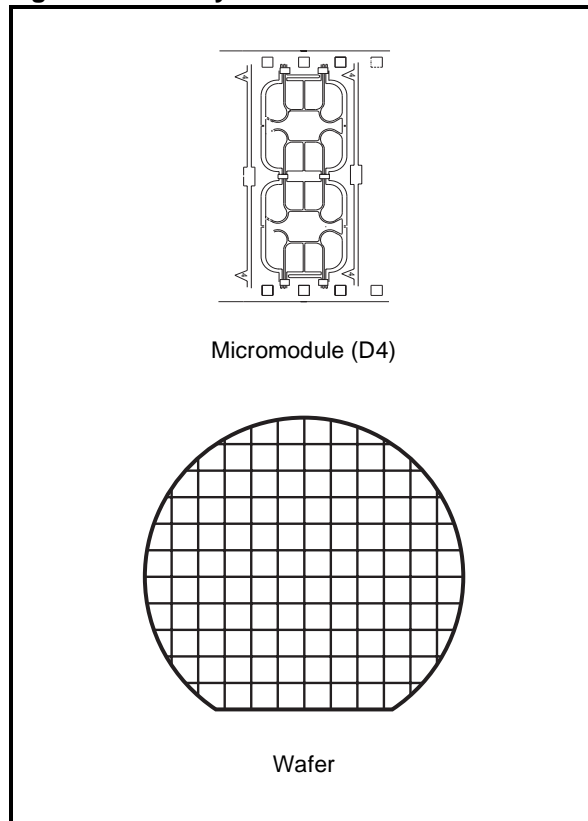# ST19SF04

CMOS MCU Based Safeguarded SMARTCARD With 4 KBytes EEPROM

DATA BRIEFING

PRODUCT FEATURES

- ENHANCED 8 BIT CPU WITH EXTENDED ADDRESSING MODES
- 32 KBYTES OF USER ROM WITH PARTITIONING
- SYSTEM ROM FOR LIBRARIES
- 960 BYTES OF USER RAM WITH PARTITIONING
- 4 KBYTES OF USER EEPROM WITH PARTITIONING
  - Highly reliable CMOS EEPROM submicron technology
  - 10 years data retention
  - 100,000 Erase/Write cycles endurance
  - Separate Write and Erase cycles for fast "1" programming
  - 1 to 32 bytes Erase or Program in 1 ms
- SECURITY FIREWALLS FOR MEMORIES
- VERY HIGH SECURITY FEATURES INCLUDING EEPROM FLASH PROGRAM AND CLOCK MANAGEMENT
- 8 BIT TIMER WITH INTERRUPT CAPABILITY
- 2 SERIAL ACCESS, ISO 7816-3 COMPATIBLE
- 3V ± 10% or 5V ± 10% SUPPLY VOLTAGE
- POWER SAVING STANDBY MODE
- CONTACT ASSIGNMENT COMPATIBLE ISO 7816-2
- UNIQUE SERIAL NUMBER ON EACH DIE
- ESD PROTECTION GREATER THAN 5000V

Figure 1. Delivery Form

Micromodule (D4)

Wafer

HARDWARE DESCRIPTION

The ST19SF04, a member of the ST19 device family, is a serial access microcontroller especially designed for very large volume and cost competitive secure portable objects.

The ST19SF04 is based on a STMicrolectronics 8-bit CPU and includes on chip memories: User ROM, User RAM and User EEPROM with state of the art security features.

ROM, RAM and EEPROM memories can be configured into partitions with customized access rules. Access from any memory area to another is protected by hardware FIREWALLS.

Access rules are User defined and can be selected by mask options or during the life of the product.

It is manufactured using the highly reliable ST CMOS EEPROM submicron technology.

As with all the other ST19 family members, it is fully compatible with the ISO 7816 standards for Smartcard applications.

SOFTWARE DEVELOPMENT

Software development and firmware (ROM code/options) generation are completed by the ST19-HDSX development system.

Figure 2. Block diagram