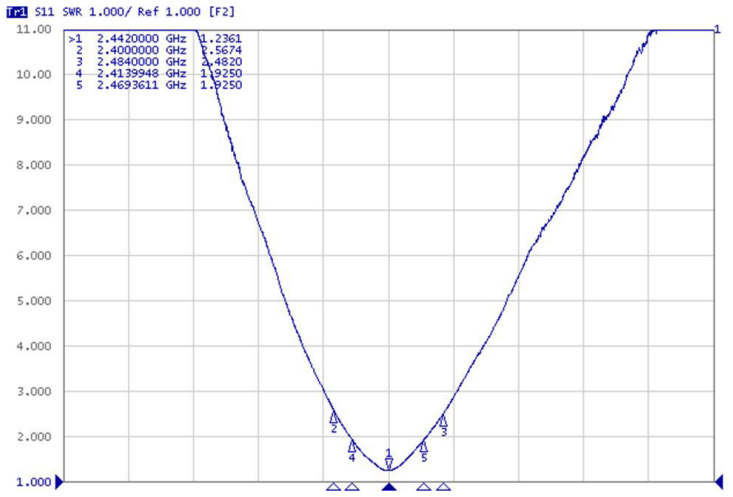
Electrical Test

Return Loss



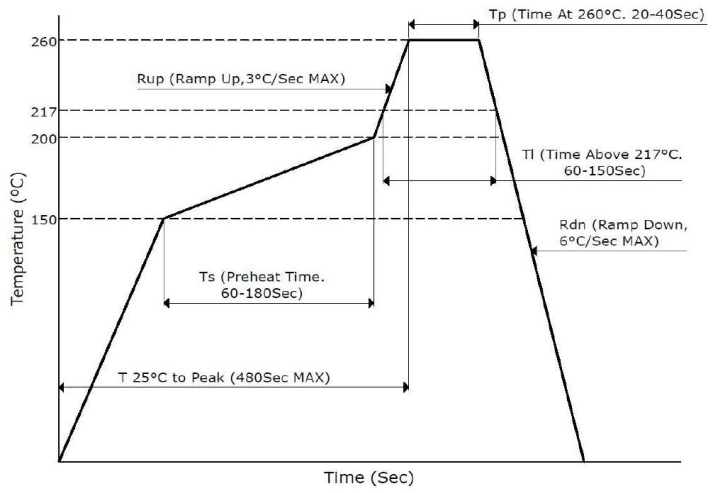
Electrical Test

VSWR



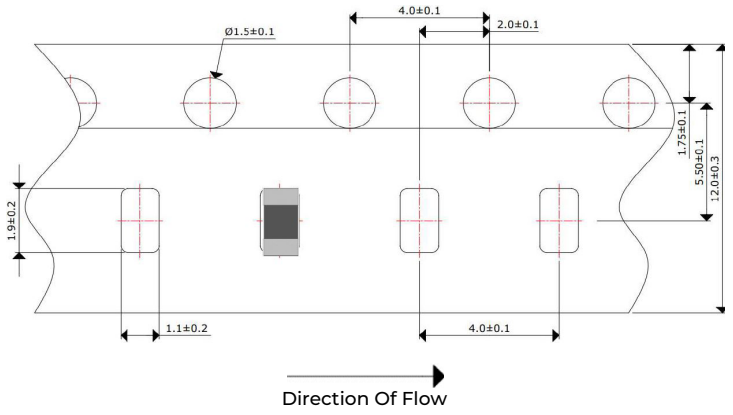
Soldering Conditions

Typical Soldering Profile For Lead-Free Process



Packaging - Tape And Reel

5000Pcs / Reel



Environmental & Mechanical Specifications

High Temperature Test	85°C for 500 hours, and then to normal temperature/humidity for 24hours.
Low Temperature Test	-30°C for 500 hours, and then to normal temperature/humidity for 24hours.
Humidity Test	85°C / 90-95%RH for 96 hours, and then to normal temperature/humidity for 24hours.
Thermal Shock Test	-30°C for 30 min and +85°C for 30 min. 5 cycles, then expose to normal temperature/humidity for 24 hours or more.
Vibration Test	5 to 200 to 5Hz, swept in 10min, 4.5G at max(2mm amplitude), in X and Y directions for 2 hours each and in Z direction for 4 hours.

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