



ST7FLITE0

8-BIT MCU WITH SINGLE VOLTAGE FLASH MEMORY, DATA EEPROM, ADC, TIMERS, SPI

PRODUCT PREVIEW

■ Memories

- 1.5K bytes single voltage extended Flash (XFlash) Program memory with read-out protection, In-Circuit Programming and In-Application Programming (ICP and IAP)
- 128 bytes RAM
- 128 bytes data EEPROM with read-out protection

■ Clock, Reset and Supply Management

- Enhanced reset system
- Enhanced low voltage supervisor (LVD) for main supply with 3 programmable reset thresholds and auxiliary voltage detector (AVD) with interrupt capability for implementing safe power-down procedures
- Clock sources: internal 1MHz RC 1% oscillator or external clock
- Optional PLL x4 or x8 for 4 or 8 MHz internal clock
- Four Power Saving Modes: Halt, Active-Halt, Wait and Slow

■ Interrupt Management

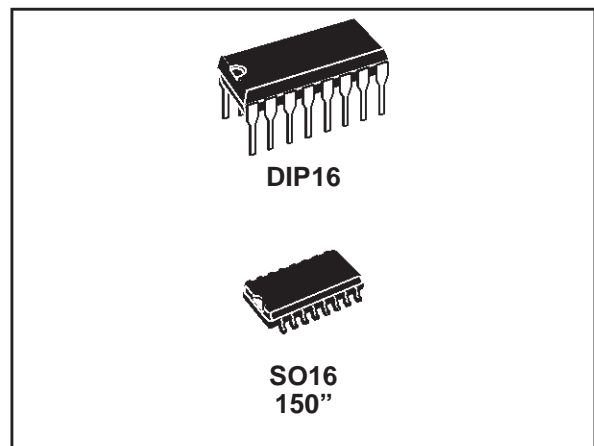
- 10 interrupt vectors plus TRAP and RESET
- 4 external interrupt lines (on 4 vectors)

■ I/O Ports

- 13 multifunctional bidirectional I/O lines
- 9 alternate function lines
- 6 high sink outputs

■ 2 Timers

- One 8-bit Lite Timer with prescaler including: watchdog, 1 realtime base and 1 input capture.



- One 12-bit Auto-reload Timer with output compare function and PWM

■ 1 Communication Interface

- SPI synchronous serial interface

■ A/D Converter

- 5 input channels
- Fixed gain Op-amp for 11-bit precision in 0 to 250 mV range (@ 5V V_{DD})
- 8-bit precision for 0 to 5V (@ 5V V_{DD})

■ Instruction Set

- 8-bit data manipulation
- 63 basic instructions
- 17 main addressing modes
- 8 x 8 unsigned multiply instruction
- True bit manipulation

■ Development Tools

- Full hardware/software development package

Device Summary

Features	ST7FLite09	ST7FLite05
Program memory - bytes	1.5K Flash	1.5K Flash
RAM (stack) - bytes	128 (64)	128 (64)
Data EEPROM - bytes	128	-
Peripherals	Lite Timer w/ Watchdog, Autoreload Timer w/ 1 PWM, SPI, 8-bit ADC w/ Op-Amp	
Operating Supply	2.4V to 5.5V	
CPU Frequency	1MHz RC 1% PLLx4/8MHz	
Operating Temperature	-40°C to +85°C (-40°C to +105/125°C optional)	
Packages	SO16 150", DIP16	SO16 150", DIP16

Rev. 1.4

June 2001

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This is preliminary information on a new product now in development. Details are subject to change without notice.

1 INTRODUCTION

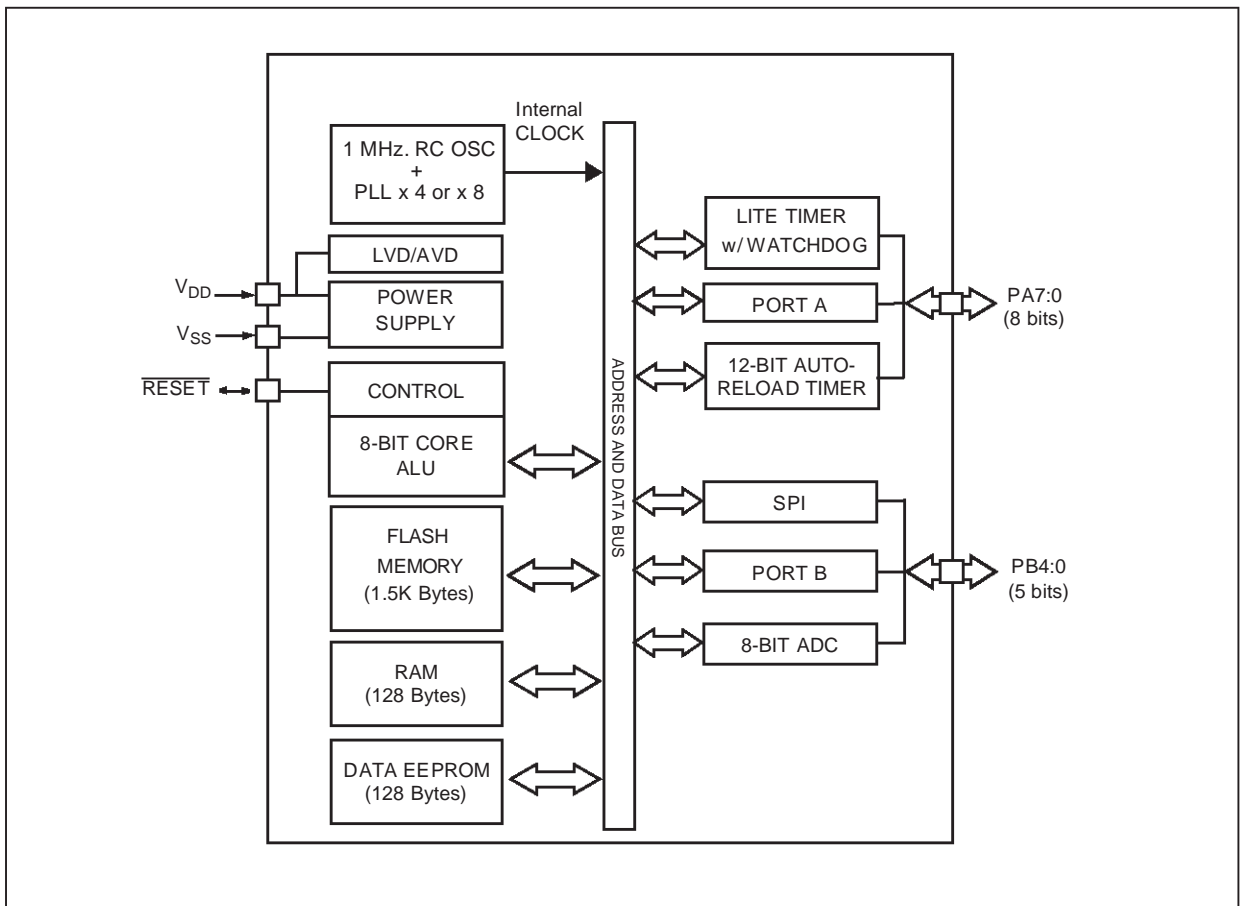
The ST7FLITE0 is a member of the ST7 microcontroller family. All ST7 devices are based on a common industry-standard 8-bit core, featuring an enhanced instruction set.

The ST7FLITE0 features FLASH memory with byte-by-byte In-Circuit Programming (ICP) and In-Application Programming (IAP) capability.

Under software control, the ST7FLITE0 device can be placed in WAIT, SLOW, or HALT mode, reducing power consumption when the application is in idle or standby state.

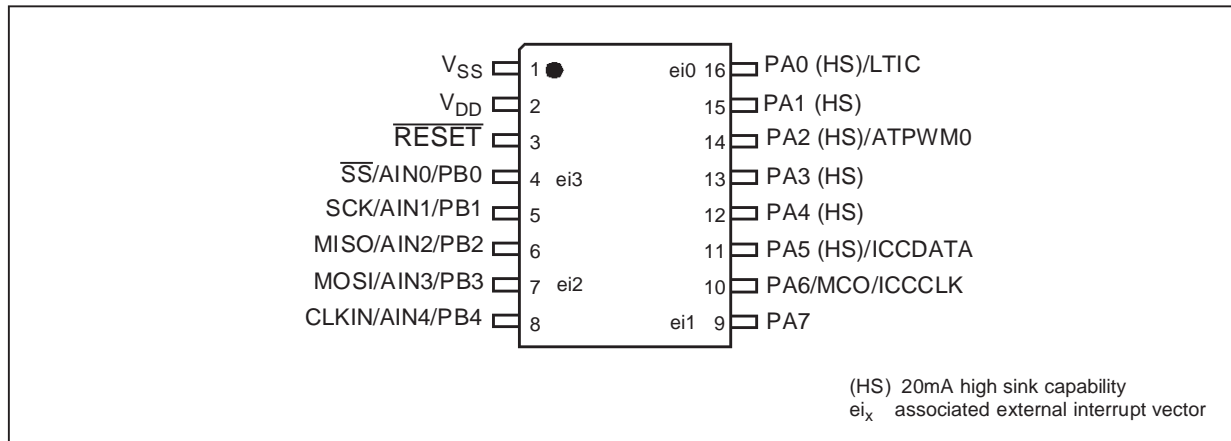
The enhanced instruction set and addressing modes of the ST7 offer both power and flexibility to software developers, enabling the design of highly efficient and compact application code. In addition to standard 8-bit data management, all ST7 microcontrollers feature true bit manipulation, 8x8 unsigned multiplication and indirect addressing modes.

Figure 1. General Block Diagram



2 PIN DESCRIPTION

Figure 2. 16-Pin Package Pinout (150mil)



2.1 OPERATING CONDITIONS

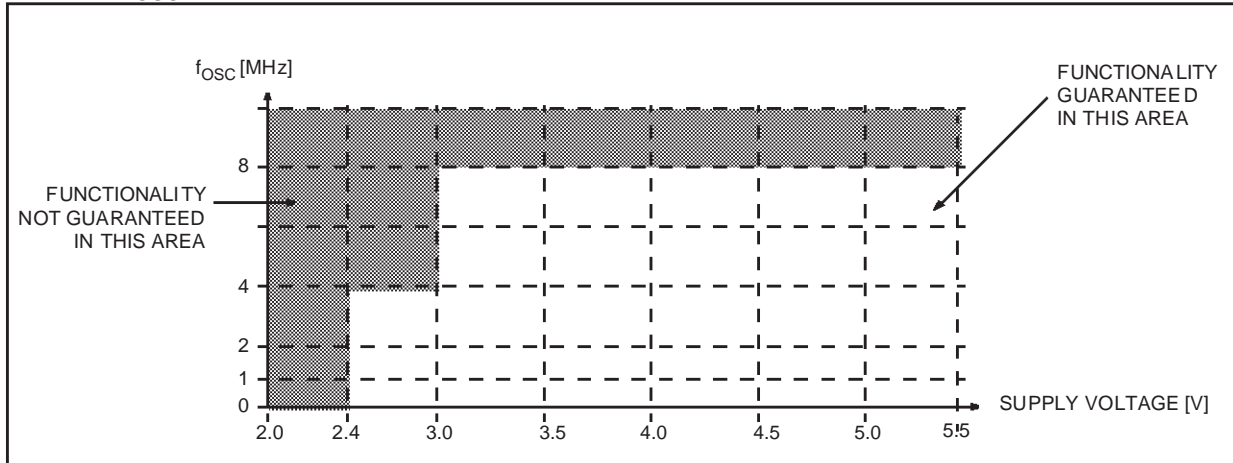
2.1.1 General Operating Conditions

Symbol	Parameter	Conditions	Min	Max	Unit
V _{DD}	Supply voltage	f _{OSC} = 4 MHz. max.	2.4	3.0	V
		f _{OSC} = 8 MHz. max.	3.0	5.5	V
T _A	Ambient temperature range ²⁾	1 Suffix Version	0	70	°C
		6 Suffix Version	-40	85	
		7 Suffix Version ²⁾	-40	105	
		3 Suffix Version (V _{DD} ≥4.0V) ²⁾	-40	125	

Note:

1. Guaranteed by construction. A/D operation is not guaranteed below 1MHz.
2. Internal RC oscillator and PLL operation not guaranteed above 85 °C.

Figure 3. f_{OSC} Maximum Operating Frequency Versus V_{DD} Supply Voltage



3 PACKAGE CHARACTERISTICS

3.1 PACKAGE MECHANICAL DATA

Figure 4. 16-Pin Plastic Dual In-Line Package, 300-mil Width

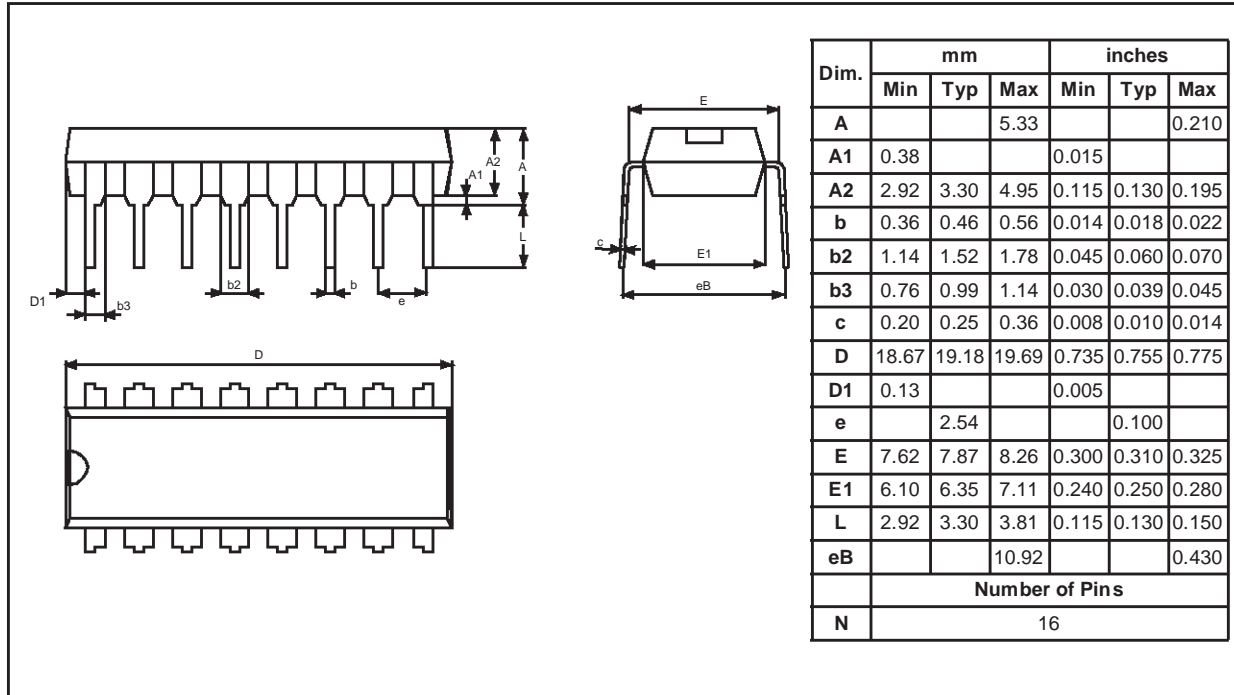
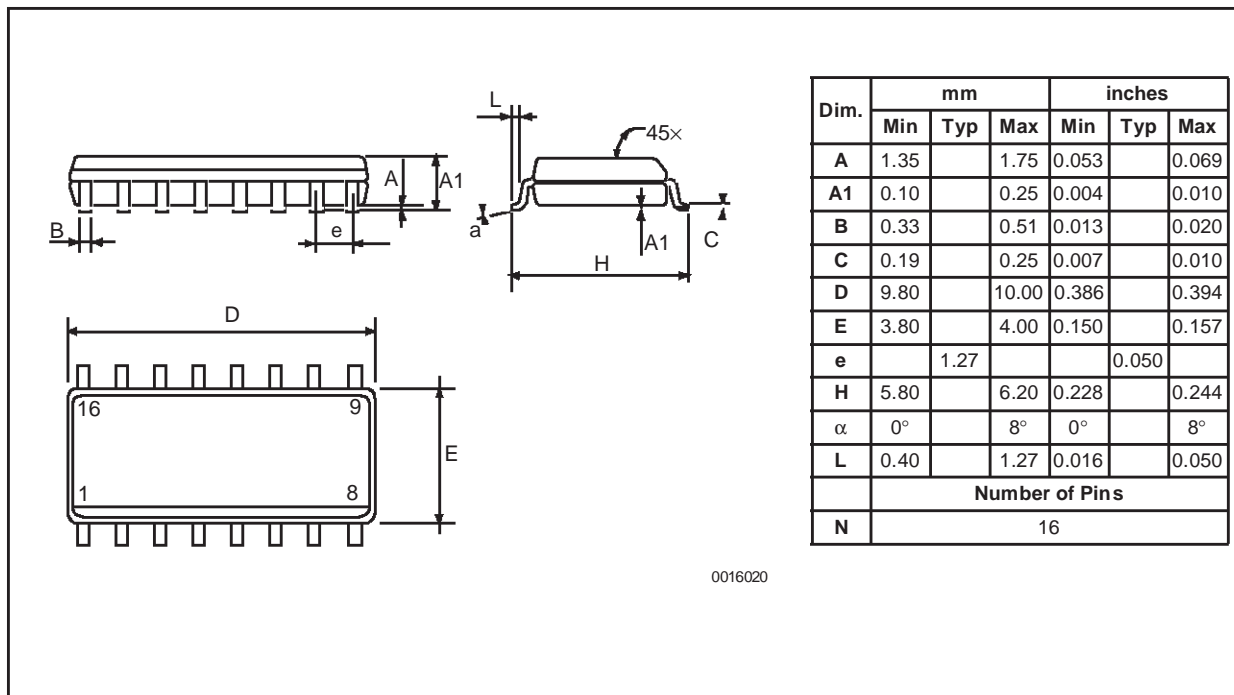


Figure 5. 16-Pin Plastic Small Outline Package, 150-mil Width



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Notes:

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