

P87C654X2

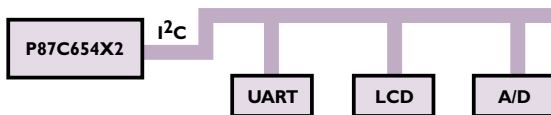


Features

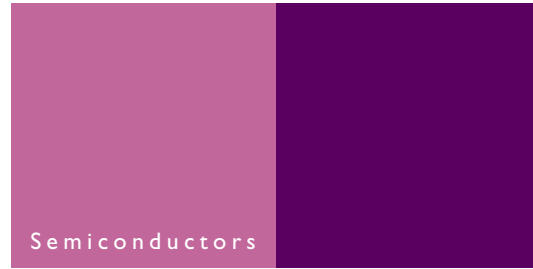
- 80C51 Central Processing Unit
 - 16 KBytes OTP P87C654X2
 - 16 KBytes ROM P83C654X2
 - 256 bytes RAM
 - Boolean processor
 - Fully static operation
 - Low voltage (2.7V to 5.5V at 16 MHz) operation
- 400 KHz byte oriented I²C serial interface
- 12-clock operation with selectable 6-clock operation (via software or parallel programmer)
- Memory addressing capability
 - Up to 64 Kbytes program memory and 64 Kbytes data memory
- Power control modes:
 - Clock can be stopped and resumed
 - Idle mode
 - Power-down mode
- Two speed ranges at V_{DD} = 5V
 - 0 to 30 MHz in 6-clock operation mode
 - 0 to 33 MHz in 12-clock operation mode
- Dual Data Pointers
- Three security bits
- Four 8-bit I/O ports
- Watchdog timer

Benefits

- 400 KHz I²C serial port for easy connection to I²C peripheral devices.
- 6-clock modes provides twice the performance of the conventional 80C51
- Fully static design allows a wide operating frequency range down to zero
- Low voltage



8-bit 80C51 16 KB OTP/ROM and 256 RAM with 400 KHz I²C



Description

The devices are Single-Chip 8-bit Microcontrollers manufactured in an advanced CMOS process and are derivatives in the 80C51 microcontroller family. The instruction set is 100% compatible with the 80C51 instruction set.

The devices support 6-clock/12-clock mode selection by programming an OTP bit (OX2) using parallel programming. In addition, an SFR bit (X2) in the clock control register (CKCON) also selects between 6-clock/12-clock mode.

The P87C654X2 has a single 400 KHz I²C serial port. The I²C serial port has a default setting of 100 KHz to match the I²C serial port speed of the existing P87C654. For applications requiring up to 400 KHz, the I²C serial port can be set via SFR for high speed.

These devices also have four 8-bit I/O ports, three 16-bit timer/event counters, a multi-source, four-priority-level, nested interrupt structure, an enhanced UART and on-chip oscillator and timing circuits.

Applications

- Industrial Control
- Consumer Applications

Ordering information

Part Number	Temperature Range	Package	Drawing Number
P83C654X2FA	-40° C to +85° C	PLCC; 44 leads	SOT-187-2
P83C654X2BBD	0° to +70° C	LQFP; 44 leads	SOT-389-1
P87C654X2FA	-40° C to +85° C	PLCC; 44 leads	SOT-187-2
P87C654X2BBD	0° to +70° C	LQFP; 44 leads	SOT-389-1

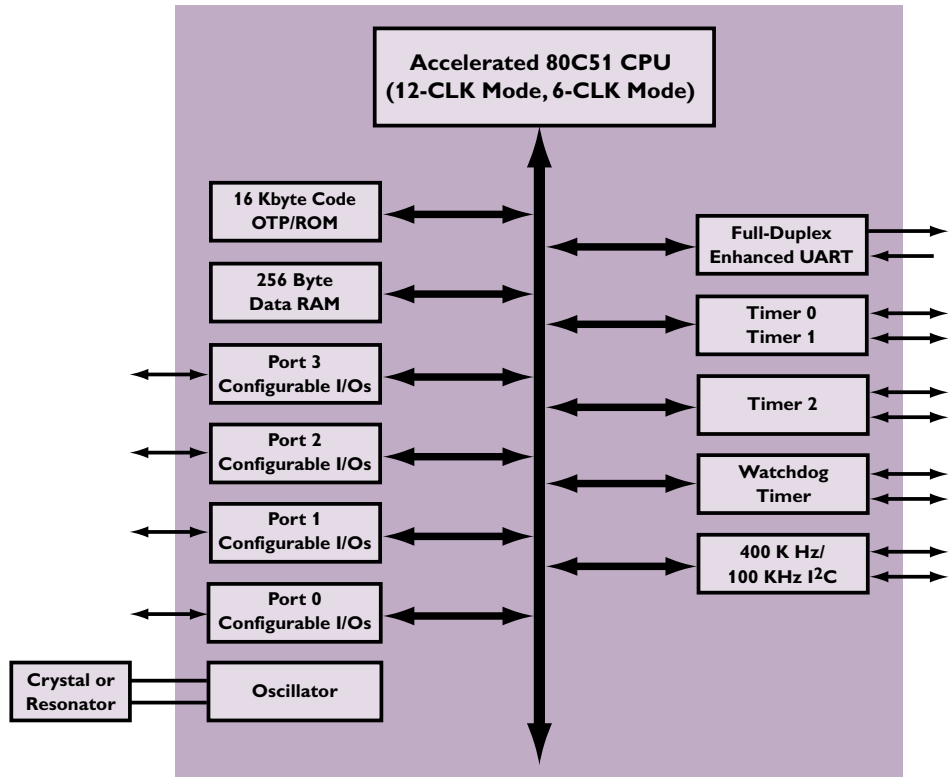


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P87C654 block diagram



Purchase of Philips I²C components conveys a license under the Philips' patent to use the components in the I²C system provided the system conforms to the I²C specification defined by Philips.

www.semiconductors.philips.com/microcontrollers



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