Features

- Stable and reliable performance
- Low profile, compact size
- RoHS compliant
- SMT process compatible

RoHS Compliant
includes all homogeneous materials
(see part numbering system for details)

Applications

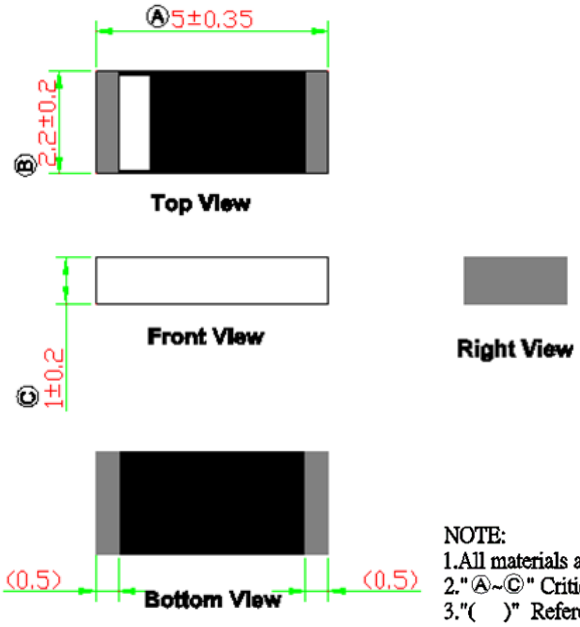
- ISM 2.4 GHz applications
- ZigBee/BLE applications
- Bluetooth earphone systems
- Hand-held devices when WiFi / Bluetooth functions are needed, e.g., Smart phones
- IEEE802.11 b/g/n
- Wireless PCMCIA cards or USB dongles

Specifications

PN: NAN-CB1B5022AF	
Electrical	
Frequency Range	2400~2500MHz
Center Frequency	2442 MHz
Gain	1.9 dBi typ.
Efficiency	62.3% typ.
V.S.W.R	1.2 Max
Polarization	Linear
Impedance	50Ω
Dimensions (mm):	
Body Length (A)	5.0 ± 0.35
Width (B)	2.2 ± 0.2
Thickness (C)	1.0 ± 0.2
Connection Type	SMT
Ground Plane	40 mm x 40 mm

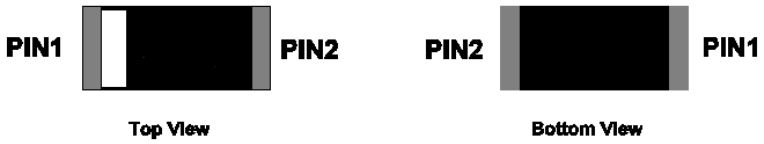
NAN-C B 1B 5022 A F

- F = RoHS compliant
- A =Version Code (See page 7)
- 5022 = Size (5.0 mm x 2.2 mm)
- 1B = One Frequency Band
- B= Bluetooth
- NAN-C = Series



NOTE:
1.All materials are RoHS compliant.
2."Ⓐ~Ⓒ" Critical Dimensions.
3."( )" Reference Dimensions.

PIN Definition

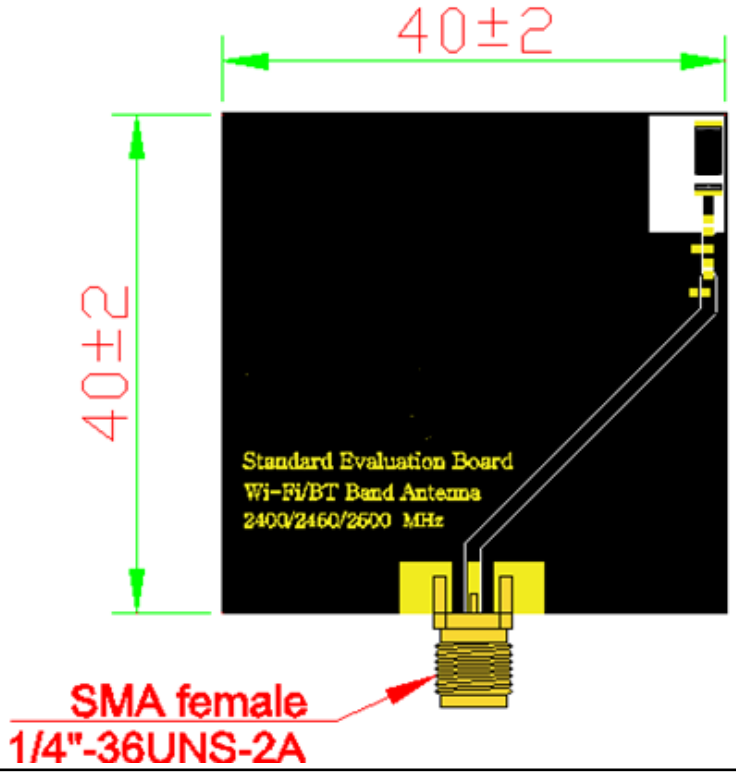


PIN	1	2
Soldering PAD	Signal	N/C

Operating & Storage Conditions

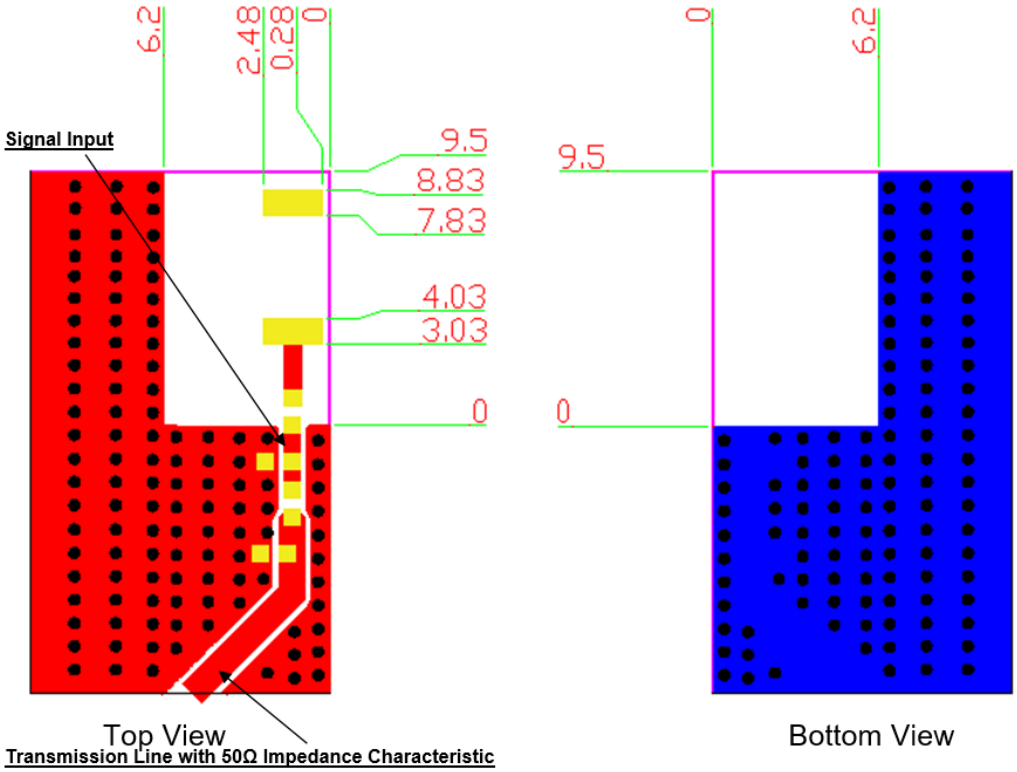
Operating	
Maximum Input Power	2W
Operating Temperature	-40°C to 85°C
Relative Humidity	10% to 70%
Storage (Sealed)	
Storage Temperature	-5°C to 40°C
Relative Humidity	20% to 70%
Shelf Life	1 Year
Storage (Unsealed)	
Meets Criteria	J-STD-033 MSL2a
Storage (After mounted on customer's PCB with SMT process)	
Storage Temperature:	-40°C to 85°C
Relative Humidity	10% to 70%

Evaluation Board

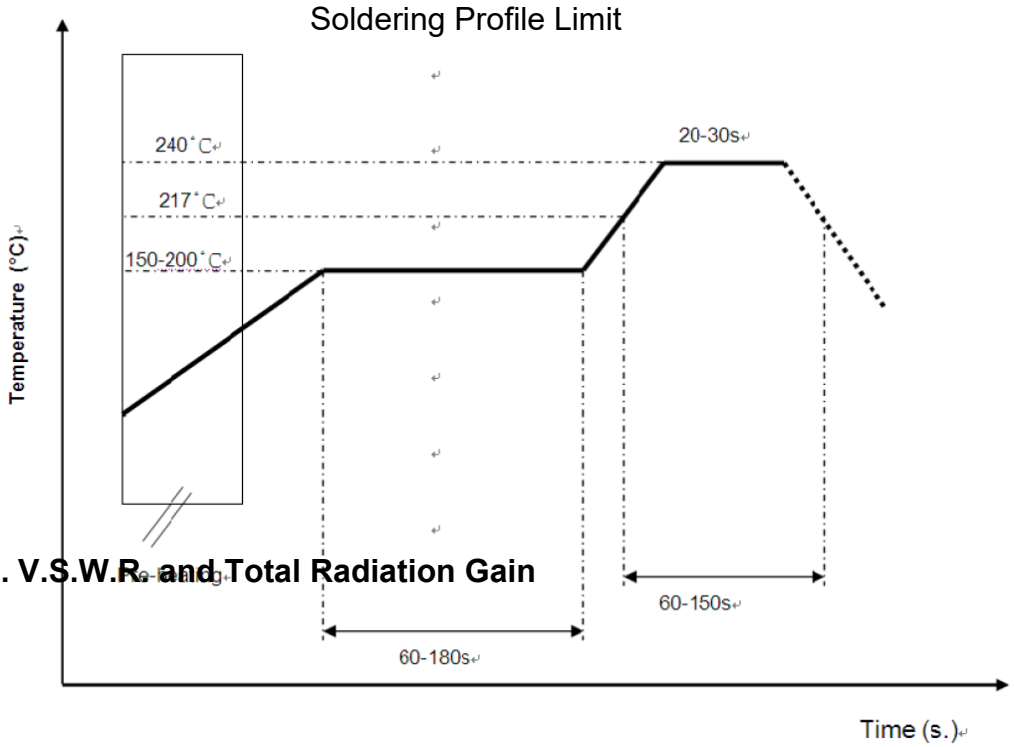


Solder Ground Pattern

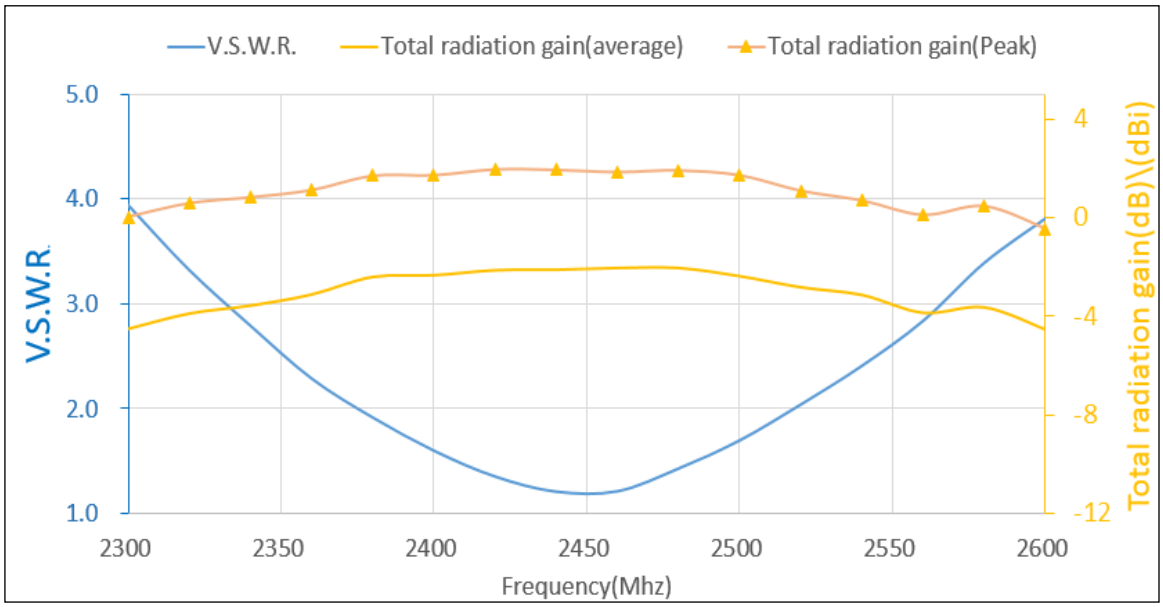
The gold areas represent the solder land pattern. Any recommendations on the matching circuit will be provided according to the customer's installation conditions.



Soldering Conditions

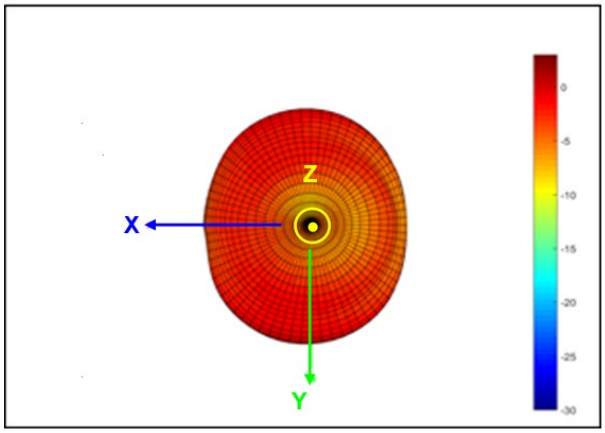


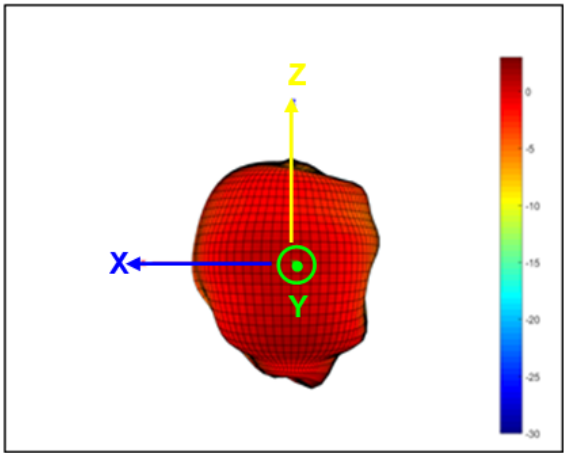
Frequency vs. V.S.W.R. and Total Radiation Gain

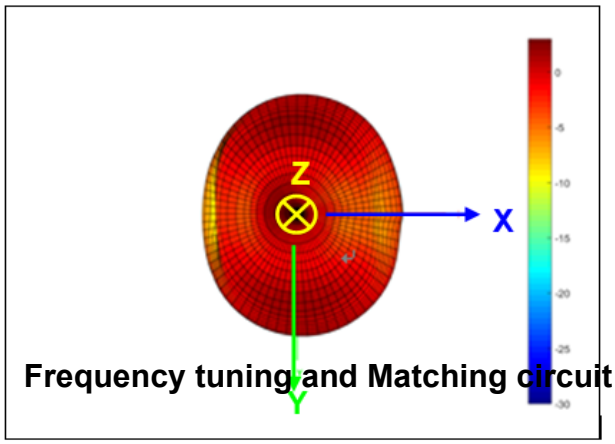


3D Radiation Gain Pattern (with 40 x 40 mm Evaluation Board)

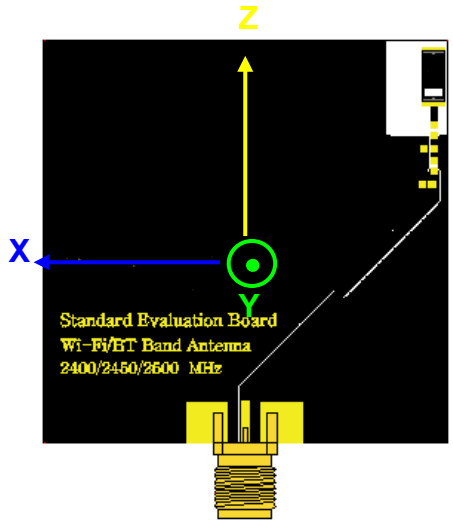
3D Radiation Gain Pattern @ 2442 MHz (unit: dBi)



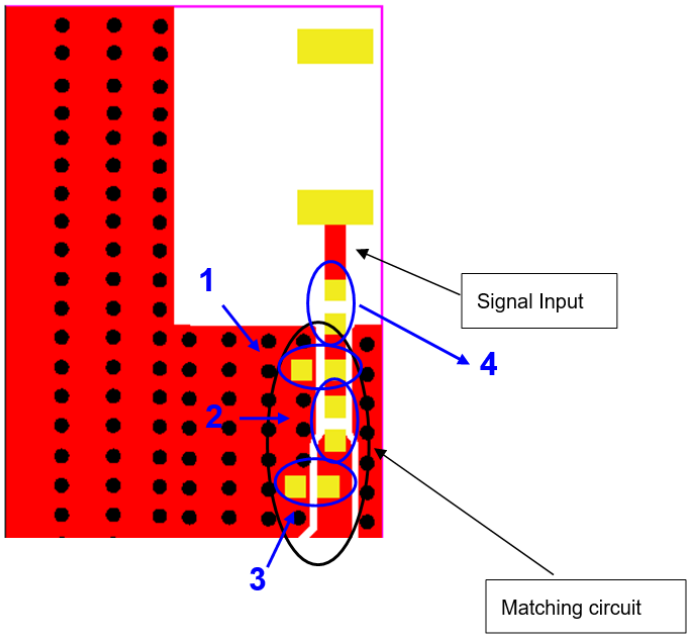




Frequency tuning and Matching circuit



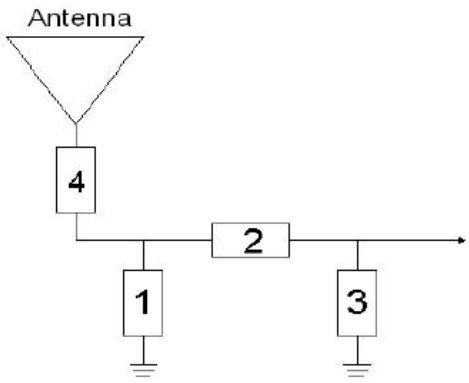
Chip antenna tuning scenario：



Matching circuit：

The center frequencies will be about 2442 MHz at our standard 40x40 mm evaluation board, with the following recommended values of matching and tuning components. *

* = These are typical reference values

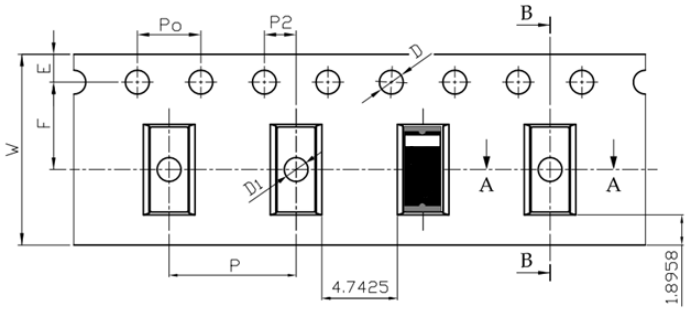


System Matching Circuit Component			
Location	Description	Tolerance	NIC Part Number
1	N/A	-	-
2	3.3nH, (0402)	±0.1nH	NMLQ04B3N3TRF
3	1.5pF, (0402)	±0.1pF	NMC-Q0402NPO1R5B50TRPF
4	0Ω, (0402)	5%	NRC04ZOTRF

Packing

(1) Quantity/Reel: 5000 pcs/Reel
(2) Plastic tape: Black conductive polystyrene.

a. Tape Drawing



b. Tape Dimensions (unit: mm)

Feature	Specifications	Tolerances
W	12.00	±0.30
P	8.00	±0.10
E	1.75	±0.10
F	5.50	±0.10
P2	2.00	±0.10
D	1.50	+0.10 -0.00
Po	4.00	±0.10
D1	1.50	±0.10
10Po	40.00	±0.20

Version History and Status

Version	Date Issued	Details	Status
A	Dec. 11th, 2020	**Initial Release**	Supported
B	Dec. 11th, 2020	**New Release:** Higher Gain, Efficiency and VSWR	Supported

Please reach out to NIC for any customization requests and other inquiries:

- NIC Technical Support: tpmg@niccomp.com
- Compliance Support: rohs@niccomp.com