

## Product List

OB38A04T1W16,  
 OB38A04T1W14,  
 OB38A04T1W10,

## Description

The OB38A04T1 is a 1T (one machine cycle per clock) single-chip 8-bit microcontroller. It has 4KB +1KB embedded program memory, and executes all ASM51 instructions fully compatible with MCS-51.

OB38A04T1 contains 256B+64B on-chip RAM, up to 14 GPIOs (16L package), various serial interfaces and many peripheral functions as described below. It can be programmed via writers. Its on-chip ICE is convenient for users in verification during development stage.

The high performance of OB38A04T1 can achieve complicated manipulation within short time. About one third of the instructions are pure 1T, and the average speed is 8 times of traditional 8051, the fastest one among all the 1T 51-series. Its excellent EMI and ESD characteristics are advantageous for many different applications.

## Ordering Information

OB38A04T1 ihhKL

YWW

i : process identifier { W = 2.4V ~ 5.5V }

hh : pin count

k : package type postfix {as table below }

L : PB Free identifier

{No text is Non-PB free, "P" is PB free}

Y : Year Code

WW : Week Code (01-52)

Postfix	Package
O	SOP (150 mil)
M	MSOP (118 mil)

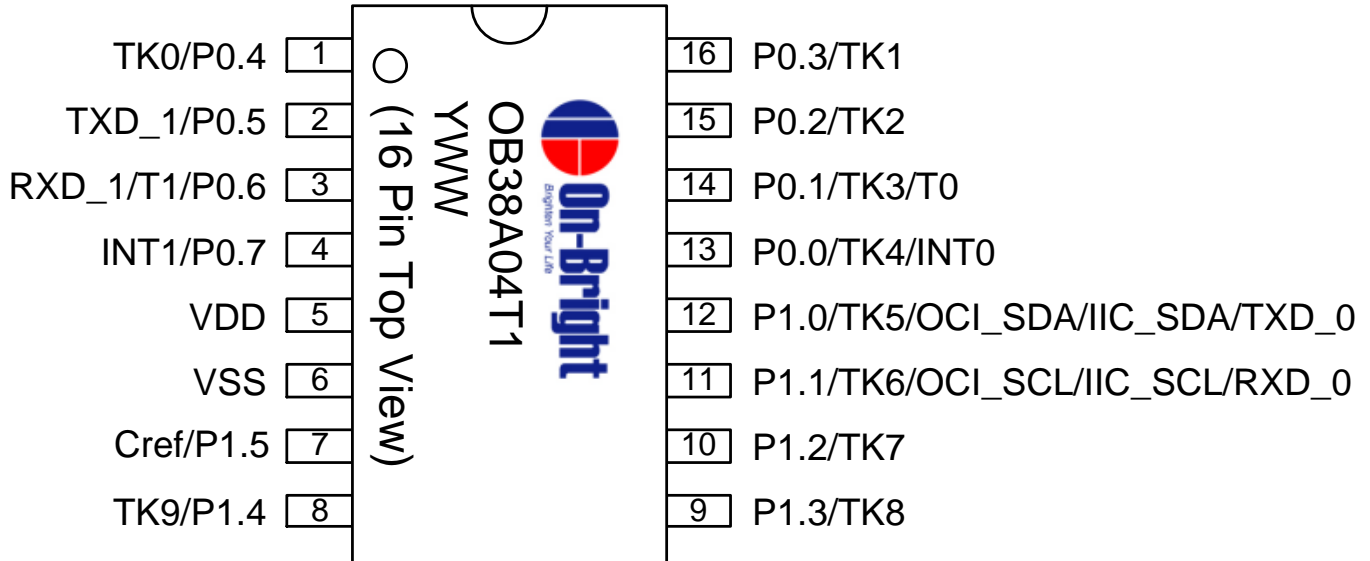
- High speed architecture of 1 clock/machine cycle runs up to 16MHz.
- 1~8T can be switched on the fly.
- Instruction-set compatible with MCS-51.
- 16MHz Internal RC oscillator, with programmable clock divider
- 4KB +1KB on-chip program memory.
- 256 bytes SRAM as standard 8052, plus 64 bytes on-chip expandable SRAM.
- Dual 16-bit Data Pointers (DPTR0 & DPTR1).
- One serial peripheral interfaces in full duplex mode.
- Up to 10 touch sense inputs, support multiplexing I/O function.
- Lower power touch-key wakeup function.
- Additional Baud Rate Generator for Serial port.
- Two 16-bit Timer/Counters. (Timer 0,1 )
- Port 0~1, Up to 14 GPIO.
- External interrupt 0,1 with four priority levels
- Programmable watchdog reset and interrupt timer.
- One IIC interface. (Master/Slave mode)
- ISP/IAP/ICP functions.
- ISP service program space configurable in N\*128 byte (N=0 to 8) size.
- EEPROM function.
- On-Chip in-circuit emulator (ICE) functions with On-Chip Debugger (OCD).
- LVI/LVR (LVR deglitch 500ns)  
 - POR and Programmable LVR(3.0 / 2.4 / 2.2 /2.0) & LVI (4.0 / 3.2 / 2.6 / 2.4)
- 2 external interrupt with rising/falling edge detection. (INT x 2)
- Power management unit for IDLE and power down modes.

## Features

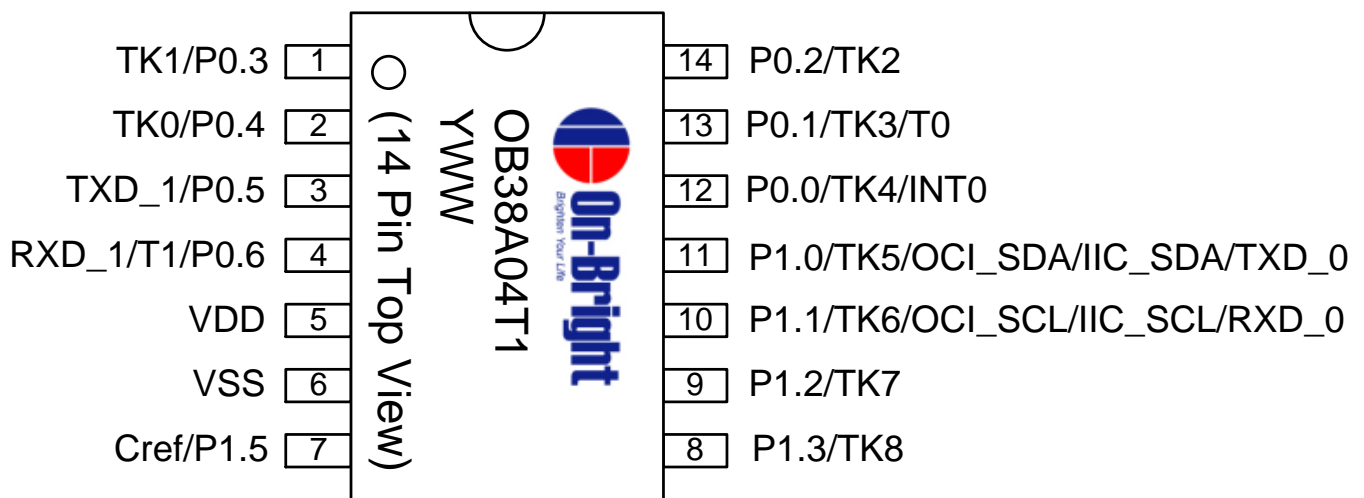
- Operating Voltage: 2.4V ~ 5.5V

## Pin Configuration

### 16 Pin SOP 150mil



### 14 Pin SOP 150mil



**10 Pin MSOP 118mil**

