WT50F5

8-bit mC with 8KB Flash Memory, an 8-CH 12-bit A/D Converter and 16x4 LCD Driver

DESCRIPTION

The WT50F5 is a high-performance, low-cost, CMOS 8-bit single-chip microcontroller with 8Kbytes on-chip flash memory, an 8-channel 12-bit analog to digital converter and 16x4 LCD driver. This chip is suitable for variable applications, especially where analog signal (sensor output) to digital signal conversion, LCD display and short development cycle are required, including industrial control, consumer, communications, and security products.

This chip has 8-bit CPU, RAM, flash memory, I/Os, dual 16-bit timer/counters, interrupt controller, 16x4 LCD driver and an 8-channel 12-bit A/D converter. To be suitable for portable battery-powered applications, a power saving function is included.

FEATURES

◆ 8-bit single chip microcontroller with 8K bytes flash memory and 384bytes SRAM

◆ Wide voltage operating range from 2.7 V to 5.5 V

◆ On-chip RC oscillator runs at 2MHz and crystal oscillator can run up to 6.0 MHz

◆ 6 interrupt sources (external:1; internal:5) ; all sources have independent latches each and multiple interrupt control is available

◆ I/O port (32 pins)

    ◆ Port P0   8 pins (shared with analog inputs; 4 pins with 20 mA sink current)

    ◆ Port P1   8 pins (20 mA sink current)

    ◆ Port P2   8 pins (shared with SEG9~SEG16)

    ◆ Port P3   8 pins (shared with SEG1~SEG8)

◆ Interval Timer (Internal time base generator)

◆ Operating current 2mA/4MHz@5V; providing standby mode (OSC is stopped and current consumption < 1 uA@5V) and key wake-up mode

◆ Watchdog timer

◆ Dual PWM

◆ Dual 16-bit timer/counters

◆ A/D converter module

    ◆ 8 analog inputs multiplexed into one A/D converter
    ◆ Sample and hold
    ◆ 20 µS conversion time/per channel

- ◆ 12-bit resolution with ± 2 LSB accuracy
- ◆ External reference input, AD_{VRF}

◆ LCD driver (automatically display)

- ◆ LCD direct drive (max. 8-digit display at 1/4 duty)
- ◆ 1/4, 1/3, 1/2 duties and 1/2, 1/3 biases can be selected by programming

◆ Programming lock for software security; read/write protection (signature compare)

◆ Package: 40-pin PDIP

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PACKAGE PIN ASSIGNMENT

Left Pin	#		#	Right Pin
P04/AIN4	1		40	VDD
P05/AIN5	2		39	P03/AIN3
P06/AIN6	3		38	P02/AIN2
P07/AIN7	4		37	P01/AIN1
ADVRF	5		36	P00/AIN0
P20/SEG9	6		35	P35/SEG6
P21/SEG1	7		34	P34/SEG5
P22/SEG1	8		33	P33/SEG4
P23/SEG1	9		32	P32/SEG3
P24/SEG1	10		31	P31/SEG2
P25/SEG14/VCAP1	11	WT50F5	30	P30/SEG1
P26/SEG15/VCAP2	12		29	RESET
P27/SEG16/VCAP3	13		28	EXTINT
P36/SEG7	14		27	XOUT
P37/SEG8	15		26	XIN/ROSC
P10/PWM	16		25	CLKSEL/TEST
P11/PWM	17		24	P17/COM
P12/ECT0	18		23	P16/COM
P13/VLCD	19		22	P15/COM
GND	20		21	P14/COM1