

NuMicro[®] M2A23 Series 125°C Automotive-Grade Microcontroller



► NuMicro[®] M2A23 Series 125°C 5V Arm[®] Cortex[®]-M23 MCU

The M2A23 125°C automotive-grade series is based on the Arm Cortex-M23 core running up to 72 MHz. It provides up to 256 KB of embedded Flash Memory and 24 KB of embedded SRAM, with operating voltage of 2.5V to 5.5V, and up to three sets of CAN FD functions to support automotive applications in body control, ADAS, and telematics.

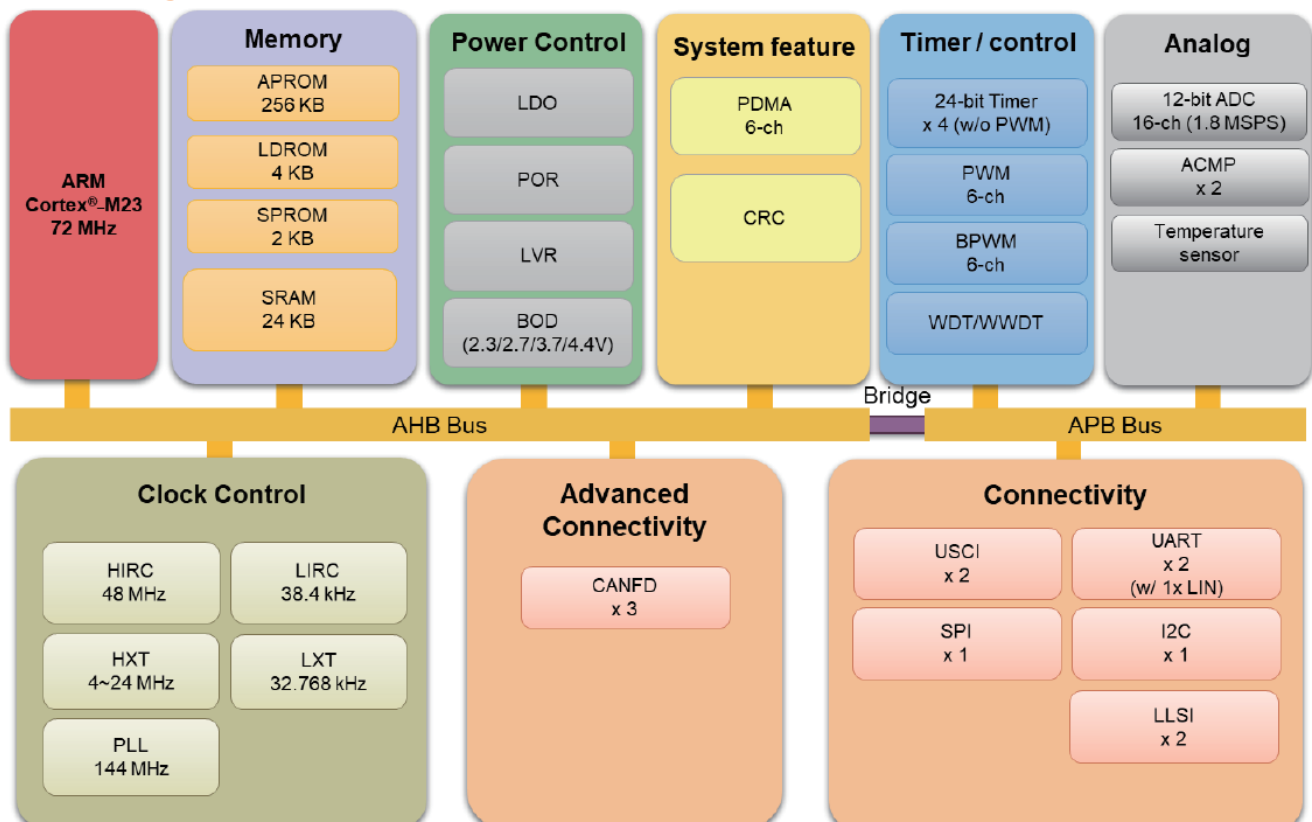
► Key Features

- Arm[®] Cortex[®]-M23 core running up to 72 MHz
- Up to 256 KB flash memory and up to 24 KB SRAM
- Operating temperature: -40°C ~ +125°C
- Operating voltage: 2.5V ~ 5.5V
- Up to 3 sets of CAN FD interfaces
- Supports AEC-Q100 Grade 1 (Certification in Progress)
- 2 KB of SPROM for customizable storage
- 1 set of 6-channel PDMA
- Up to 12-channel 144 MHz PWM
- 1 set of 16-ch 12-bit 1.8 Msps ADC

► Applications

- Body Control
- Motor control
- Smart Lighting
- Telematics
- Industrial control

► Block Diagram



► Package

Flash Memory/
SRAM (Kbytes)

[*]: Ready in 2025

■ Automotive AEC-Q100 Grade 1
■ Industrial Grade 125°C

Package type	I/O pin	Package size	Pin pitch
QFN48	42	5x5mm	0.4 mm
LQFP48	42	7x7mm	0.5 mm
LQFP64	54	7x7mm	0.5 mm

		M2A23LG5ACU[*]	M2A23SG5ACU[*]
256 / 24	M2A23YG5AC	M2A23LG5AC	M2A23SG5AC
128 / 24	M2A23YE5AC	M2A23LE5AC	M2A23SE5AC
64 / 24	M2A23YD5AC	M2A23LD5AC	M2A23SD5AC
Package	QFN48	LQFP48	LQFP64

► Support for Development

Item	Name	Features
IDE & Compiler	Keil NDK IAR EMARM NuEclipse	NuMicro® M2A23 Series is supported by Keil and IAR's. NuEclipse is Nuvoton's proprietary IDE which integrates SDCC with free license.
Debugger & Programmer	Nu-Link2-Me Nu-Link-Pro Nu-Link2-Pro	Debugging, online programming, offline programming (optional), VCOM port, ISP Firmware upgrade
Board Software Package	NuMicro BSP	The BSP mainly includes the device drivers, library, sample codes and documents.

► Evaluation board

- Part No. NuMaker-M2A23SG
- [Quick Start](#)

► Product Selection Guide

Part No.	System							Memory				Timer		Analog		Connectivity						Package		Certification
	Core	Operating Frequency (MHz)	Operating Voltage (min) (V)	Operating Voltage (max) (V)	Operating Temperature (min) (°C)	Operating Temperature (max) (°C)	GPIO	LDROM Flash (KB)	APROM Flash (KB)	SRAM (KB)	PDMA (ch)	Timer (32-bit)	PWM (16-bit)	EADC (12-bit)	ACMP	CAN-FD	LLSI	UART	USCI	I2C	SPI	Package Type	Package Size	
M2A23SG5ACU	Cortex-M23	72	2.5	5.5	-40	125	55	4	256	24	6	4	12	16	2	3	2	2	2	1	1	LQFP64	7x7	Grade 1
M2A23LG5ACU	Cortex-M23	72	2.5	5.5	-40	125	42	4	256	24	6	4	12	12	2	3	2	2	2	1	1	LQFP48	7x7	Grade 1
M2A23SG5AC	Cortex-M23	72	2.5	5.5	-40	125	55	4	256	24	6	4	12	16	2	3	2	2	2	1	1	LQFP64	7x7	-
M2A23LG5AC	Cortex-M23	72	2.5	5.5	-40	125	42	4	256	24	6	4	12	12	2	3	2	2	2	1	1	LQFP48	7x7	-
M2A23YG5AC	Cortex-M23	72	2.5	5.5	-40	125	42	4	256	24	6	4	12	12	2	3	2	2	2	1	1	QFN48	5x5	-
M2A23SE5AC	Cortex-M23	72	2.5	5.5	-40	125	55	4	128	24	6	4	12	16	2	3	2	2	2	1	1	LQFP64	7x7	-
M2A23LE5AC	Cortex-M23	72	2.5	5.5	-40	125	42	4	128	24	6	4	12	12	2	3	2	2	2	1	1	LQFP48	7x7	-
M2A23YE5AC	Cortex-M23	72	2.5	5.5	-40	125	42	4	128	24	6	4	12	12	2	3	2	2	2	1	1	QFN48	5x5	-
M2A23SD5AC	Cortex-M23	72	2.5	5.5	-40	125	55	4	64	24	6	4	12	16	2	3	2	2	2	1	1	LQFP64	7x7	-
M2A23LD5AC	Cortex-M23	72	2.5	5.5	-40	125	42	4	64	24	6	4	12	12	2	3	2	2	2	1	1	LQFP48	7x7	-
M2A23YD5AC	Cortex-M23	72	2.5	5.5	-40	125	42	4	64	24	6	4	12	12	2	3	2	2	2	1	1	QFN48	5x5	-

