

Product List

OB38R16T1W28SP,
OB38R16T1W28EP,
OB38R16T1W24SP,
OB38R16T1W24EP,
OB38R16T1W20SP,
OB38R16T1W20EP,
OB38R08T1W20DP,
OB38R16T1W16OP,
OB38R16T1W14OP,
OB38R16T1W10GP,

Description

The OB38R16T1 is a 1T (one machine cycle per clock) single-chip 8-bit microcontroller. It has 16KB embedded program memory, and executes all ASM51 instructions fully compatible with MCS-51.

OB38R16T1 contains 256B+512B on-chip RAM, up to 26 GPIOs (28L 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 OB38R16T1 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

OB38R16T1 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)

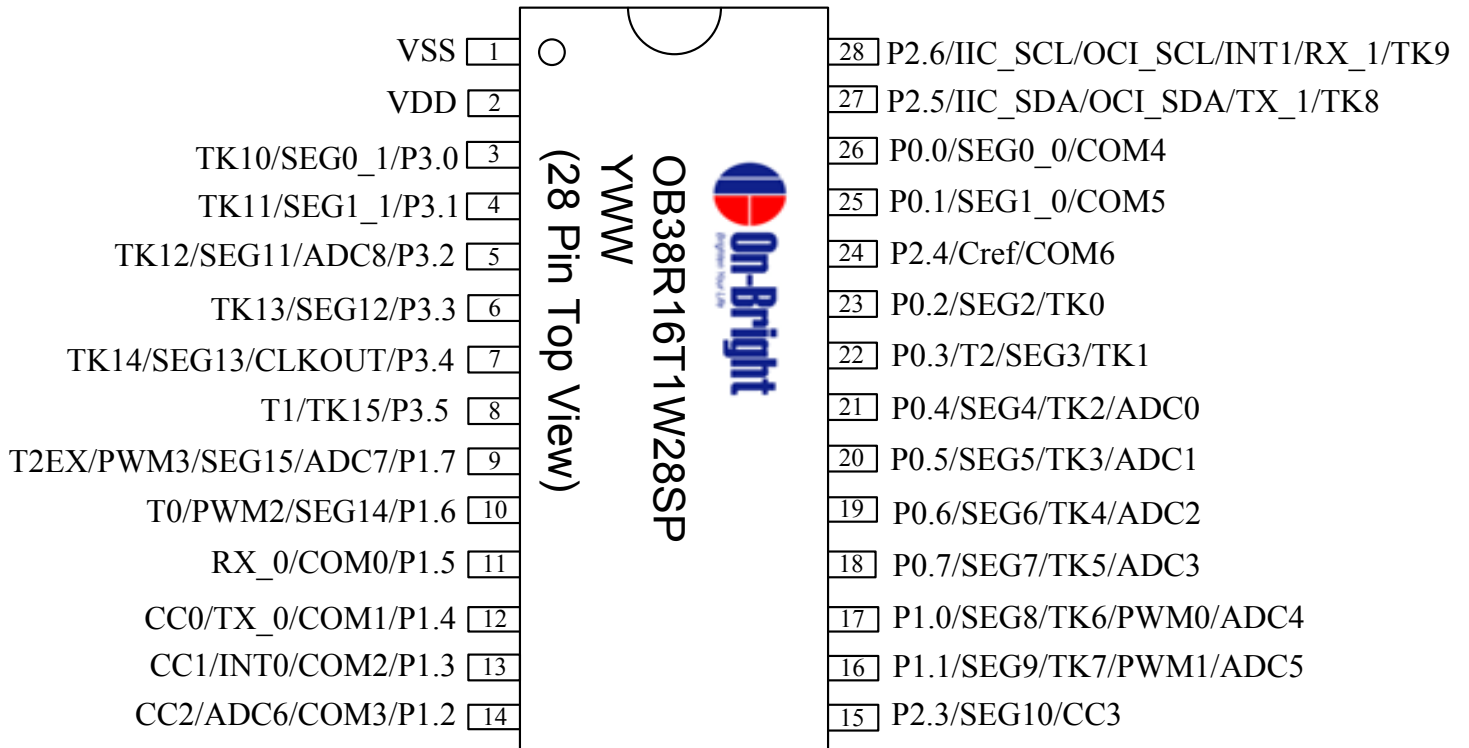
Postfix	Package
S	SOP (300mil)
E	TSSOP(173 mil)
O	SOP (150 mil)
G	SSOP (150 mil)
D	QFN(4mmx4mm)

Features

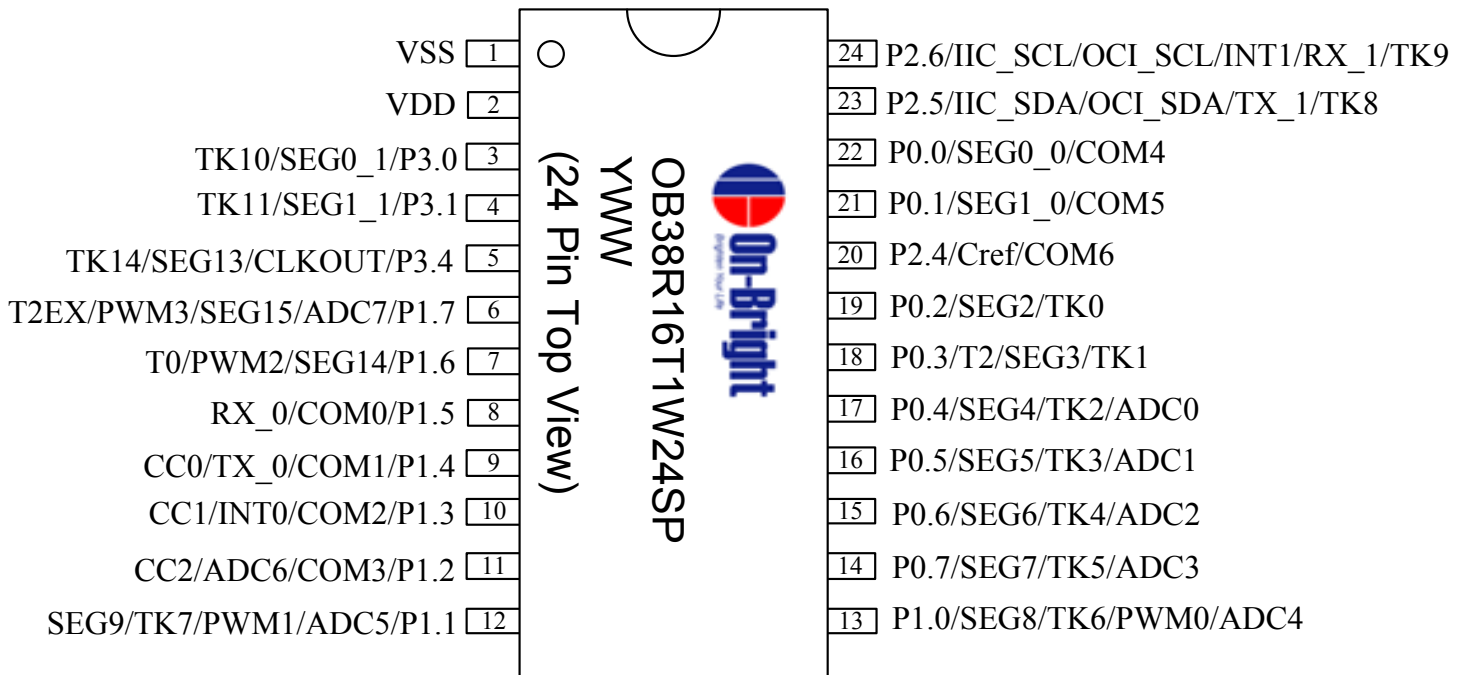
- Operating Voltage: 2.4V ~ 5.5V
- High speed architecture of 1 clock/machine cycle runs up to 16MHz.
- 1~8T can be switched on the fly.
- Instruction-set compatible with MCS-51.
- 16MHz Internal RC oscillator, with programmable clock divider
- 16KB on-chip program memory.
- 256 bytes SRAM as standard 8052, plus 512 bytes on-chip expandable SRAM.
- One serial peripheral interfaces in full duplex mode.
- Up to 16 touch sense inputs, support multiplexing I/O function.
- Lower power touch-key wakeup function.
- Additional Baud Rate Generator for Serial port.
- Three 16-bit Timer/Counters. (Timer 0,1,2)
- 4 channel 16-bit compare/capture functions
- Port 0~3, Up to 26 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).
- 4-channel PWM with dead time
- 9 channel 12-bit ADC
- LED driver 7 COM*16 Segment, COM port sink current 80mA
- 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.

Pin Configuration

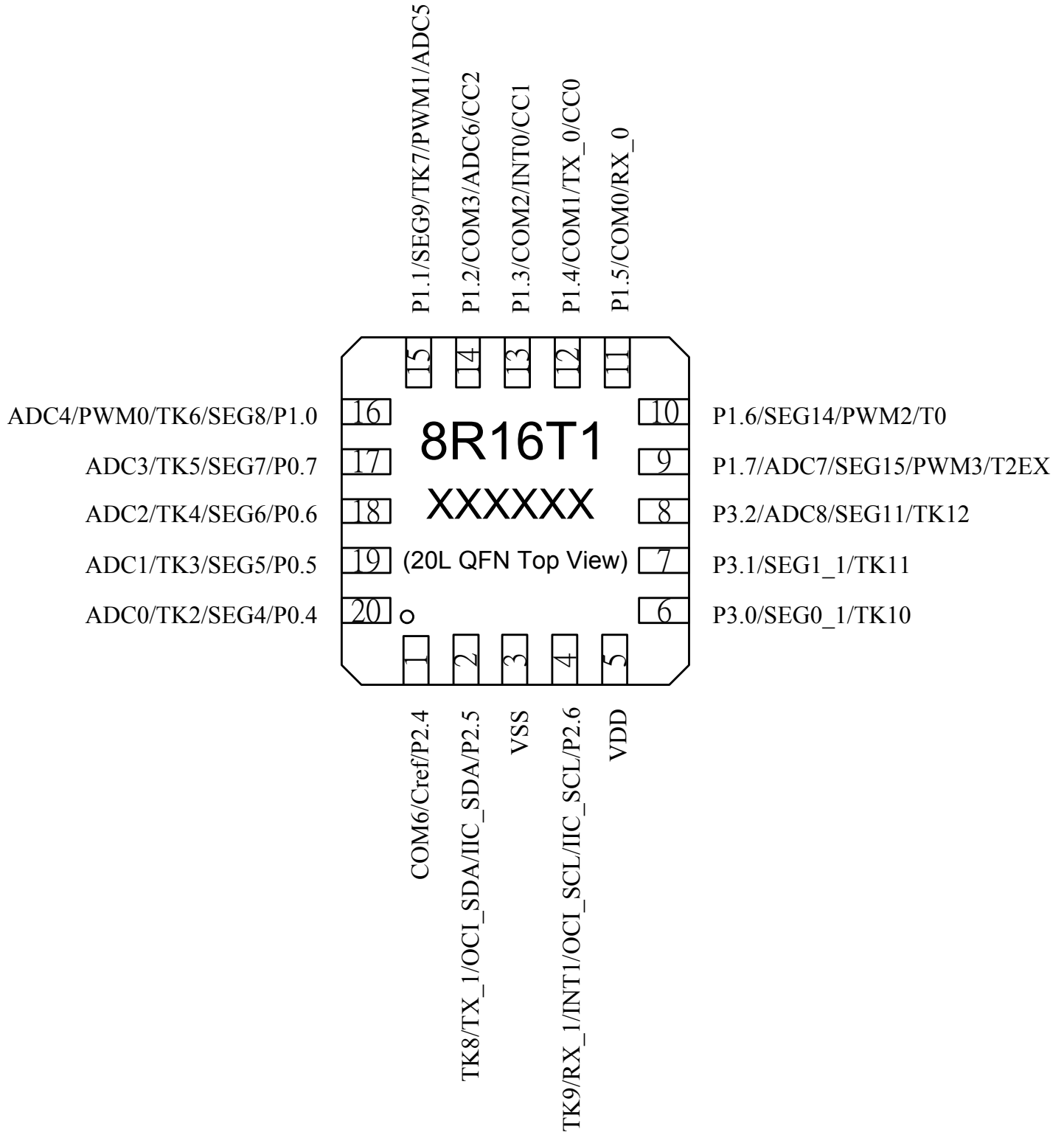
28 Pin 300mil / TSSOP 173mil



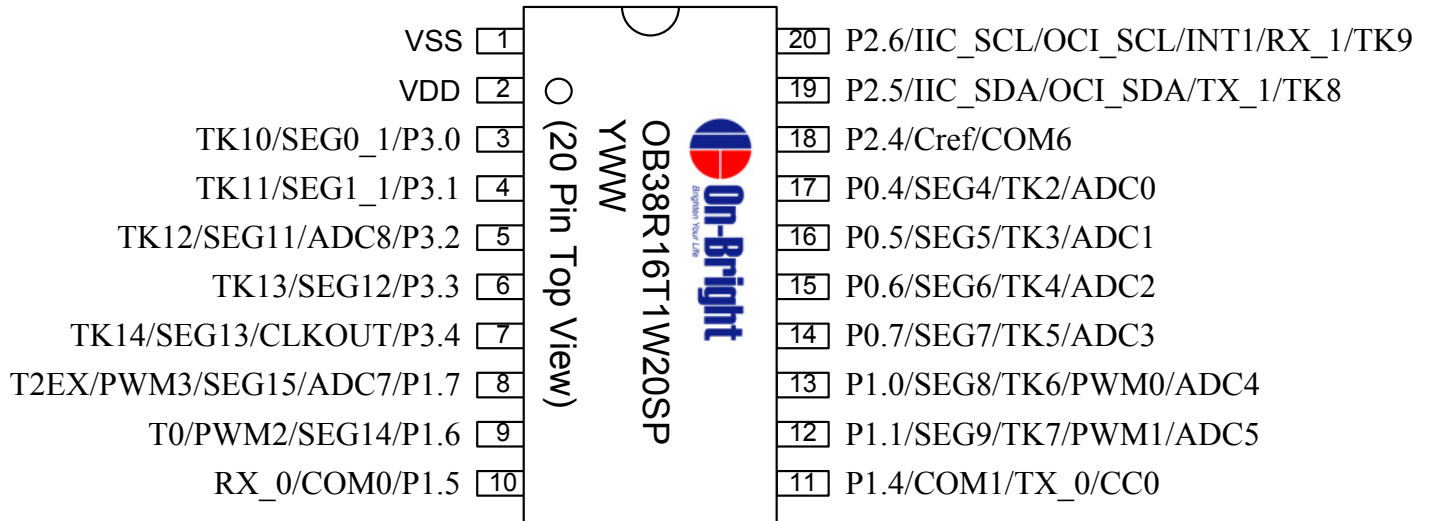
24 Pin 300mil / TSSOP 173mil



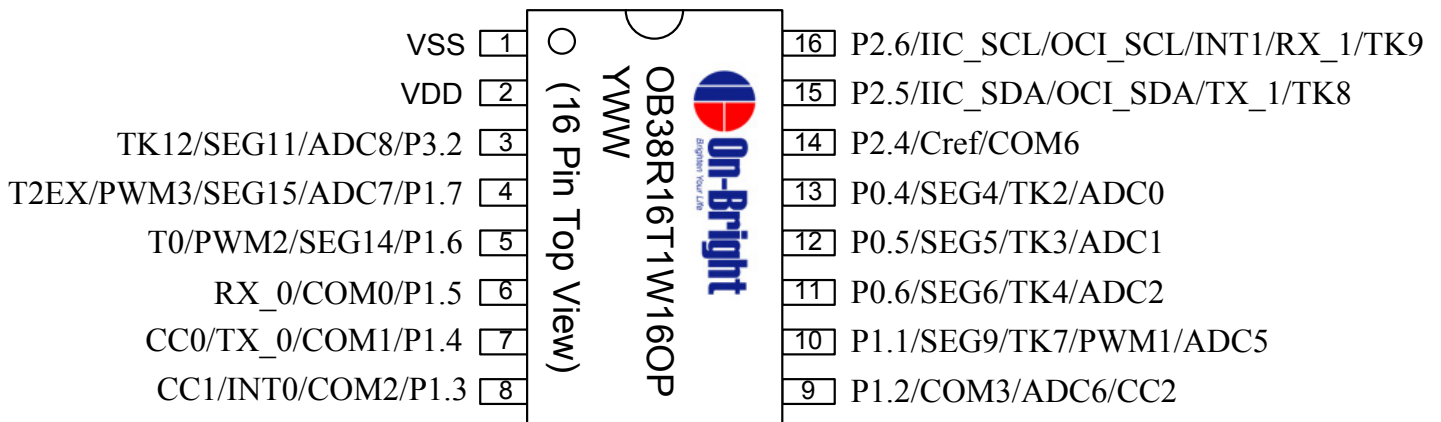
20 Pin QFN 4x4mm



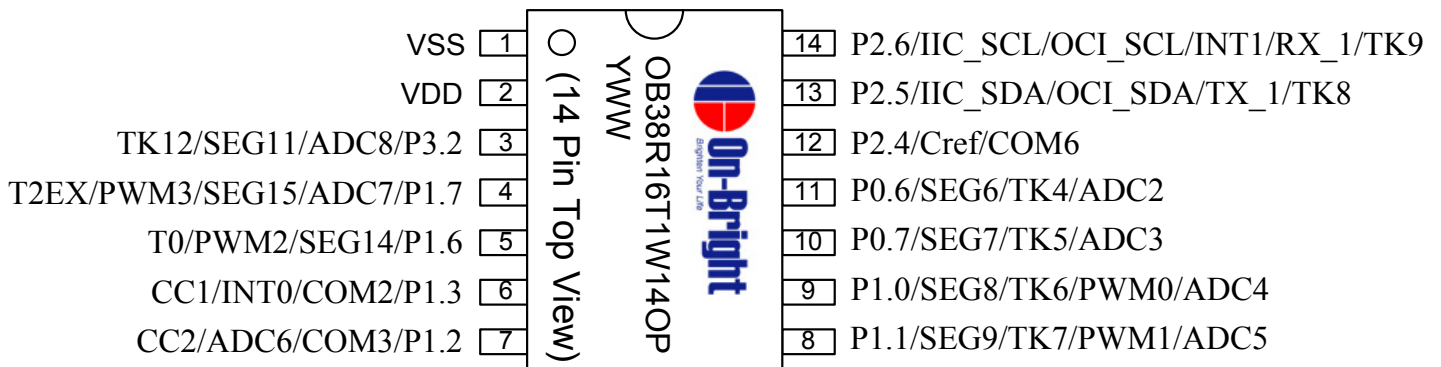
20 Pin 300mil / TSSOP 173mil



16 Pin SOP 150mil



14 Pin SOP 150mil



10 Pin SSOP 150mil

