# ST1353
# ST1355

## Memory Card IC 272 bit High Endurance EEPROM With Cipher Block Chaining (CBC) Security Mechanism

**DATA BRIEFING**

■ 5 V Single Supply Voltage
■ Memory Divided into:
  – 16 bits of Chip Identification
  – 48 bits of Card Identification
  – 40 bits of Count Data
  – 16 bits for Validation Certificate
  – 24 bits of Transport Code
  – 64 bits of Authentication Secret Key
  – 32 bits of Anti-tearing Flags (option)
  – 56 bits of User Data (option: not erasable)
■ Counting Capability (two options)
  – up to 32767 ($8^5$ -1)
  – 8 times reloadable, up to 4095 ($8^4$-1)
■ Certificate for Card Validation
■ Advanced Authentication Function with CBC
■ Special Anti-Tearing Mechanism
■ Circuit Protected by Transport Code for Delivery from ST to the Customer
■ Reset on $V_{CC}$ High and Low
■ Choice of Two Communication Protocols:
  – 6 contacts for ST1353
  – 5 contacts for ST1355
■ 4000V E.S.D. Protection (minimum)
■ 1 Million Erase/Write Cycle (minimum)
■ 10 Year Data Retention (minimum)
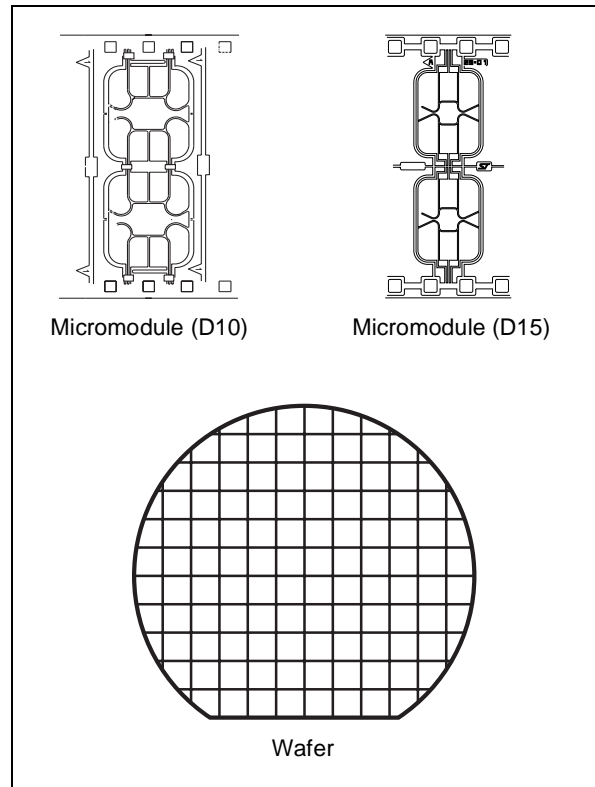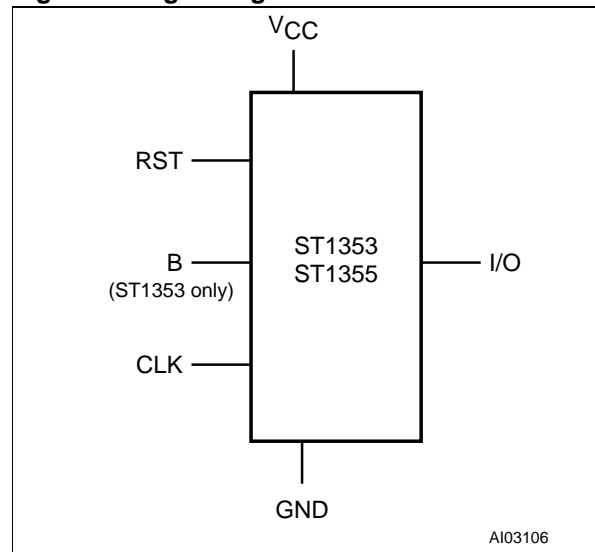■ 5 ms Programming Time (maximum)



Micromodule (D10)          Micromodule (D15)

Wafer

### Table 1. Signal Names

| CLK | Clock |
|-----|-------|
| RST | Function code for ST1353 |
|     | Reset for ST1355 |
| B | Function Code for ST1353 |
| I/O | Data Input / Output |
| $V_{CC}$ | Supply Voltage |
| GND | Ground |

**Figure 1. Logic Diagram**



AI03106

Complete data available on *Data-on-Disc CD-ROM* or at *www.st.com*

**Figure 2. D10 Connections**



VCC

RST

CLK

B

GND

I/O

Ai03107
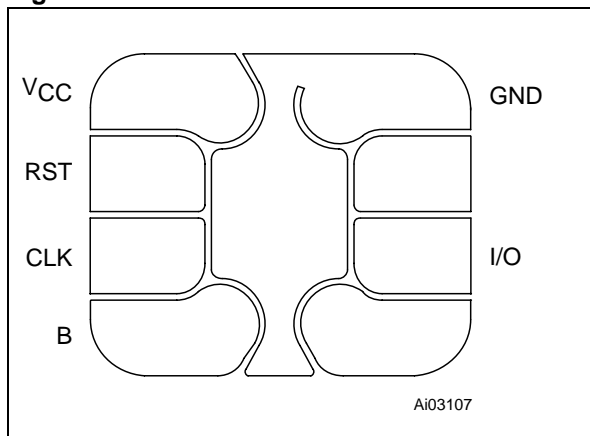
**Figure 3. D15 Connections**



VCC

RST

CLK

GND

I/O

AI03108
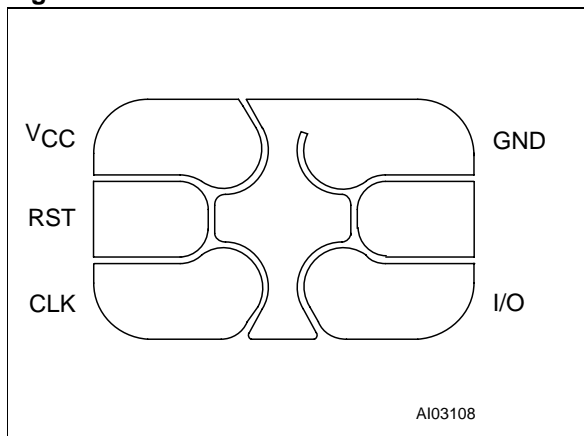
**Table 2. ST135x Family Products**

| Product | Advanced Authentication function with CBC | Communication Protocol | |
| --- | --- | --- | --- |
| | | 6 contacts | 5 contacts |
| ST1353 | Yes | Yes | |
| ST1355 | Yes | | Yes |

**ORDERING INFORMATION SCHEME**

The notation used for the device number is as shown in Table 3. For a list of available options (speed, package, etc.) or for further information on any aspect of this device, please contact the ST Sales Office nearest to you.

**Table 3. Ordering Information Scheme**

Example:                    ST1353    -    W4    /    XX    YY

| **Protocol** | |
| --- | --- |
| 53 | 6-contact, with advanced authentication function |
| 55 | 5-contact, with advanced authentication function |

| **Delivery Form** | |
| --- | --- |
| D10 | Micromodule on Super 35 mm reel (ST1353 only) |
| D15 | Micromodule on Super 35 mm reel (ST1355 only) |
| W4 | Wafer (180 μm thickness) |

**Transport Code**

Given by ST

**Customer Code**

Given by the Issuer