

AD Circus™ NFC ST25TN

Overview

Frequency Band
NFC 13.56 MHz

Chip
ST25TN512
ST25TN01K

Antenna Dimensions
Ø 20 mm / 0.79 in

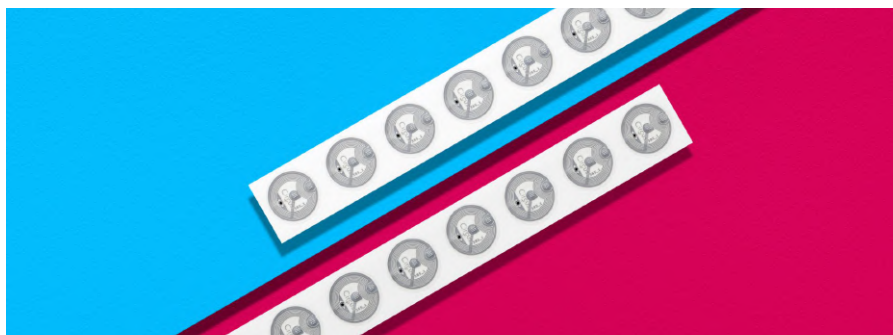
International Standard
ISO 14443A

Industry Segments
Electronics
Beauty
Apparel
Healthcare

Applications
NFC
Customer Experience
Packaging

RoHS
EU Directive 2011/65/EC and
Directive (EU) 2015/863

REACH
Regulation (EC) No 1907/2006



Smallest round HF inlay with best-in-class performance

Our AD Circus™ NFC ST25TN inlays and tags are designed to suit applications where small size and high performance are critical. These round-form products are ideal for use in electronics, healthcare, beauty and apparel.

Our AD Circus™ NFC ST25TN equipped with ST Microelectronics ST25TN512 and ST25TN01K chip is based on an aluminum antenna and offers high reliability and great performance. AD Circus™ NFC ST25TN with the ST25TN512 chip is a cost-efficient solution where user memory of 64 bytes is required.

If a small form factor with large user memory is needed, then AD Circus™ NFCST25TN with ST25TN01K chip is the product of choice. It offers up to 208 bytes of user memory. Both chip options support augmented NDEF to answer dynamic NDEF message without modifying the user memory and TruST25 Digital Signature to fight against counterfeiting.

The product is ISO 14 443A and NFC Forum Type 2 compliant. Our inlays and tags are compliant with ISO 9001:2015 Quality Management and ISO 14001:2015 Environmental Management. This ensures a reliable and state-of-the-art product that meets a variety of application needs.

Technical features

Chip	ST25TN512	ST25TN01K
Chip Attachment Technology	Direct Chip Attach	Direct Chip Attach
User Memory	64 bytes	160 bytes
Product Code	3008826 / IL-604622	3008834 / IL-604626
Delivery Format	Wet+ inlay	Wet+ inlay
Die-Cut Dimension	Ø 22 mm / 0.866 in	Ø 22 mm / 0.866 in
Inlay Substrate	PET	PET
Face Sheet	Clear PET	Clear PET
Total Thickness	136 µm	136 µm
Standard Pitch	27 mm / 1 in	27 mm / 1 in
Web Width	27 mm / 1 in	27 mm / 1 in
Core Size	76 mm / 3 in	76 mm / 3 in
Quantity / Reel	5000 pcs/reel 20000 pcs/box	5000 pcs/reel 20000 pcs/box
Operating Temperature	-40 °C to 85 °C / -40 °F to 185 °F	

Contact information

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Connect with us on:



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Warranty: Please refer to Avery Dennison standard terms and conditions: rfid.averydennison.com/termsandconditions

Care and handling: RFID inlays are sensitive to ESD. Observe standard industry practices relating to electronics / RFID to keep environmental impact and static charge to a minimum.

Applications: This product should be tested by the customer / user thoroughly under end use conditions to ensure the product meets the particular requirements. Avery Dennison does not represent that this product is fit for any particular purpose or use. Avery Dennison reserves the right to modify, change, supplement or discontinue product offerings at any time without notice. The information contained herein is believed to be reliable but Avery Dennison makes no representation concerning the accuracy or correctness of the data.

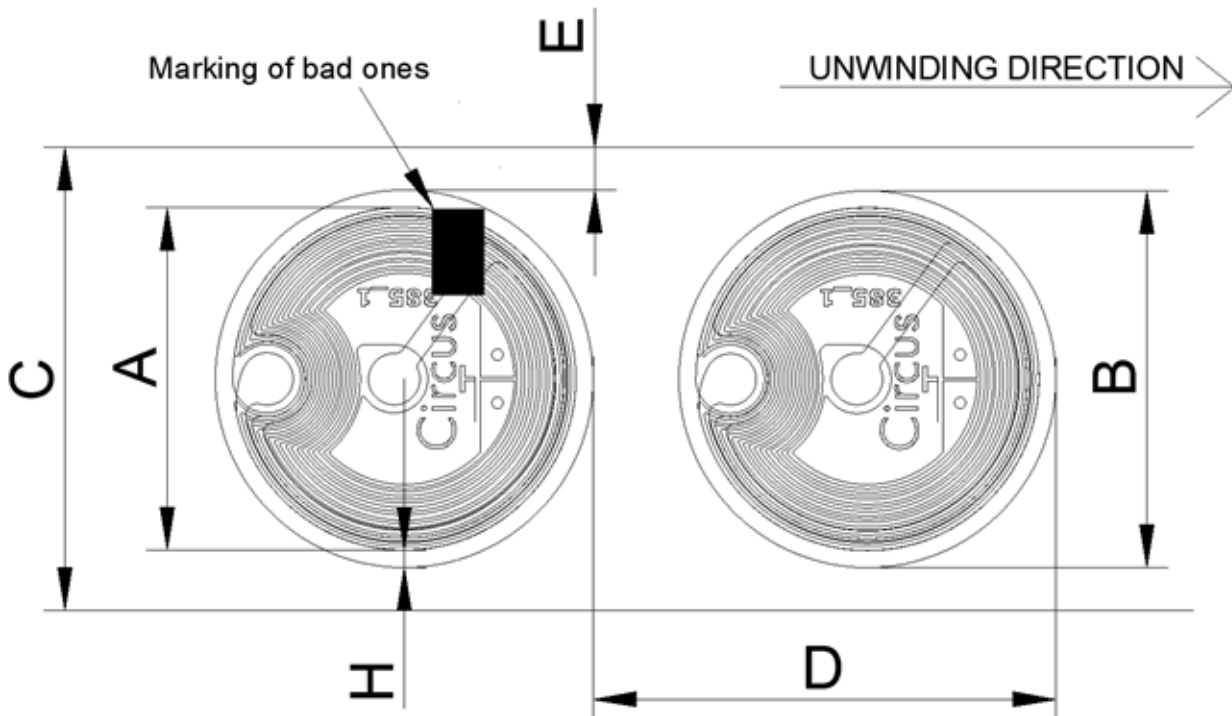


Circus NFC Wet Inlay +
ISO 14 443 A
STM ST25TN512
Sales Code 3008826

Item Code : IL-604622

Mechanical dimensions

A	Antenna size	20 mm	± 0,5 mm	0.787 in
B	Die-cut size	22 mm	± 0,2 mm	0.866 in
C	Web width	27 mm	± 0,5 mm	1.063 in
D	Pitch, length per piece MD	27 mm	± 1,5 mm	1.063 in
E	Die-cut to web edge	2.5 mm	± 1,5 mm	0.098 in
H	Antenna to die-cut (CD)	1 mm	± 1,0 mm	0.039 in
	Overall thickness of the transponder package (excluding IC and siliconized paper)	136 µm	± 10 %	
	Thickness of the siliconized paper	56 µm	± 5 %	
	Thickness of the IC	120 µm		


Electrical characteristics

Integrated Circuit (IC)	STM ST25TN512
Air interface protocol	ISO 14 443 A
Operation frequency	13,56 MHz
Unloaded resonance frequency	TBD
Memory	64 bytes

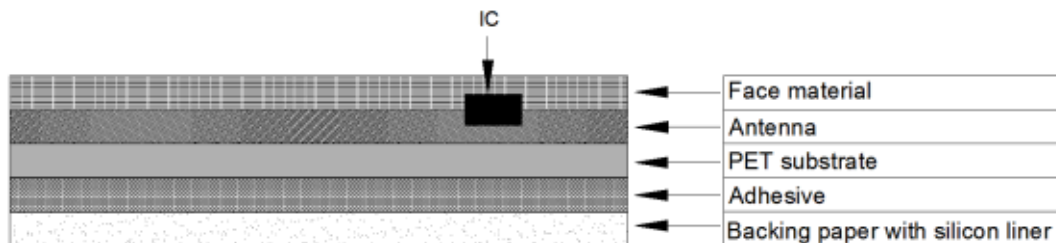
General characteristics of transponder

Operating temperature (electronics parts)	-40 °C / +85 °C	-40 °F / 185 °F
ESD voltage immunity	± 2 kV peak HBM	
Shelf life: From the date of manufacture 2 years in	+20 °C, 50 % RH	68 °F, 50 % RH
Bending diameter (D)	> 50 mm, tension less than 10 N	

Delivery form

Transponder format	Die-cut	
Transponder face material	Clear PET 12	
Transponder backing material	Siliconized Paper 56	
Transponder antenna, antenna carrier	Aluminum, clear PET	
Transponder adhesive	RA-5	
- labelling temperature	min. +0 °C	min. 32 °F
- usage temperature	-20 °C - 80 °C	-4 °F - 176 °F
- peel	min. 10 N / 25 mm (FTM 1)	
Final inspection	100 %, known faulty ones marked	
Minimum delivery yield	97 %	
Reel Label	Reel number, Material number, Material description, Yield, Qty of functional inlays, Qty of non-functional inlays, Date	
Printability	Needs to be tested by customer	

Structure



Delivery details

Appearance	Single row reel form
Reel core	Paper core inner diameter 76 mm (3 in)
Transponder alignment	Chip in front of transponder
Winding of the reel	Face out
Reel size	5 000 pcs/reel
Package size	20 000 pcs/box Deliveries only in full packages.

Disclaimer:

SMARTRAC reserves the right to change its products and services at any time without notice. Our recommendations are based on our best knowledge and experience. As the products are used outside our control we cannot take responsibility for any damage that may be caused when using the product. Use extra care in handling the product.

This technical specification replaces all earlier ones.

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