

MBT-0503A1P1F

Data Sheet

ICODE SLIX, based on ISO/IEC 15693, compatible with NFC Forum Type 5

Feature

- Tiny size (4.9 x 3.0 x 2.4 mm), suitable for narrow space
- ISO/IEC 15693 and ISO/IEC 18000-3, compatible with NFC Forum Type 5
- Operating frequency of 13.56MHz
- Using IC of NXP ICODE SLIX with 1024 bits user memory
- SMD type for printed circuit board design
- Superior communication distance even on metal
- High reliability and high heat resistance

Applications

- Bluetooth or Wi-Fi pairing
- Connection handover
- Product authentication
- Goods and device authentication
- Call to action
- Usage count
- Shipment and maintenance record

General description

NFC Ferrite Tag, MBT-0503, is developed as a standard NFC tag and targeted for Internet of Things data transmission applications such as consumer electronics, wearable devices, and smart healthcare products. MBT-0503A1P1F is operated at 13.56MHz, High Frequency (HF) RFID standards, and designed to be compatible with NFC Forum Type 5 based on ISO/IEC 15693 standards with IC of ICODE SLIX.

MBT-0503 is a space-saving solution for contactless detection and data transmission. It's small, light, thin, and suitable for narrow space application. Also, it can be provided as surface-mounted type if requested.

Owing to the ferrite material with anti-metallic interference characteristics, MBT-0503 is able to function when placed on metal products. So it can be embedded on metal parts or into electronic devices more easily.

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1 Specifications

Electrical Specification	
Integrated Circuit (IC)	NXP ICODE SLIX
NFC Forum Platform	Compatible with NFC Forum Type 5
Communication Standard	ISO/IEC 15693 and ISO/IEC 18000-3
Operating Frequency	13.56 MHz
EEPROM Memory	1024 bits
General Specification	
Product Size	4.9 x 3.0 x 2.4mm
Tolerance	+/- 0.2mm
Operating Temperature	-40°C to +85°C〔1〕
Storage Temperature	-40°C to +85°C〔2〕
Shelf Life	1 year at 5~35°C, <75% RH

〔1〕 IC operating temperature.

〔2〕 IC storage temperature.

2 Block diagram

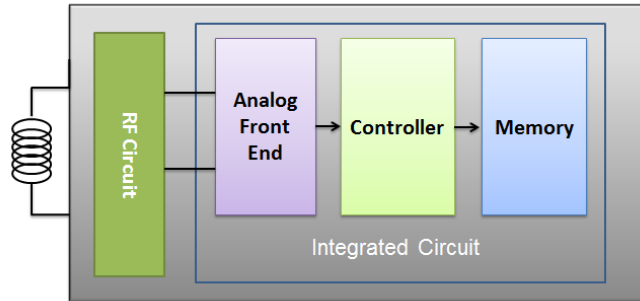


Figure 1. MBT-0503 block diagram illustration

3 Layout and dimensions

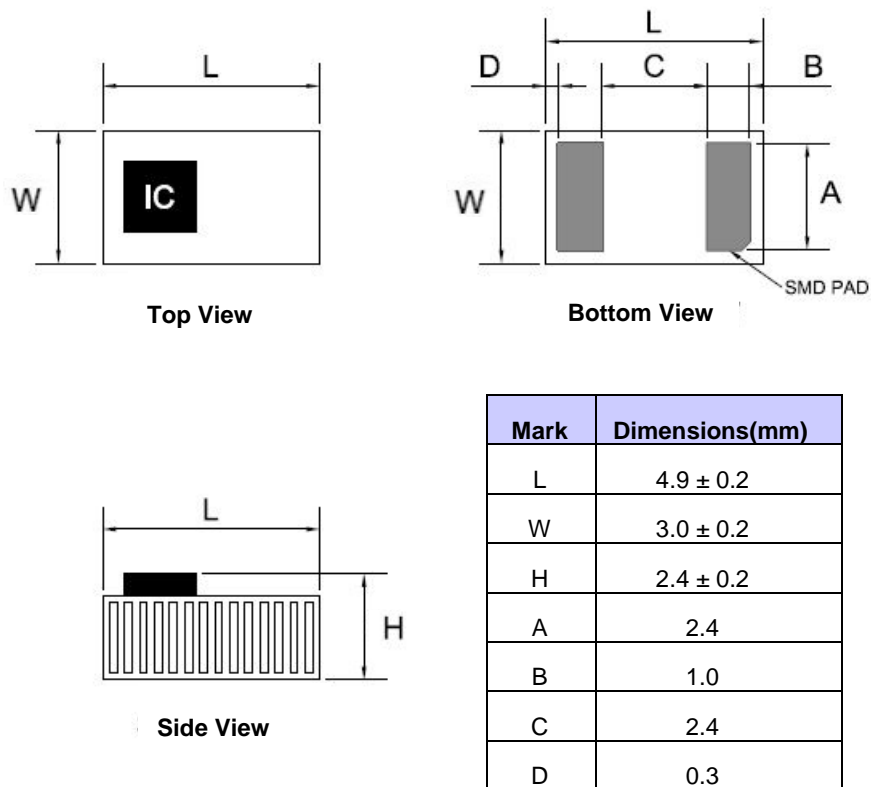


Figure 2. Layout and dimensions of MBT-0503

4 Care and handling of this product

1. This product is a component of sintered ferrite, thus excessive pressure or shock may damage its body. Take care during transportation and handling. If the product is damaged or chipped, its performance will drop or completely lost.
2. Try to prevent warping of PCB when using because this product may be broken or cracked. Otherwise, place the product in a location not subject to the stress associated with the warping.
3. When the PCB embedded this product is cleaned by ultrasonic cleaner, the PCB may resonate and the product can be broken if the output is too high. When using water or water-based solvent at cleaning, any remaining moisture may cause the insulation to deteriorate.
4. After attaching this product on PCB, high-temperature heating may lower its quality and performance when removing it. Pay attention to reusing this product.
5. Store this product in sealed with a moisture barrier and anti-static bag. Shelf life in a sealed moisture barrier bag is 1 year at 5~35°C and <75% relative humidity (RH).
6. Put on mask and gloves when testing this product.

5 Quality

This product is compliant with RoHS directive.

6 Technical support

If you are unsure how to use this product, please email Technical Support: jun_koujima@todakogyo.co.jp

7 Notice

Toda Kogyo Corp. reserves the right to make changes to the information in this document at any time without notice. This document supersedes and replaces all information supplied prior to the publication hereof.

8 Warranty and service

The warranty depends on the contract by demands. If you need any other advanced services, please email at jun_koujima@todakogyo.co.jp