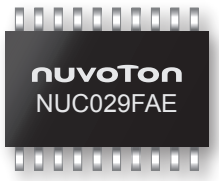
nuvoTon 新唐科技

Nuvoton NuMicro™ Family

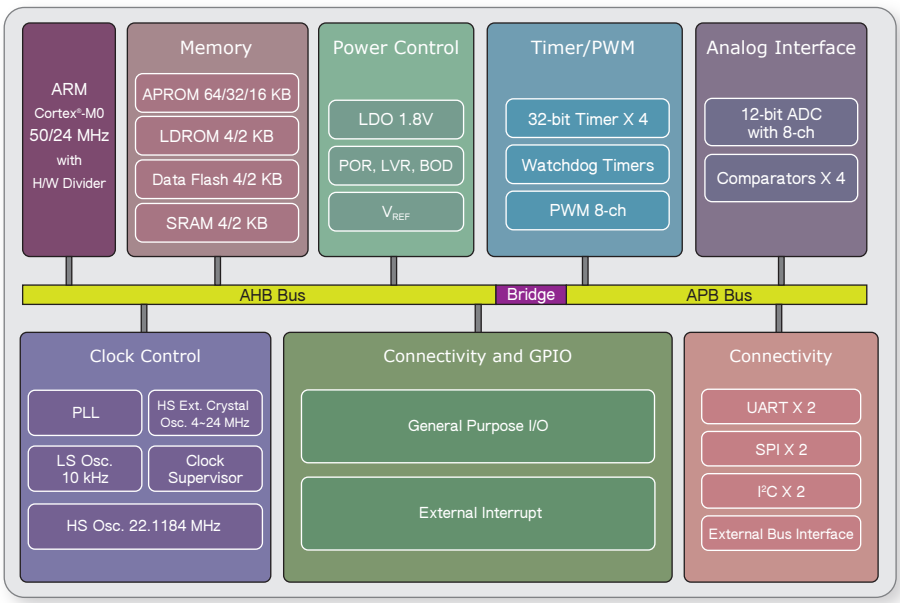
NuMicro™ NUC029 Series



Satisfy All Your Desires with NuMirco™ NUC029 Series

Applications

- Security Alarm System
- Industrial Control
- Communication System
- Smart Building Control
- BLDC Motor Control



Selection Guide

Part No.	Flash (KB)	SRAM (KB)	Data Flash (KB)	ISP ROM (KB)	I/O	Timer (32-bit)	Connectivity			PWM (16-bit)	ADC	Comparator	EBI	ICP ISP IAP	IRC 22 MHz	Package	Operating Temp. Range(°C)
							UART	SPI	I²C								
NuMicro™ NUC029 Series																	
NUC029FAE	16	2	Configurable	2	17	2	1	1	1	3	4 x 10-bit	2	-	√	√	TSSOP20	-40 to +105
NUC029TAN	32	4	4	4	24	4	2	1	1	5	5 x 12-bit	3	-	√	√	QFN33*	-40 to +85
NUC029LAN	64	4	4	4	40	4	2	2	2	8	8 x 12-bit	4	√	√	√	LQFP48	-40 to +85

QFN33*: 4x4mm

Contact us: NuMicro@nuvoton.com

Features of NuMicro™ NUC029 Series

◆ ARM® Cortex®-M0 Core

– Runs up to 50 MHz
– One 24-bit system timer
– A single-cycle 32-bit hardware multiplier
– NVIC for the 32 interrupt inputs, each with 4-levels of priority
– Supports Serial Wire Debug (SWD) interface and two watchpoints/four breakpoints
– Provides hardware divider and supports signed 32-bit dividend, 16-bit divisor operation

◆ Operating Voltage: 2.5 V ~ 5.5 V

◆ Memory

– 16/32/64 KB Flash for program memory (APROM)
– Up to 4 KB Flash for loader (LDROM)
– Up to 4 KB SRAM for internal scratch-pad RAM (SRAM)
– 4 KB Flash for data memory

◆ Clock Control

– Built-in 22.1184 MHz high speed oscillator for system operation
  ■ Trimmed to ±1 % at +25˚C and V_{DD} = 5 V
  ■ Trimmed to ±3 % at -40˚C ~ +105˚C and V_{DD} = 2.5 V ~ 5.5 V
– External 4~24 MHz high speed crystal input
– 10 kHz low-power oscillator for Watchdog Timer and wake-up in Sleep mode
– PLL allows CPU to operate up to 50 MHz

◆ Timer

– Up to four sets of 32-bit timers with 24-bit up counter and one 8-bit prescale counter
– Independent clock source for each timer
– Up to four timer counting modes: One-shot, Periodic, Toggle and Continuous Counting
– Supports internal capture triggered while internal ACMP output signal transition

◆ WDT

– Multiple clock sources
– Supports wake-up from Power-down or Sleep mode
– Interrupt or reset selectable on watchdog time-out

◆ WWDT (NUC029xAN only)

– 6-bit down counter with 11-bit pre-scale for wide range window time selection

◆ PWM/Capture

– Up to four built-in 16-bit PWM generators, providing eight PWM outputs or four complementary paired PWM outputs
– Individual clock source, clock divider, 8-bit pre-scalar and dead-zone generator for each PWM generator
– PWM interrupt synchronized to PWM period
– Polar inverse function
– Center-aligned type function
– Timer duty interrupt enable function
– Two kinds of PWM interrupt period and duty type selection
– Period/duty trigger ADC function

◆ UART

– Up to two sets of UART devices
– Programmable baud-rate generator
– Supports IrDA(SIR) function
– Supports RS-485 function

◆ SPI

– Up to two sets of SPI devices
– Supports Master/Slave mode
– PLL clock source

◆ I^2C

– Up to two sets of I^2C modules
– Supports Master/Slave mode
– Bi-directional data transfer between masters and slaves
– Supports Power-down wake-up function

◆ ADC

– 12-bit SAR ADC with 760 kSPS for NUC029xAN, and 10-bit SAR ADC with 300 kSPS for NUC029FAE
– Up to eight single-end analog input channels
  ■ Four differential analog input channels (NUC029xAN only)
– A/D conversion can be started by:
  ■ Software Write 1 to ADST bit
  ■ External pin (STADC)
  ■ PWM trigger with optional start delay period

◆ Analog Comparator

– Up to four sets of Comparator analog modules

◆ EBI (External Bus Interface) for external memory-mapped device access (NUC029LAN only)

– Accessible space: 64 KB in 8-bit mode or 128 KB in 16-bit mode
– Supports 8-bit or 16-bit data width

◆ ISP (In-System Programming), ICP (In-Circuit Programming), and IAP (In-Application Programming)

◆ One built-in temperature sensor with 1˚C resolution (NUC029xAN only)

◆ Brown-out Detector and Low Voltage Reset

– With 4 levels: 4.4V/3.7V/2.7V/2.2V
– Supports Brown-out interrupt and reset option
– Threshold voltage level: 2.0 V

◆ 96-bit unique ID (UID)

◆ Operating Temperature: -40˚C ~ +105˚C

– NUC029LAN/NUC029TAN: -40˚C ~ +85˚C
– NUC029FAE:-40˚C ~ +105˚C

◆ Packages

– All Green package (RoHS)
– LQFP 48-pin, QFN 33-pin, TSSOP 20-pin