



“ Mifare 1Kbyte  
contactless Smartcard  
(RFID) MF1 IC S50 ”

### Features :

- ▶ Catalog and register of books, magazines, project reports, journals.
- ▶ Operating distance upto 100mm – depends more on reader.(If readers provides maximum power output as per the ISO 14443-2 RF output power level).
- ▶ Operating frequency : 13.56 MHz (For ISO Compliance)
- ▶ Data Transfer 106 Kbits/s
- ▶ Anti collision fuction (Compliance to ISO 14443 – 2 and 3). If 2 or more cards are brought within the read range of the reader, then the anti collision feature reads one and puts others on hold without mixing the data.
- ▶ Endurance : 1,00,000 Write Cycles
- ▶ Unique Serial No. on each card (Manufacturer’s No.). It’s stored in a protected sector 0 which is read only. (Called MSN or CSN)

### TECHNICAL SPECIFICATIONS OF EEPROM (The Chip)

- ▶ 16 sectors with 4 Blocks 16 Bytes each.
- ▶ Each block consists of 16 Bytes. Total 4 Kbyte is mapped as :  
 $16 * 4 * 16 = 1024$  Bytes (1 Kbyte)
- ▶ Data retention 10 Years

### Security

- ▶ Three Pass authentication
- ▶ Individual Key per sector
- ▶ Transport Key to protect chip access on delivery
- ▶ Last Block of each sector is “Sector Trailer” that contains 2 secret keys and access conditions for each sector

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## General Features

- ▶ Memory : 1 Kbyte EEPROM, read/write
- ▶ Card : Thin, flexible polyvinyl chloride (PVC) laminate
- ▶ Finish : Gloss or Matte
- ▶ Operating Temperature : 13° F to 158° F (-25° C to +70° C)
- ▶ Softening point : 185°F (78° C)
- ▶ Transaction Time : <100 ms typical
- ▶ Fixed Serial Number : Unique, 32 bit
- ▶ Write Endurance : Minimum 100,000 cycles
- ▶ Read Endurance : Unlimited



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