

MSPM0 COMP module introduction

— MSPM0 peripheral training series

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MCU level overview

—MSPM0Lxx series

MSPM0L13x3/4/5/6

1.62 - 3.6V
-40 to 125 C

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

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

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

1.62 - 3.6V
-40 to 125 C

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

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

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

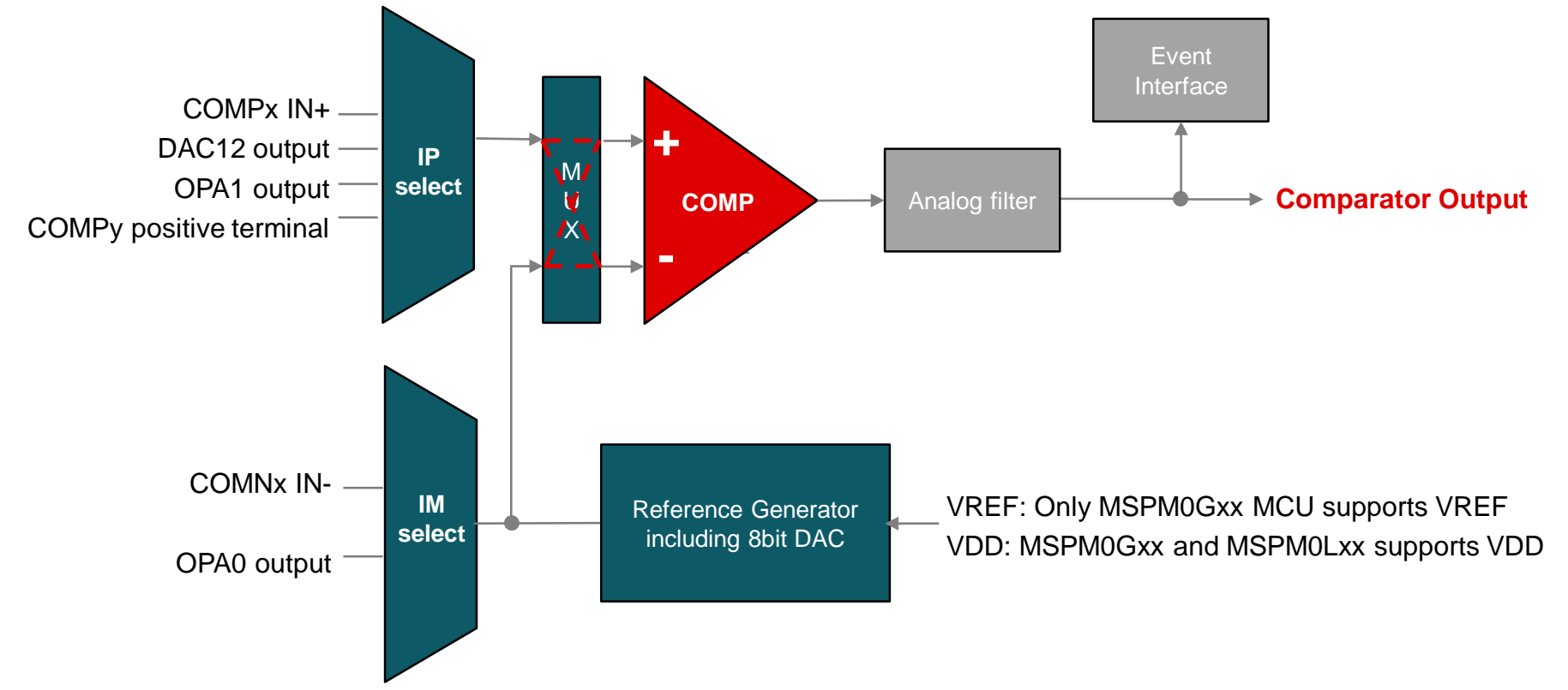
MSPM0L/G COMP module introduction

Key Features

- Fast and ultra-low-power modes of operation
- **TYP 40ns Propagation delay** in High speed mode
- Inverting and non-inverting terminal input multiplexer
- MSPM0G series support **VDD** and **VREF** as the reference source
- MSPM0L series support **VDD** as the reference source
- Software-selectable filter for comparator output
- Programmable hysteresis and Window comparator mode

Key Differences between G and L MCUs

- MSPM0G350x MCUs have **3 Comparator modules**
- MSPM0L130x MCUs have **1 Comparator module**



COMP module quick start

Academy

[COMP introduction lab](#)

Driverlib Examples

MSPM0L/G:

- comp_analog_filter
- comp_dac_to_timer_event
- comp_hs_dac_vref_external
- comp_hs_tima_pwm_fault
- comp_lp_dac_vref_internal

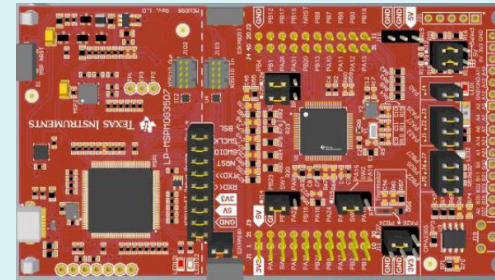
Related Links

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

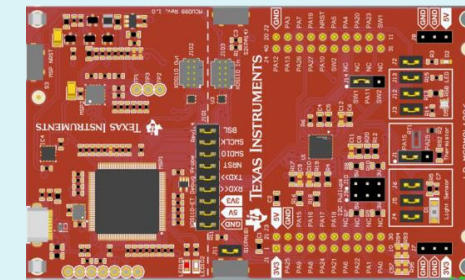
- [MSPM0G350x datasheet](#)
- [MSPM0L13xx datasheet](#)
- [MSPM0Gxx technical reference manual](#)
- [MSPM0Lxx technical reference manual](#)

Launchpad

LP-MSPM0G3507



LP-MSPM0L1306



Sysconfig Entrance for COMP Setting

The screenshot shows the Sysconfig tool interface for configuring the COMP module. On the left, a tree view shows the hardware components, with 'COMP' highlighted under the 'ANALOG' section. A red box around 'COMP' is labeled 'Step 1:'. On the right, the configuration details for 'COMP_0' are shown. A red box around the 'COMP Profiles' dropdown menu, which is set to 'Custom', is labeled 'Step 2:'. Below this, the 'Basic Configuration' section is expanded, showing 'Operating Mode' set to 'Fast mode' and 'Enable Channel Inputs' set to 'Channel input enabled for the neg'.

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- [Ti.com.cn](http://ti.com.cn)
- [WeChat \(德州仪器公众号\)](#)
- [Bilibili](#)
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