NFC|RING
PRODUCT DATASHEET

Product Model: V1ntage

Product Code: NTAG203-V1-NORMAL-T-T-T

Updated: 07/01/2016

Approved by: John McLear

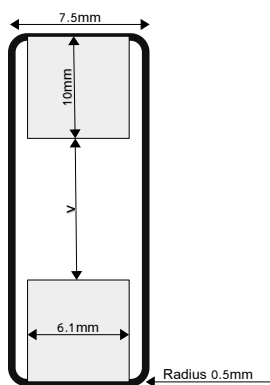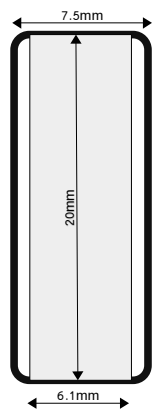# PHYSICAL CHARACTERISTICS

Ring Dimensions

V = Varies on Ring Size

Black = Ring Blank

Gray = Inlay / Antenna

Sides

7.5mm

10mm

v

6.1mm

Radius 0.5mm

Top

7.5mm

20mm

6.1mm

Front

v

v

2mm

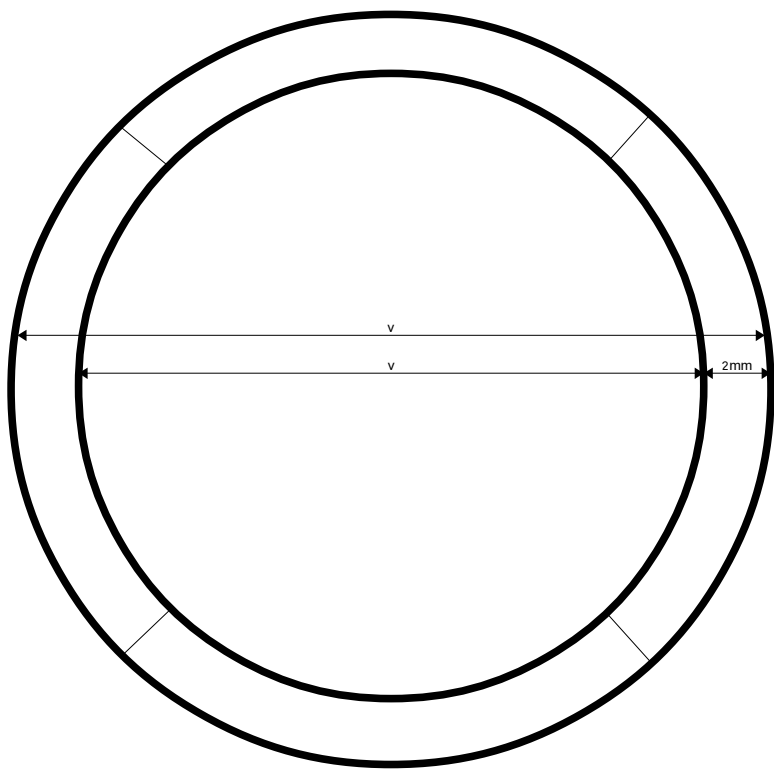## Available Sizes (United States Sizes)

4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8, 8.5, 9, 9.5, 10, 10.5, 11, 11.5, 12, 12.5, 13, 13.5, 14, 14.5, 15, 15.5, 16

Fit style

Comfort Fit: Soft Radius

Materials

Ring Blank: Hypoallergenic Titanium
Inlay cover: Hypoallergenic Epoxy

Colors

Blank: Silver Titanium
Top Inlay: Transparent
Bottom Inlay: Transparent
Inlay FPCB: Gold Yellow

Engraving

None

Antenna

2 of 20mm x 6mm Curved on FPCB (Flexible Printed Circuit Board)
Tin plated copper
NFC Ring Logo etched on FPCB

IC CHARACTERISTICS

Number of Ics(Integrated Components): 2
IC Manufacturer: NXP Semiconductors
IC Model: NTAG203
Full specifications: http://www.nxp.com/documents/short_data_sheet/NTAG203_SDS.pdf
Operating Frequency: 13.56Mhz
ISO/IEC: 14443A
User writable space: 144 bytes
Data retention: 5 years
Write endurance: 10,000
IC Type: Sawn Wafer
IC Mount Type: Wire bonded w/ glue

Security

Anti-cloning support by unique 7-byte serial number for each device.
32-bit user programmable OTP(One Time Programmable) area.
Field programmable read-only locking function per page for first 512 bits.
Read-only locking per block for rest of memory.

OPERATING LIMITATIONS

Forces

Can withstand drops onto all surfaces from 5M

Temperatures

Overall recommended temperature maximum exposures:

      Min: -20c
      Max: 110c

IC Limitation:
      Min: -55c
      Max: 70c (note that the IC is protected by Epoxy and a heat resistant glue)

Epoxy Limitation:
      Min: -20c
      Max: 110c

Blank Limitation:
      Min: -85c
      Max: 1668c

Water resistance

IP66
      Protected from Total dust ingress
      Protected from high pressure washer jets from any direction

PATENTS AND LEGAL

Patents:

US 2015/0042450-A1: Covers:

Inserting NFC inlays in a Ring Embodiment (Both metallic and ceramic)
Using Hand Gestures to perform different tasks with a Ring including unlocking a phone and sharing contact information
Interacting between a Ring and an access control system

Current Licensees:
Visa Collab Inc
Mastercard Inc
DangerousThings Inc

Trademarks:

"NFC Ring" is a registered Trademark of McLear Ltd

BEHAVIORAL CHARACTERISTICS

Operating Range

Keyduino Nano: 4mm
Elechouse PN532: 3mm
Samsung SHS-1321: 2mm
Nexus 5: 2mm
ACR122: 1mm
HTC One M8: 1mm