

MSPM0 WWDT module introduction

— MSPM0 peripheral training series

Presented by Sal Ye

MCU level overview

—MSPM0Lxx series

MSPM0L13x3/4/5/6

CPU ARM Cortex-M0+ 32 MHz NVIC / 3-ch DMA	Power & Clocking POR / BOR / SVS Internal LF 32kHz (5%) Internal HF 4-32MHz (1%)	Precision Analog 12-bit SAR ADC 1Msps (1) ULP/HS Comparator (1) 8-bit reference DAC (1) Zero-drift chopper op-amps (2) General purpose amp (1) Internal ADC reference (2.5%) Temperature sensor
On-chip Memory 8, 16, 32 or 64 kB flash 2 or 4 kB SRAM	Communication UART w/ LIN (1) UART (1) SPI (1) I2C (2) w/ FastMode+	Timers General purpose 16-bit 2 CC (4) Windowed watchdog
Data Integrity & Security CRC accelerator (16 and 32 bit)	IO Up to 28 GPIO Up to 2 low Ib OPA inputs	
Programming & Debug ARM SWD interface ROM UART & I2C BSL		

Ledged packages: SOT-16, VSSOP-20/28
 No-lead packages: WQFN-16, VQFN-24/32

1.62 - 3.6V
 -40 to 125 C

32 MHz MCU with up to 64kB flash, 32 pins, 12-bit ADC, dual zero-drift OPA/PGA, COMP

—MSPM0Gxx series

MSPM0G350x/310x/150x/110x

CPU Arm Cortex-M0+ 80 MHz NVIC / MPU / 7-ch DMA	Power & Clocking POR / BOR / SVS External LF 32kHz XTAL External HF 4-48MHz XTAL Internal LF 32kHz (3%) Internal HF 4-32MHz (1%) PLL (up to 80 MHz)	Precision Analog 12-bit ADC 4Msps (9-ch) 12-bit ADC 4Msps (8-ch) Comparators w/ 8-bit DACs (3) 12-bit 1Msps buffered DAC (1) Zero-drift chopper op-amps (2) Internal reference (1.5%) General purpose amp (1) Temperature sensor
Accelerators Math (DIV, SQRT, TRIG, MAC)	Communication UART w/ LIN (1) UART (3) SPI (2) I2C (2) w/ FastMode+ CAN-FD (1)	Timers Advanced control 16-bit 4 CC (1) Advanced control 16-bit 2 CC (1) General purpose 32-bit 2 CC (1) General purpose 16-bit 2 CC (2) Low power 16-bit 2 CC (2) Windowed watchdog (2) Real-time clock (1)
On-chip Memory 32, 64, or 128 kB flash [ECC] 16 or 32 kB SRAM [ECC]	IO Up to 60 GPIO	
Data Integrity & Security CRC accelerator (16 and 32 bit) AES256 accelerator + TRNG		
Programming & Debug ARM SWD interface UART & I2C bootloader		

Ledged packages: VSSOP-20/28, LQFP-48/64
 No-lead packages: VQFN-24/32/48, nFBGA-64, WCSP-28

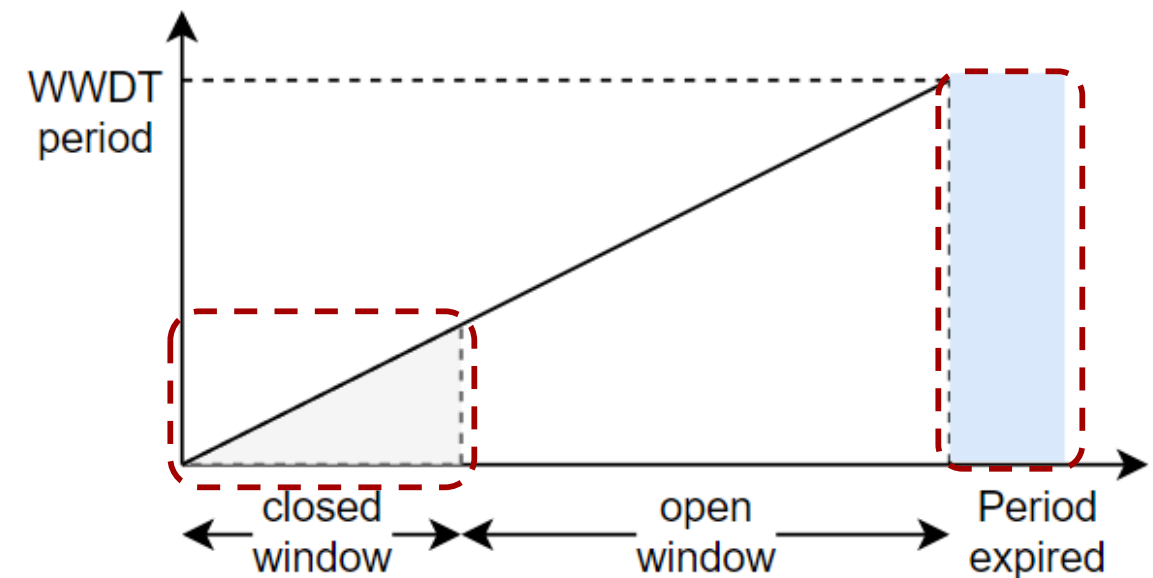
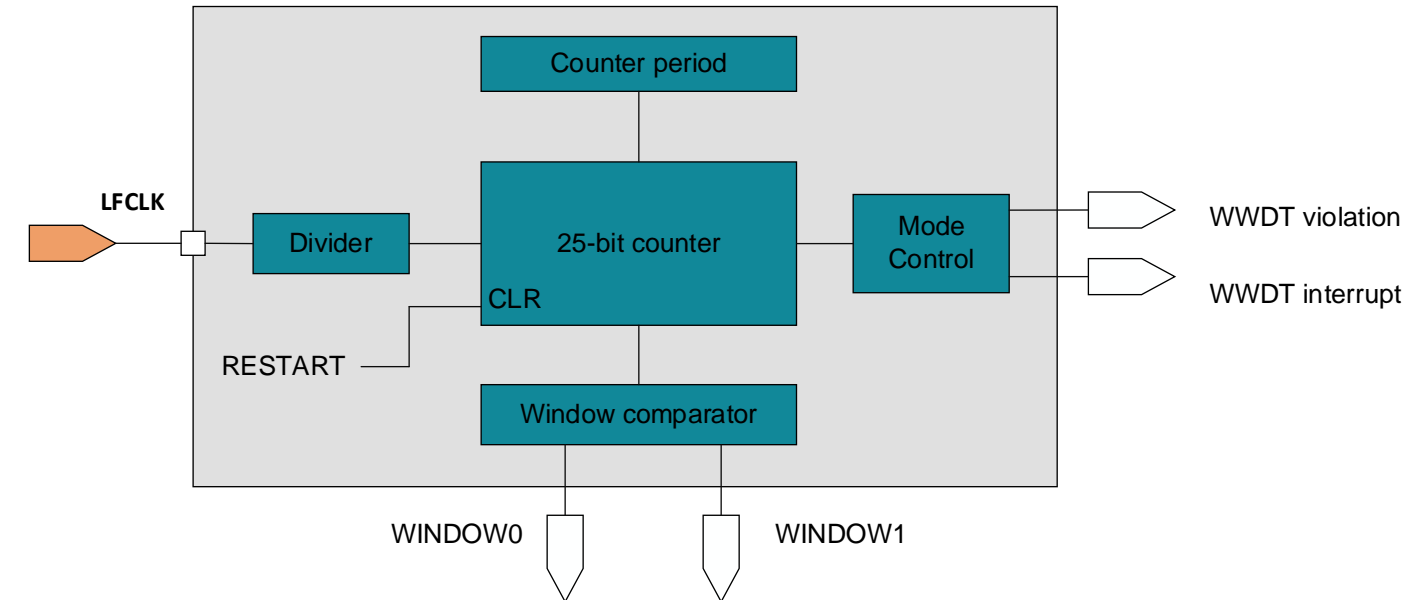
1.62 - 3.6V
 -40 to 125 C

80 MHz MCU with up to 128kB flash, 64 pins, advanced analog, AES/TRNG, CAN-FD

MSPM0 WWDT module introduction

Key Features

- A 25-bit counter sourced from LFCLK
- **Eight** selectable watchdog timer periods
- **Closed and open** window
- SYSRST reset
- Optional automatic suspension of counter when operating in low power modes
- Support for standard window watchdog mode or **interval timer** (non-watchdog) mode



WWDT module quick start

Academy

[Watch dog introduction lab](#)

Driverlib Examples

MSPM0G350x:

- wwdt_interval_timer_lfosc_standby
- wwdt_interval_timer_lfxt_standby
- wwdt_window_mode_periodic_reset

MSPM0L13xx:

- wwdt_interval_timer_lfosc_standby
- wwdt_window_mode_periodic_reset

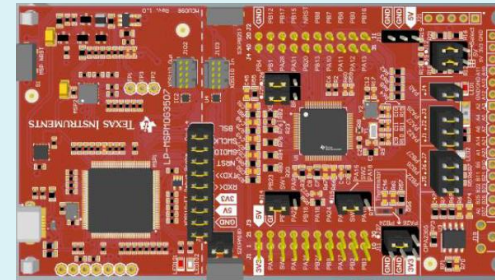
Related Links

- [MSPM0 online resource](#)
- [MSPM0 Quick start guide](#)
- [MSPM0 Sysconfig user's guide](#)

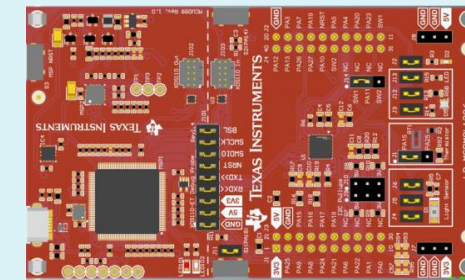
- [MSPM0G350x datasheet](#)
- [MSPM0L13xx datasheet](#)
- [MSPM0Gxx technical reference manual](#)
- [MSPM0Lxx technical reference manual](#)

Launchpad

LP-MSPM0G3507



LP-MSPM0L1306



Sysconfig Entrance for WWDT Setting

Step 1: Select WWDT in the Sysconfig tree.

Step 2: Configure WWDT settings.

Parameter	Value
WWDT Source Clock	LFCLK
WWDT Clock Divider	Divide by 4
Calculated WWDT Source Clock Frequency	8.19 kHz
WWDT Mode	Watchdog Mode
WWDT Period Count	2^12 timer period count
Calculated WWDT Period	500.00 ms
Active Window	Window 0 is active
Window 0 Closed Period	0% closed, 100% open (Window 0 disabled)
Calculated Window 0 Period	0.00 s
Window 1 Closed Period	0% closed, 100% open (Window 1 disabled)
Calculated Window 1 Period	0.00 s
Enable WWDT running during sleep	<input type="checkbox"/>
Interrupt Configuration	
Enable WWDT Interval Timer Interrupt	<input type="checkbox"/>

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