



复旦微电子

# ***FM13HF02T*** ***HF RFID IC based on*** ***ISO/IEC 15693***

**Datasheet**

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**Apr.2014**



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# 1 Product Overview

## 1.1 Introduction

FM13HF02T is primarily designed for intelligent label applications such as libraries, product authentication in different industries such as pharmaceutical, medical devices and alcohol, as well as production management in different areas of the industry. This IC is the Second generation of a product family of smart label ICs based on the ISO standards ISO/IEC 15693 and ISO/IEC 18000-3 which has enhanced RF performance and reliability of EEPROM. Please consult Fudan Micro Electronics Company for more documents.

## 1.2 Features

### 1.2.1 RF Interface

- ISO/IEC 15693
- Contactless transmission of data and supply energy (no battery needed)
- Operating distance: up to 1.5 m (depending on various parameters as e.g. field strength and antenna geometry)
- Operating frequency: 13.56 MHz
- Fast data transfer: 26 Kbit/s
- High data integrity: 16-bit CRC, framing
- True anticollision
- Application Family Identifier (AFI)
- Data Storage Format Identifier (DSFID)
- Write 2 Block is supported

### 1.2.2 EEPROM

- 2k bits of total memory, divided in 64 blocks (4 bytes each)
- Data retention of 50 years
- Write endurance 100000 cycles

### 1.2.3 Security

- Unique identifier for each device, UID is unchangeable.
- Lock mechanism for each user memory block (write protection)
- Lock mechanism for DSFID, AFI, EAS

### 1.2.4 Applications

- Libraries
- Item level tagging in pharmaceutical supply chains
- Counterfeit protection for consumer goods
- Industrial applications

- Asset and document tracking

## 1.3 Block diagram

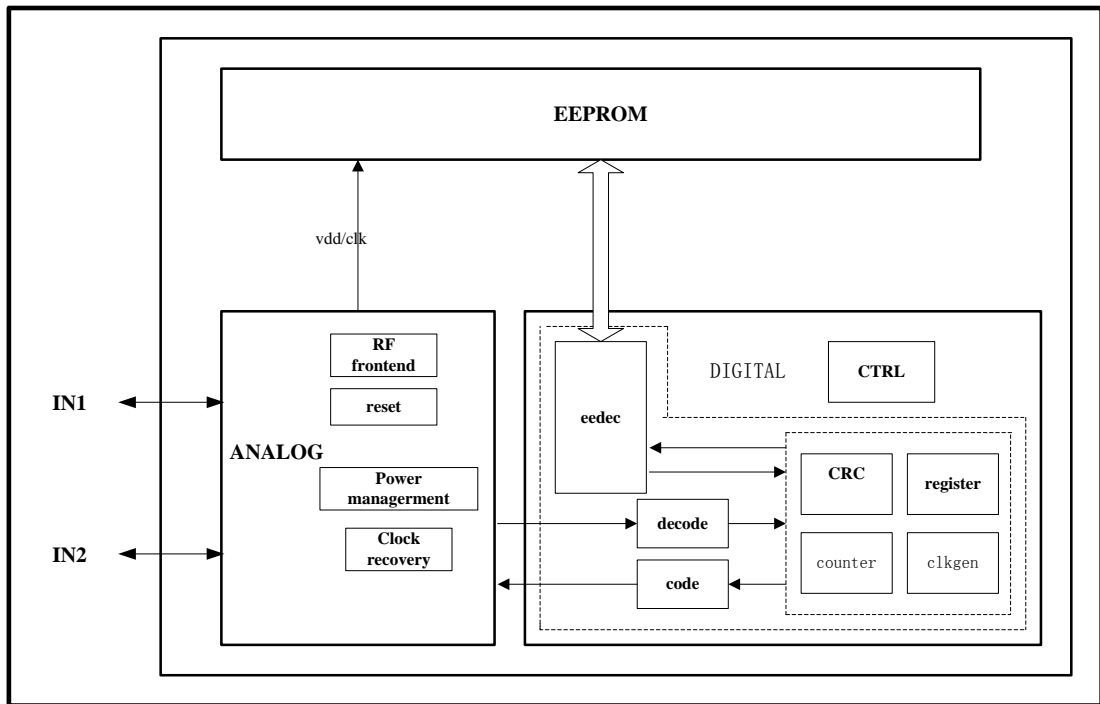


Figure 1-1 FM13HF02T Block diagram



## 2 Ordering information

Type Number	Wafer Type	Description
FM13HF02T-WIB	Bump Sawn Wafer	8 inch bump wafer (sawn, laser diced; 150 um thickness, without UV exposure, on film frame carrier; electronic fail die marking according to SECSII format)
FM13HF02T-WIBU	Bump Sawn Wafer	8 inch bump wafer (sawn, laser diced; 150 um thickness, UV exposure, on film frame carrier; electronic fail die marking according to SECSII format)
FM13HF02T-WIS	Sawn Wafer	8 inch wafer (sawn, laser diced; 150 um thickness, on film frame carrier; electronic fail die marking according to SECSII format)

	<u>FM</u>	<u>13HF</u>	<u>02</u>	<u>T</u>	<u>XXX</u>
Company Name					
FM=Shanghai Fudan Microelectronics Group Company Limited					
Product Family Name					
13HF= High frequency RFID chip based on ISO/IEC 15693					
Memory					
02= about 2K bit EEPROM					
Product Type					
Wafer Type					
WIS= Sawn Wafer					
WIB= Bump Wafer without UV exposure					
WIBU= Bump Wafer with UV exposure					



## Revision history

Version	Publication date	Pages	Paragraph or Illustration	Revise Description
1.0	Apr.2014	8		Initial release



# Sales and Service

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