Product Specification

SMARTRAC

SI-SPK-40A-01.1

Smart Label Inlay

HF Inlay H144 TiPls 76x45

Features

- ISO/IEC 15693-2, -3; ISO/IEC 18000-3 Compliant
- 13,56-MHz Operating Frequency
- 2048-Bit User Memory in 64 blocks × 32-Bit
- User Lock Per Block
- Application Family Identifier (AFI)
- Data Storage Format Identifier (DSFID)

Applications

- Product Authentication
- Library
- Supply-Chain Management
- Asset Management
- Ticketing/Stored Value

Description

SMARTRAC transponder inlays consist of 13.56-MHz high-frequency (HF) transponders that are compliant with the ISO/IEC 15693 and ISO/IEC 18000-3 global open standards.
These products offer a user-accessible memory of 2048 bits, organized in 64 blocks.

The SMARTRAC transponder inlays are well suited for a variety of applications including, but not limited to, product authentication, library, supply-chain management, and ticketing/stored value applications.

This inlay is considered to replace TI-inlay
RI-I02-112A-03 Tag-it(TM) HF-I Plus Transponder Inlays Large Rectangle
and
RI-I02-112B-03 Tag-it(TM) HF-I Plus Transponder Inlays Large Rectangle

with the following technical parameters as described below.

Pin Configuration and Functions

According to IC specification: Tag-it HF-I Plus Transponder IC (TMS37112)

Go/NoGo-Test

All inlays are tested inline in the machine by a Go/NoGo-Test. There is no functional test of the whole memory of the chip applied. All inlays, who fail the Go/NoGo-Test will be marked with a black inkdot as shown on the last page.

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Smart Label Inlay

HF Inlay H144 TiPIs 76x45

Specifications

	PART NUMBER HF Inlay H144 TIPIs 76x45
Integrated Circuit (IC)	Tag-it™ HF-I Transponder IC TMS37112
Supported standard	ISO/IEC 15693-2, -3; ISO/IEC 18000-3
Recommended operation frequency	13,56 MHz
Passive resonance frequency (at 25°C)	14,1 MHz ± 0,4 MHz
Factory-programmed read-only number	64 bits
Memory (user programmable)	2k bits organized in 64 blocks × 32-Bit
Typical programming cycles (at 25°C)	100,000
Data retention time (at 55°C)	>10 years
Simultaneous identification of tags	Up to 50 tags per second (reader/antenna dependent)
Antenna size	45 mm × 76 mm (~ 1,77 in × ~ 2,99 in)
Foil width	48 mm ± 0,5 mm (1,89 in ± 0,02 in)
Foil pitch	96 mm + 0,1 mm / - 0,4 mm (~ 3,78 in)
Thickness	Chip area: 0,343 mm ± 0,1 Antenna area (Al both sides): 0,078 mm ± 0,01 Antenna area (Al one side): 0,068 mm ± 0,008
Base material	Substrate: PET (polyethylenetherephtalate); Antenna: aluminium
Smallest bending radius allowed Bending diameter	18 mm (~ 0,71 in) ≥ 50mm, tension less then 10N
Operating temperature	–20°C to 70°C
Storage temperature (single inlay)	–40°C to 85°C (warpage may occur at upper temperature range)
Storage temperature (on reel)	–40°C to 40°C
Shear Force on Chip	≥ 2,8 N
Delivery	Single-row tape wound on cardboard reel with 340-mm diameter Reel outer width: approximately 70 mm (about 2,75 in) Reel inner width: approximately 60 mm (about 2,36 in) Hub diameter: 76,2 mm (3 in)
Typical quantity of good units per reel	5000 Inlay roll contains No chipless leader and trailer. Rolls start and end with functional inlays

Electrostatic Discharge Caution

These devices have limited built-in ESD protection. The leads should be shorted together or the device placed in conductive foam during storage or handling to prevent electrostatic damage to the MOS gates.
A high current density of an electrostatic discharge from the foil can damage the chip (IC). Therefore, it is recommended to use ionizer or antistatic rollers in the manufacturing process. Any conductive parts in touch with Tag-it HF-I Plus Inlays should have a high-impedance discharge to ground. We recommend approximately 1 MΩ to avoid ESD damage.

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Packaging and Label

The products are packed very carefully in order to protect them from moisture absorption, ESD impact and damages during their handling, storage and transportation.

Single-row tape with cardboard reel 	**Label Position**
Package in ESD foil 	**Cardboard Packing Box**

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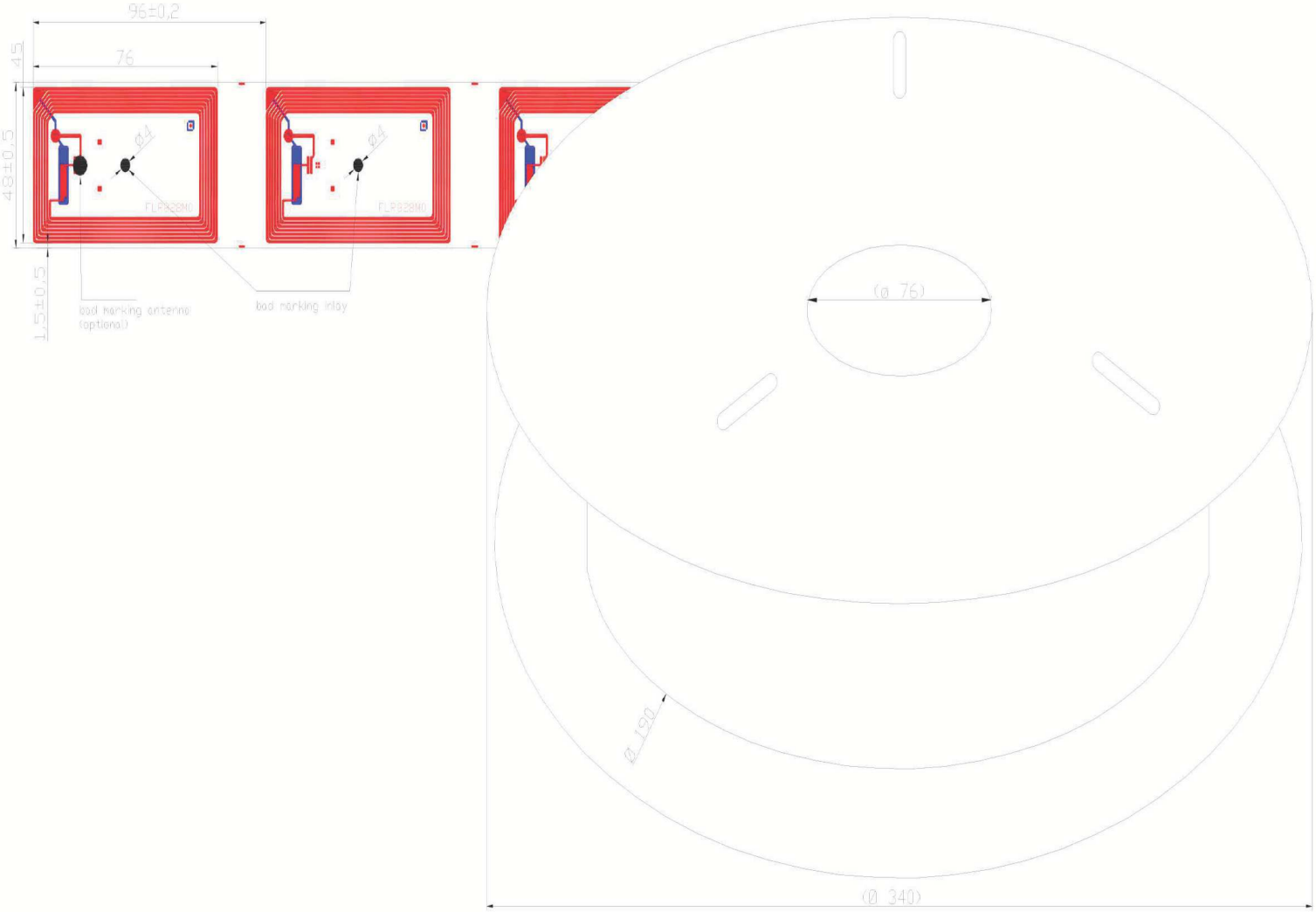

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application area	allowance	surface	scale 1:1	mass
	tolerance ± 0.2		material, semifinished part: 30µm Al (coil) / Adh. / 38µm Pet/ Adh. / 10µm Al (bridge)	

	date	name
Drawn	02.12.2015	R. Henschel
Checked		L. Klemm
Checked		C. Schön
Confirmed		

description: FLR828M0 H144 delivery form Ø190mm core

status	changes	date	name
V01.2	change cardboard	02.12.15	henschel
V01.1	initial release	20.10.15	henschel

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drawing number: P300-15.213.021-V01.2

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