

NFC Chip Antenna

AANI-CH-0029

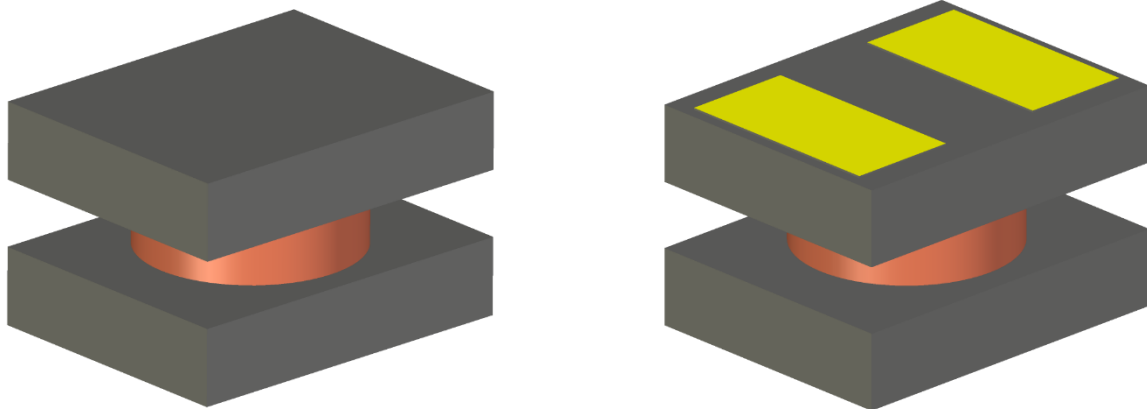
Features

- NFC 13.56MHz
- Small Form Factor 3.2 x 2.5 x2.0 mm
- RoHS Compliant

Applications

- Near Field Communication
- Pairing, Sharing
- Connection to RFID tags
- Payment, EMVCo
- Phones, Infotainment, POS terminals, Toys, Asset Tracking

Product Image



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Electrical Specification

Parameter	Specification			Unit
	Min	Typical	Max	
Operating Frequency		13.56		MHz
Bandwidth		1		MHz
VSWR (Typ.)		1.6		
Inductance		7		$\mu\text{H}@13.56\text{MHz}$
Q-Factor		11.3		
DC Resistance		52.75		$\Omega@13.56\text{MHz}$
Self-Resonance Frequency		61.13		MHz
Reading Distance		10~30		mm
Polarization		Linear		-
Impedance		50		Ω

Mechanical Specification

Parameter	Specification
Dimension	3.2 x 2.5 x 2.0 mm
Mounting Type	SMD
Weight	0.05g

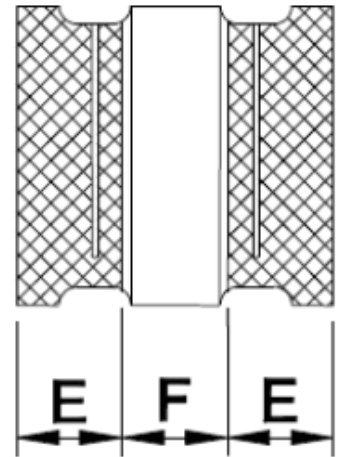
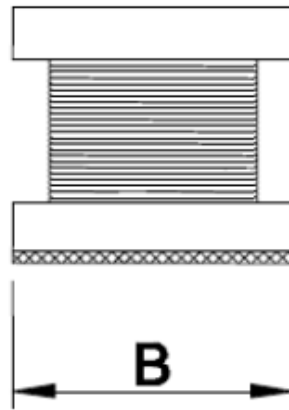
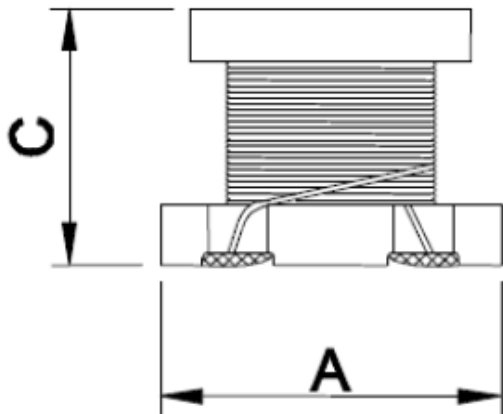
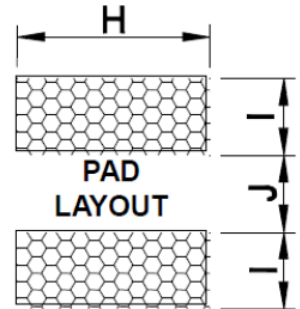
Environmental Specification

Parameter	Specification
Operating Temperature	-40°C to +105°C
Storage Temperature	-40°C to +85°C
Humidity	85% R.H.
RoHS Compliance	Yes

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Product Dimensions & Recommended Footprint (PCB Layout)



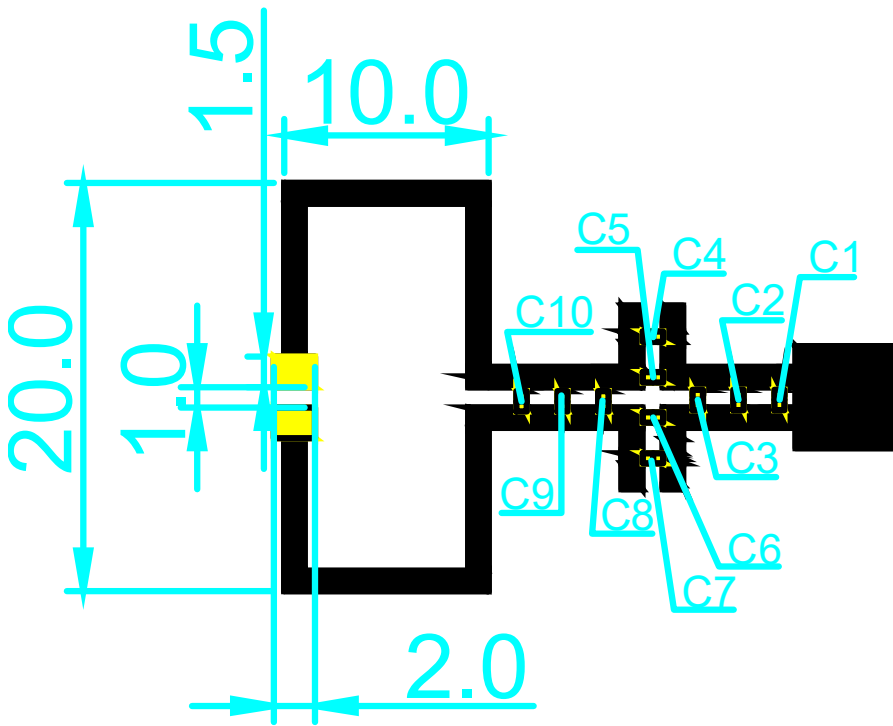
Unit: mm

A	3.2 +/- 0.3 mm	F	0.7 min
B	2.5 +/- 0.3 mm	H	2.0 mm
C	2.0 +/- 0.3 mm	I	1.5 mm
E	0.7 min	J	1.0 mm

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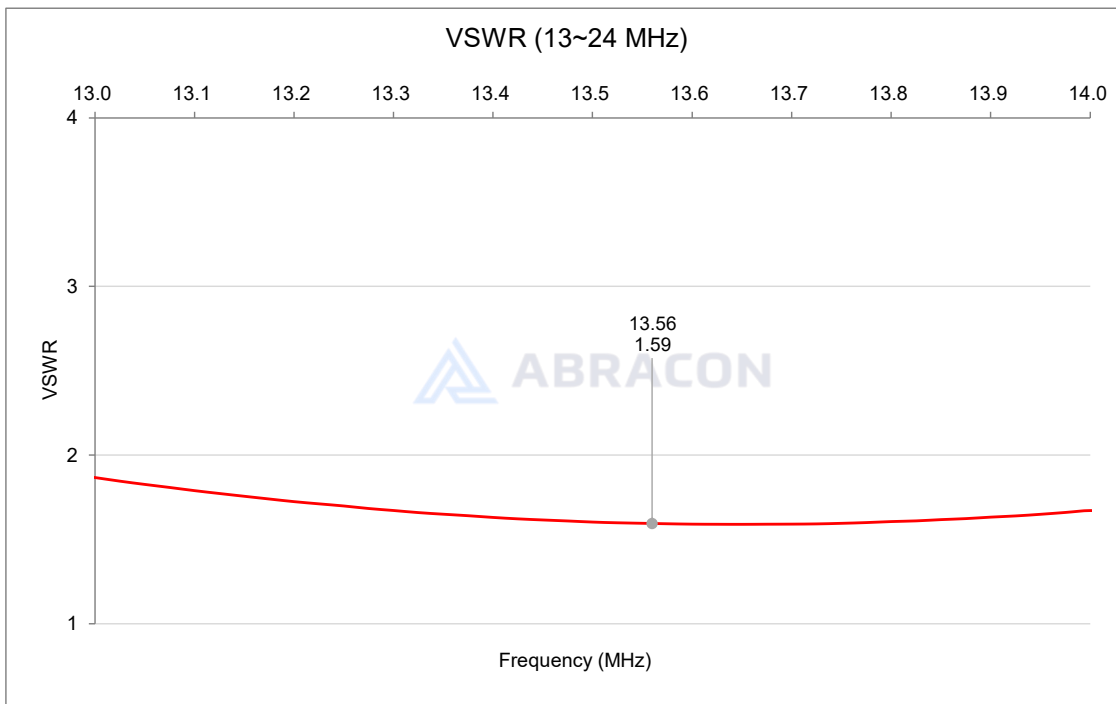
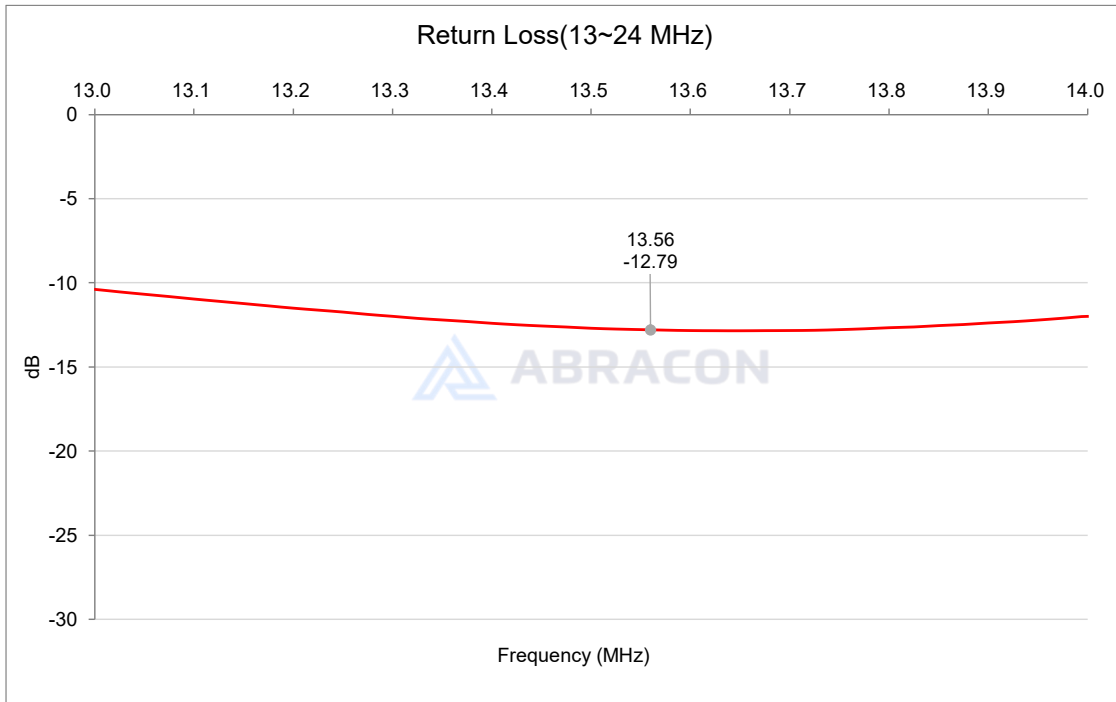
Matching Network



- C1 = NC
- C2 = NC
- C3 = NC
- C4 = NC
- C5 = 470pF
- C6 = 470pF
- C7 = NC
- C8 = 270nH
- C9 = 330pF
- C10 = 27pF

Unit: mm

Reflection Characteristics – Return Loss & VSWR



Reflow Profile [JEDEC J-STD-020]

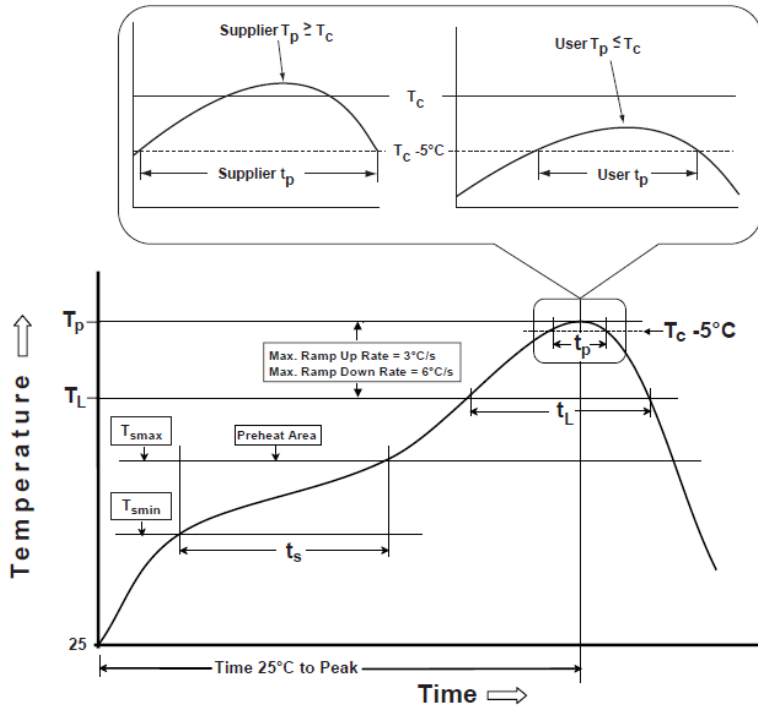


Table 1

SnPb Eutectic Process Classification Temperatures (T_c)		
Package Thickness	Volume mm ³ <350	Volume mm ³ ≥350
<2.5 mm	235 °C	220 °C
≥2.5 mm	220 °C	220 °C

Table 2

Pb-Free Process Classification Temperatures (T_c)			
Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
<1.6 mm	260 °C	260 °C	260 °C
1.6 mm - 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat / soak		
Temperature minimum (T_{smin})	100°C	150°C
Temperature maximum (T_{smax})	150°C	200°C
Time (T_{smin} to T_{smax}) (t_s)	60 - 120 sec.	60 - 120 sec.
Average ramp-up rate (T_{smax} to T_p)	3°C/sec. max	3°C/sec. max
Liquidous temperature (T_L)	183°C	217°C
Time at liquidous (t_L)	60 - 150 sec.	60 - 150 sec.
Peak package body temperature (T_p)*	see Table 1	see Table 2
Time (t_p)** within 5°C of the specified classification temperature (T_c)	20 sec.	30 sec.
Ramp-down rate (T_p to T_{smax})	6°C/sec. max	6°C/sec. max
Time 25°C to peak temperature	6 min. max	8 min. max
Reflow cycles	2 max	2 max

*Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

**Tolerance for time at peak profile temperature (t_p) is defined as supplier minimum and a user maximum.

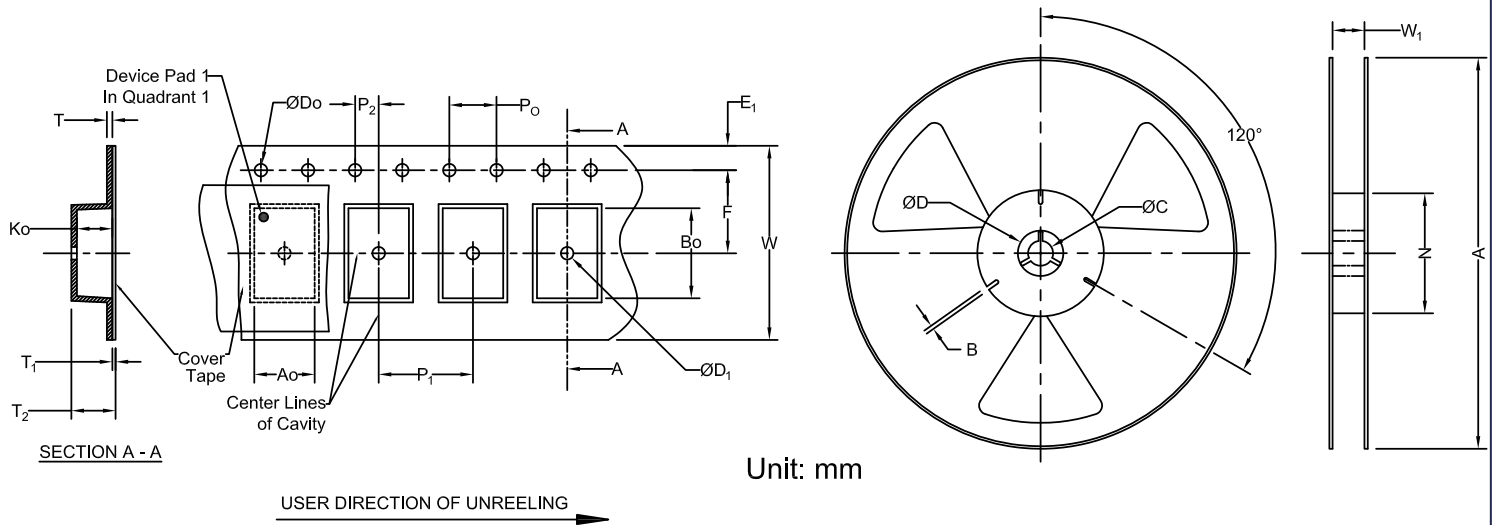
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Packaging

Tape & Reel

1. Tape & Reel Dimension



Carrier Tape Specifications (mm)

E1	D0	P0	P2	K0	P1	W	A0	B0	Reel Qty
1.75	1.5	4.0	2.0	2.25	8.0	12	2.85	3.60	3,000

Reel Specifications (mm)

A	W ₁	N
330	13	100

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