# HMS88T1608L/16L

## 8-BIT CMOS MCU BASED SAFEGUARDED SMARTCARD IC WITH 8176/16384 BYTES EEPROM

### FEATURES

- **Extended voltage Operation**
  - **$V_{CC}$ Range: 2.7V ~ 5.5V**
- **8 Bit Architecture CPU**
- **16K Bytes User ROM, Sector Combinative**
- **2.7K Bytes System ROM**
- **384 Bytes RAM**
- **8176/16384 Bytes EEPROM, Sector Combinative:**
  - **Highly Reliable CMOS EEPROM Technology**
  - **10 Years Data Retention**
  - **300,000 Erase/Write Cycles Endurance**
  - **Protected One Time Programmable Block (32 or 64 Bytes)**
  - **1 to 32 Bytes Block Erase or Write in a Single Cycle Programming**
- **Serial Access, ISO 7816-3 Compatible**
- **Standby Mode for Power Saving**
- **Up to 5 MHz Internal Operating Frequency**
- **Very High Security Features Including EEPROM flash erase**
- **Contact Assignment Compatible ISO7816-2**
- **ESD Protection Greater than 5,000V**
- **2 Operating Configurations**
  - **Issuer**
  - **User**
- **Meets GSM 11.11 and 11.12 Specifications**

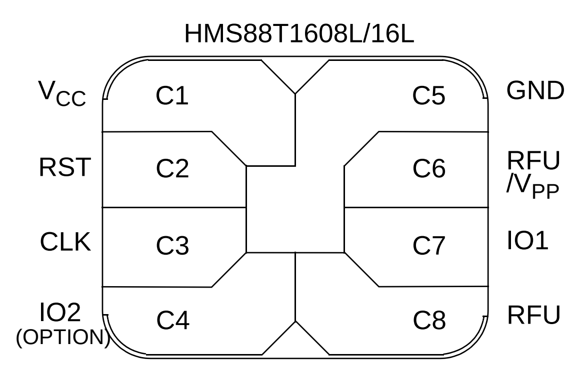

**Figure 1. Pin Configuration**

| | |
|---|---|
| $V_{CC}$ | Supply Voltage |
| RST | Reset |
| CLK | Clock |
| RFU | Reserved for future |
| GND | Ground |
| I/O1 | Data Input/Output |
| I/O2 | Data Input/Output(Option) |

**Table 2. Contact Format**

## INTRODUCTION

The HMS88T1608L/16L, a member of the standard HMS88T16XYZ family, are a serial access microcontrollers especially designed for very large volume and cost competitive smart cards applications.

The HMS88T1608L/16L are based on an 8 bit CPU core and include on chip memories: 384 bytes RAM, 16K bytes ROM, 8176/16384 bytes EEPROM structured in two main sectors to be used in different combinations, as described below.

Reliability data related to the HMS88T1608L/16L products manufactured using Hynix 0.7µm CMOS EEPROM technology guarantees data retention up to 10 years and endurance up to 300,000 erase/write cycles.

As all the other HMS88T16XYZ family members, the HMS88T1608L/16L are fully compatible with the ISO standards for smart card applications.

The HMS88T1608L/16L can be delivered as:
either in sawn or un-sawn 6inch wafers, 180 micron thickness as well as in micromodule package.

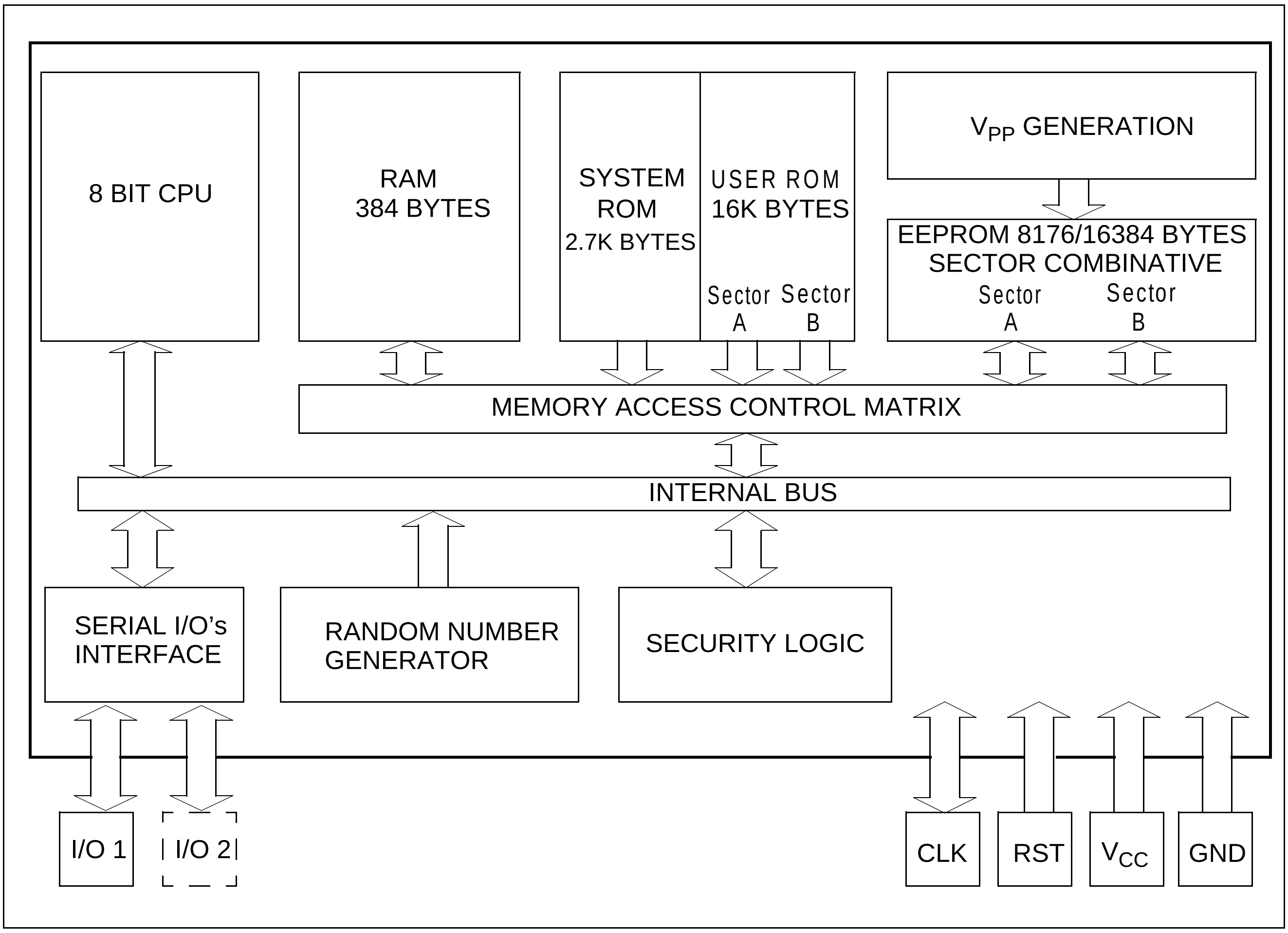

Figure 3. HMS88T1608L/16L Block Diagram