



provides a convenient way to download program a user's system.

The program and data memory arrays in the ATtiny either programming mode. For the EEPROM, an at self-timed write instruction in the Low-voltage Serial

## ATtiny11/12

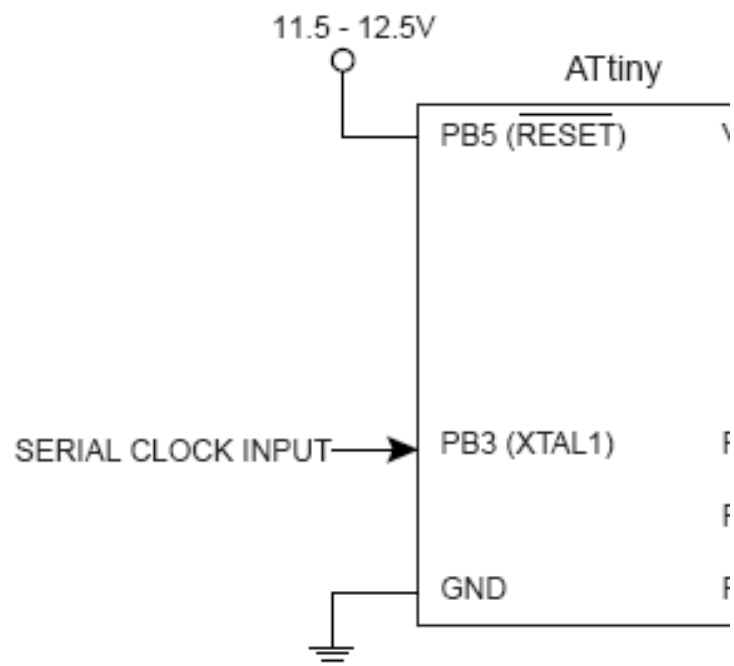
During programming, the supply voltage must be in **Table 22. Supply Voltage during Programming**

Part	Low-voltage Serial Programming
ATtiny11L	Not applicable
ATtiny11	Not applicable
ATtiny12V	2.2 - 5.5V
ATtiny12L	2.7 - 5.5V
ATtiny12	4.0 - 5.5V

## High-voltage Serial Programming

This section describes how to program and verify Data memory (ATtiny12), lock bits and fuse bits in t

**Figure 27. High-voltage Serial Programming**



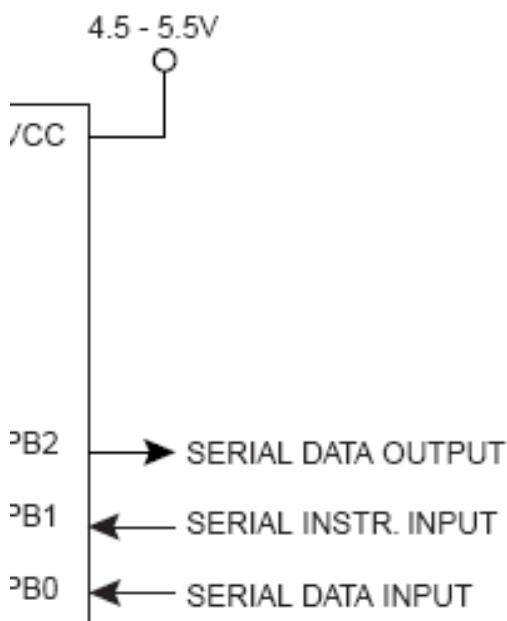
nd data into the ATtiny12 inside the

12 are programmed byte-by-byte in  
to-erase cycle is provided within the  
Programming mode.

accordance with Table 22.

High-voltage Serial Programming	
	4.5 - 5.5V
	4.5 - 5.5V
	4.5 - 5.5V
	4.5 - 5.5V
	4.5 - 5.5V

Flash Program memory, EEPROM  
the ATtiny11/12.



**Table 19.** Port B Pins Alternate Functions

Port Pin	Alternate Functions
PB0	AIN0 (Analog Comparator Positive Input)
	MOSI (Data Input Line for Memory Downloading)
PB1	INT0 (External Interrupt0 Input)
	AIN1 (Analog Comparator Negative Input)
	MOSI (Data Output Line for Memory Downloading)
PB2	T0 (Timer/Counter0 External Counter Input)
	SCK (Serial Clock Input for Serial Programming)
PB3	XTAL1 (Oscillator Input)
PB4	XTAL2 (Oscillator Output)
PB5	$\overline{\text{RESET}}$ (External Reset Pin)

When the pins PB2..0 are used for the alternate function, the DDRE register has to be set according to the alternate function description. When for alternate functions, the values in the corresponding DDRB are ignored.

	<b>Device</b>
	ATtiny11/12
	ATtiny12
	ATtiny11/12
	ATtiny11/12
	ATtiny12
	ATtiny11/12
	ATtiny12
	ATtiny11/12
	ATtiny11/12
	ATtiny11/12

3 and PORTB regis-  
ten PB5..3 are used  
nd PORTB bits are