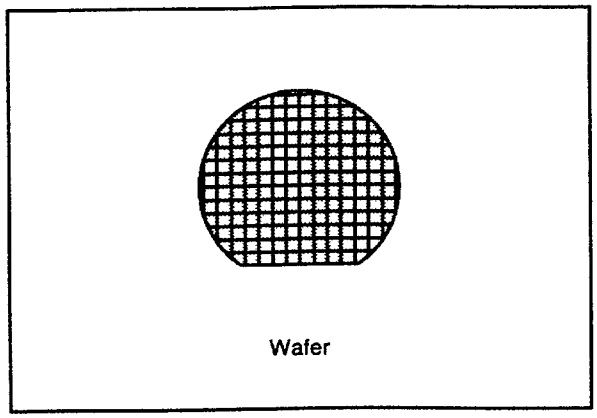
CMOS MCU BASED FAMILY OF SMARTCARDS ICs

PRELIMINARY DATA

- 8 BIT ARCHITECTURE CPU
- 2 to 16K BYTES of USER ROM
- 96 to 1K BYTES of USER RAM
- 64 to 8K BYTES of EEPROM
- SERIAL ACCESS, ISO 7816-3 PIN OUT COMPATIBLE
- 5 MHz INTERNAL OPERATING FREQUENCY
- SINGLE SUPPLY VOLTAGE IN ALL OPERATING MODES (5V ± 10%)
- POWER ON RESET
- 1 to 32 BYTES MULTIBYTE EEPROM PROGRAMMING CAPABILITY
- VERY HIGH SECURITY LEVEL
- CUSTOMER OPTIONS FOR: SECURITY, SPEED, INTERRUPT, I/O CONFIGURATION
- HIGHLY RELIABLE CMOS EEPROM TECHNOLOGY



Wafer

DESCRIPTION

The ST16XY is the generic name of a family of serial access devices perfectly suited to smartcard applications. Built around an 8 bit CPU core, each "family member" includes on chip memories: static RAM can range from 96 up to 1024 bytes, from 2K to 16K bytes of user ROM and 64 to 8K bytes of EEPROM are also user selectable.

A large choice of user defined options regarding the clock speed, security, the interrupts and the I/O buffer configurations provide the user with extra flexibility.

The SGS-THOMSON Microelectronics ST16XYZ family has been especially designed for applications requiring a very high level of security. The 100% compatibility of the ST16XYZ products with the ISO standard (serial access, 5 contacts only, 5V single power supply in all operating modes, answer to reset conforming to ISO 7816-3...) makes these devices particularly suitable for "Smartcard" type applications.

Table 1. ST16XYZ Family Members

Product	RAM	ROM	EEPROM
ST16301	128 bytes	3K bytes	1K bytes
ST16612	160 bytes	6K bytes	2K bytes
ST16B22	224 bytes	11K bytes	2K bytes
ST16623	224 bytes	6K bytes	3K bytes
ST16F48	288 bytes	16K bytes	8K bytes

DESCRIPTION (Cont'd)

The design of the "on-chip" EEPROM along with a very high reliability CMOS process yields typical endurance of over 100k Erase/Write cycles and data retention greater than 10 years.

In order to develop the software and determine the ROM code, the ST16S-EMU development system is available. The customer can define its product configuration in term of memory sizes and options and validate its code.

Then SGS THOMSON-Microelectronics will process this product according to customer requirements.

Figure 2. Block Diagram