

NFC Chip Antenna

AANI-CH-0030

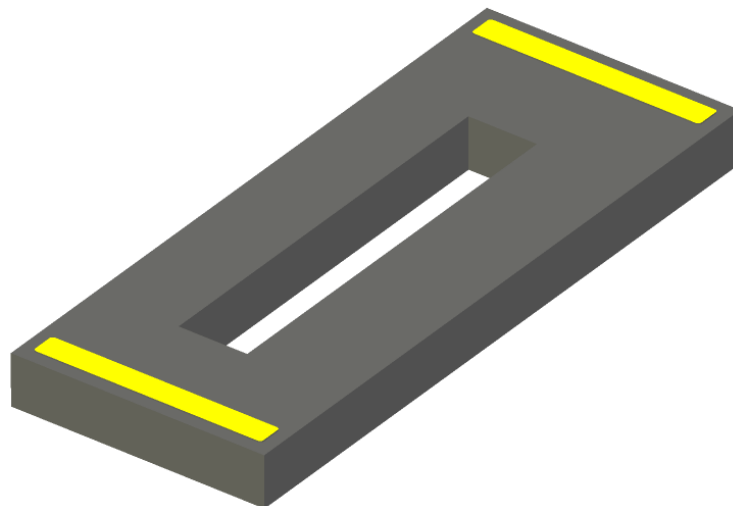
Features

- NFC 13.56MHz
- Small Form Factor 10 x 4 x 0.8 mm
- RoHS Compliant

Applications

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

Product Image



NFC Chip Antenna

AANI-CH-0030

Electrical Specification

Parameter	Specification			Unit
	Min	Typ	Max	
Operating Frequency		13.56		MHz
Bandwidth		1		MHz
VSWR (Typ.)		1.1		
Inductance		0.298		$\mu\text{H}@13.56\text{MHz}$
Q-Factor		15.7		
DC Resistance		1.62		$\Omega@13.56\text{MHz}$
Self-Resonance Frequency		375.78		MHz
Reading Distance		10~30		mm
Polarization		Linear		-
Impedance		50		Ω

Mechanical Specification

Parameter	Specification
Dimension	10 x 4 x 0.8 mm
Mounting Type	SMD
Weight	0.05 g

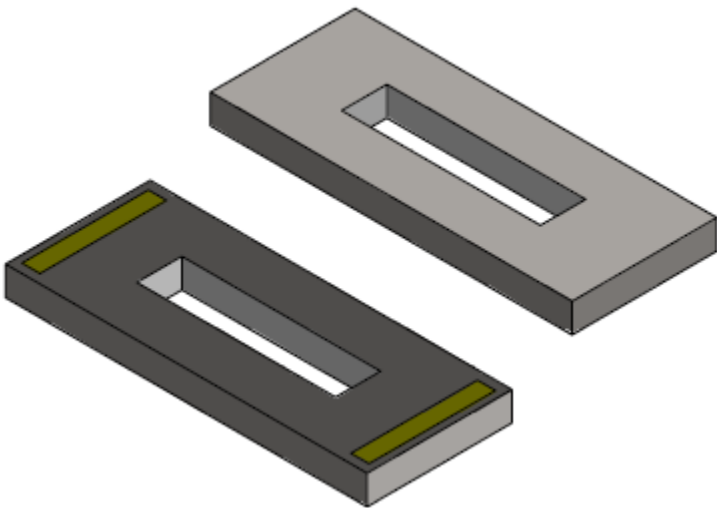
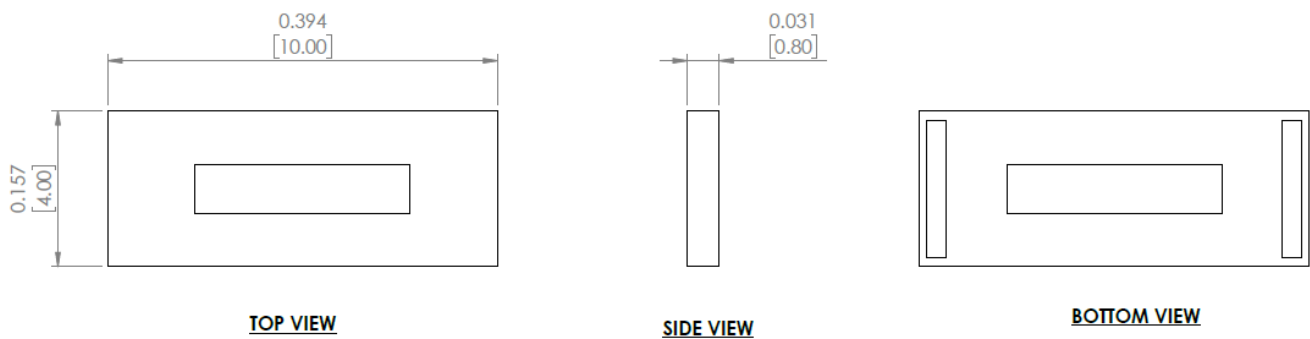
Environmental Specification

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

NFC Chip Antenna

AANI-CH-0030

Product Dimensions & Recommended Footprint (PCB Layout)

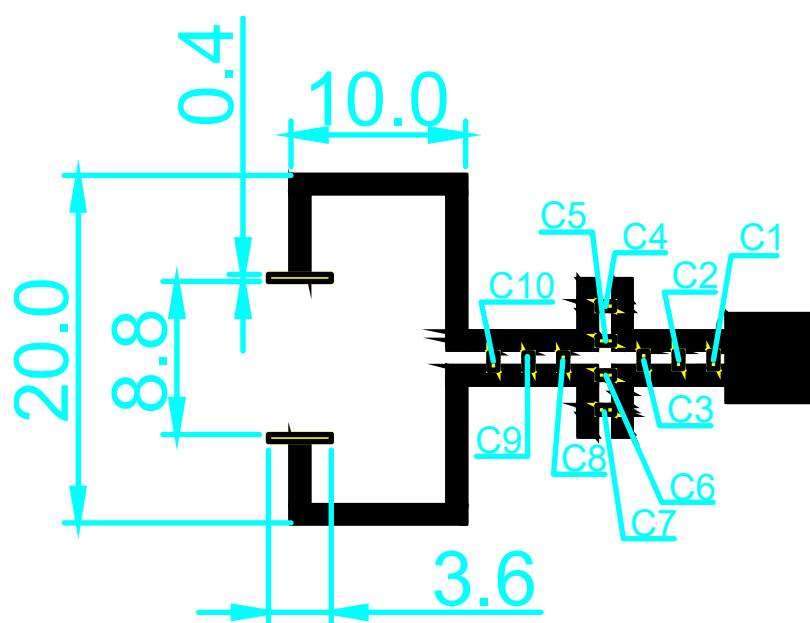


Unit: Inches [mm]

NFC Chip Antenna

AANI-CH-0030

Matching Network



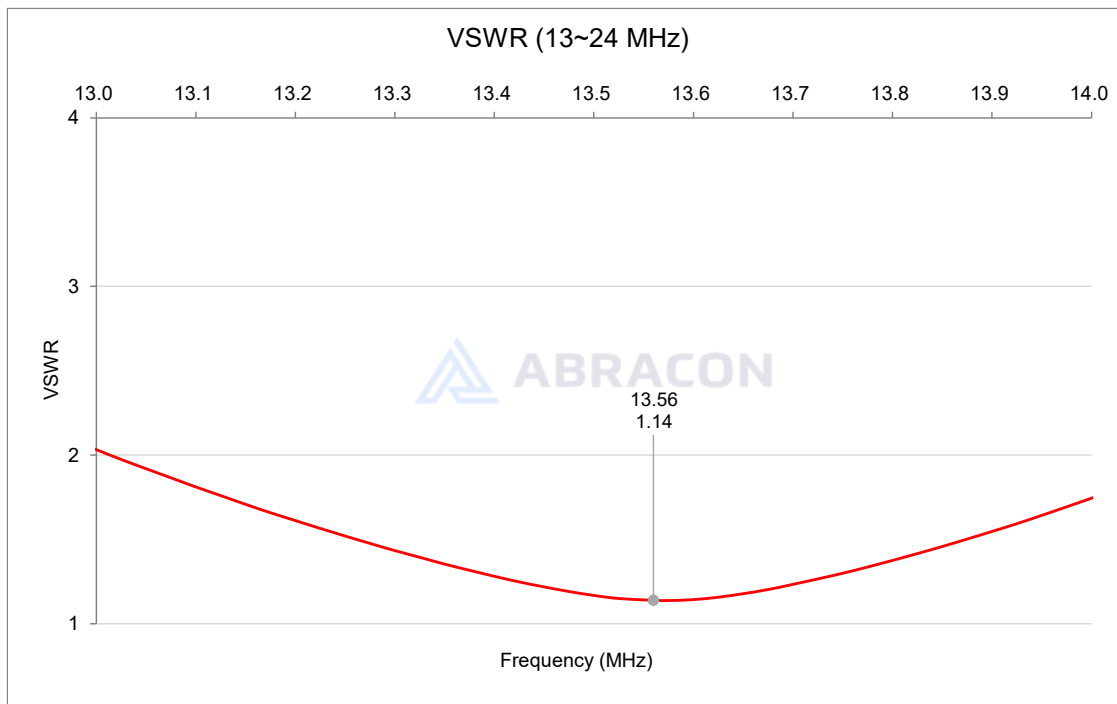
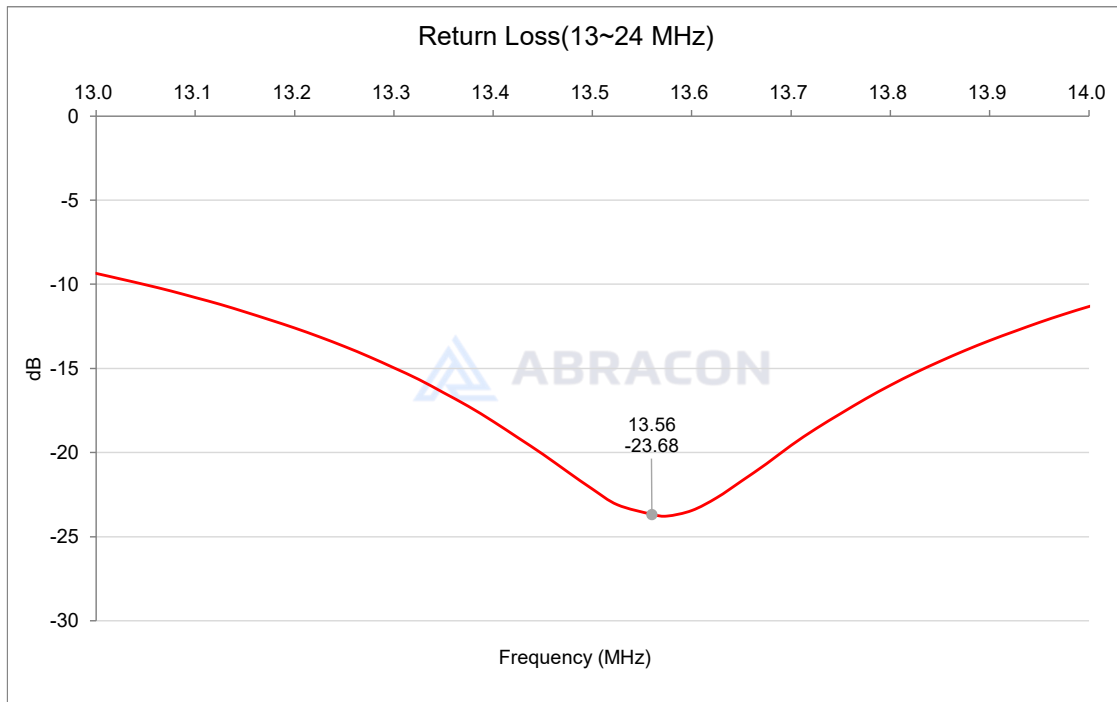
- C1 = 470pF
- C2 = 180pF
- C3 = NC
- C4 = NC
- C5 = 220nH
- C6 = 330pF
- C7 = 47pF
- C8 = NC
- C9 = NC
- C10 = NC

Unit: mm

NFC Chip Antenna

AANI-CH-0030

Reflection Characteristics – Return Loss & VSWR



NFC Chip Antenna

AANI-CH-0030

Reflow Profile [JEDEC J-STD-020]

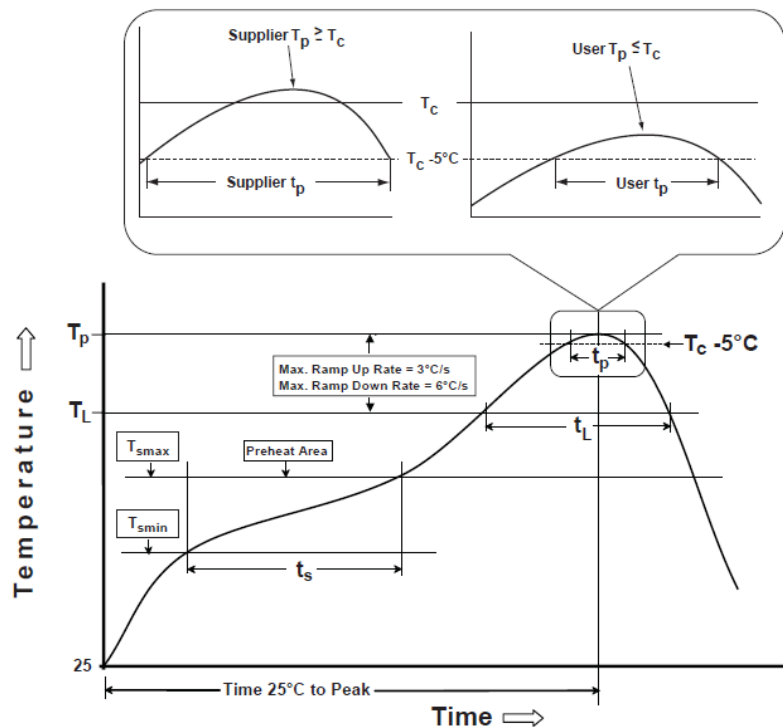


Table 1

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.

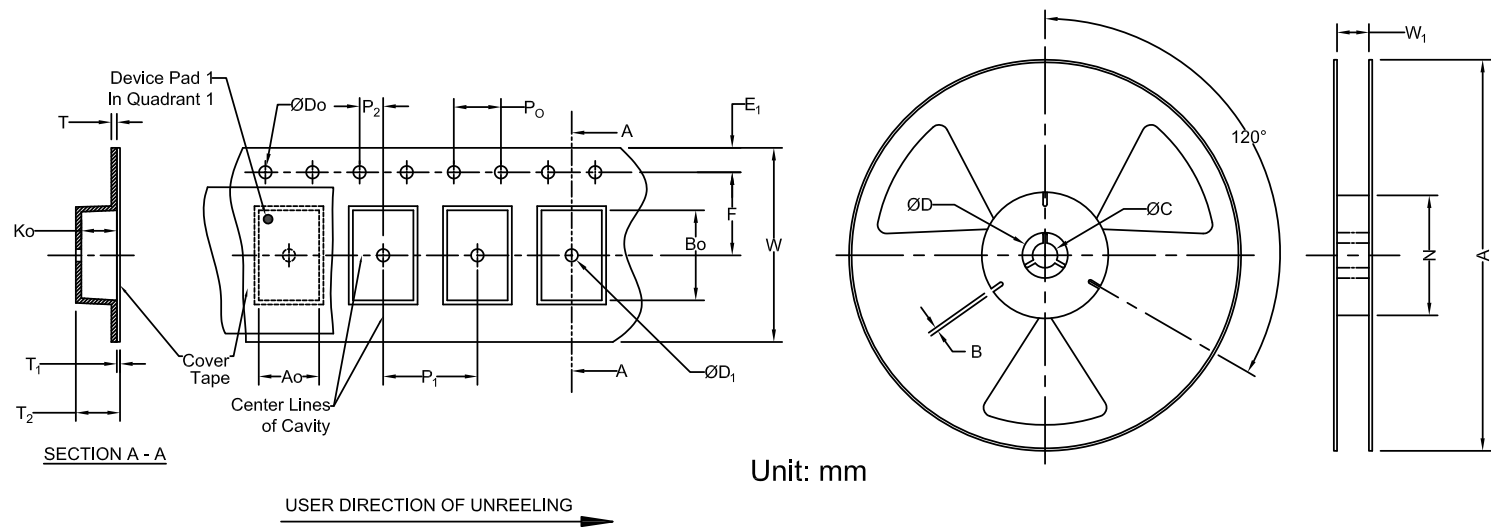
NFC Chip Antenna

AANI-CH-0030

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	1.3	8.0	16	4.3	10.3	2,000

Reel Specifications (mm)

A	W ₁	N
330	17	100

ATTENTION: Abracon LLC's products are COTS – Commercial-Off-The-Shelf products; suitable for Commercial, Industrial and, where designated, Automotive Applications. Abracon's products are not specifically designed for Military, Aviation, Aerospace, Life-dependent Medical applications or any application requiring high reliability where component failure could result in loss of life and/or property. For applications requiring high reliability and/or presenting an extreme operating environment, written consent and authorization from Abracon LLC is required. Please contact Abracon LLC for more information.



5101 Hidden Creek Ln Spicewood TX 78669
Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sales, please visit:
www.abracon.com

REVISED: 12-15-23

ABRACON IS
ISO9001-2015
CERTIFIED