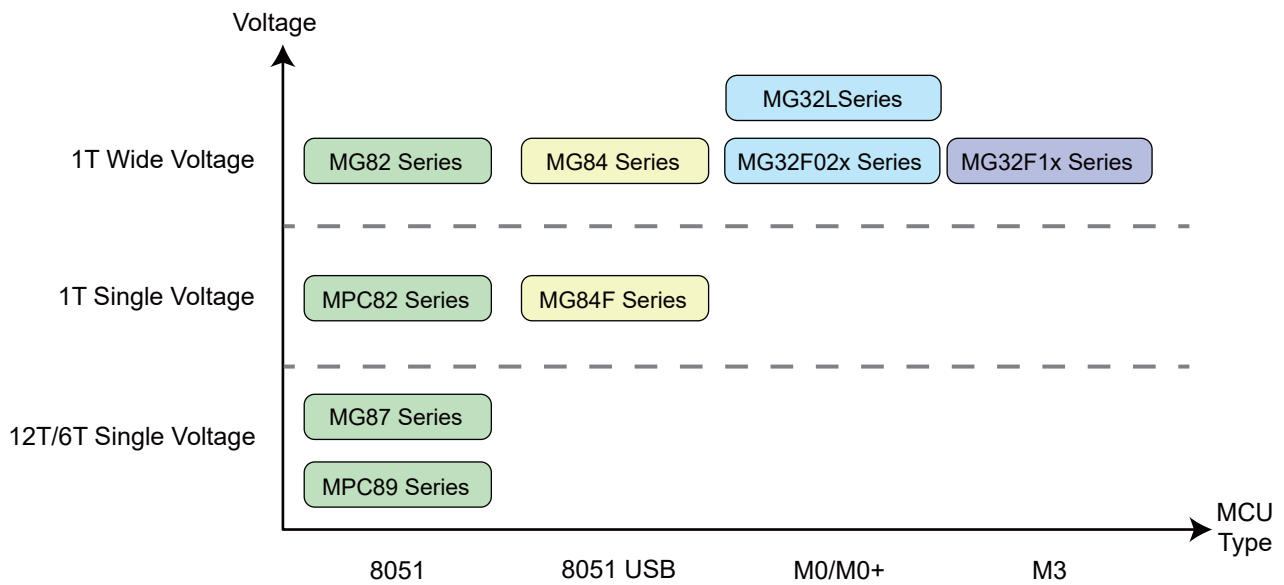
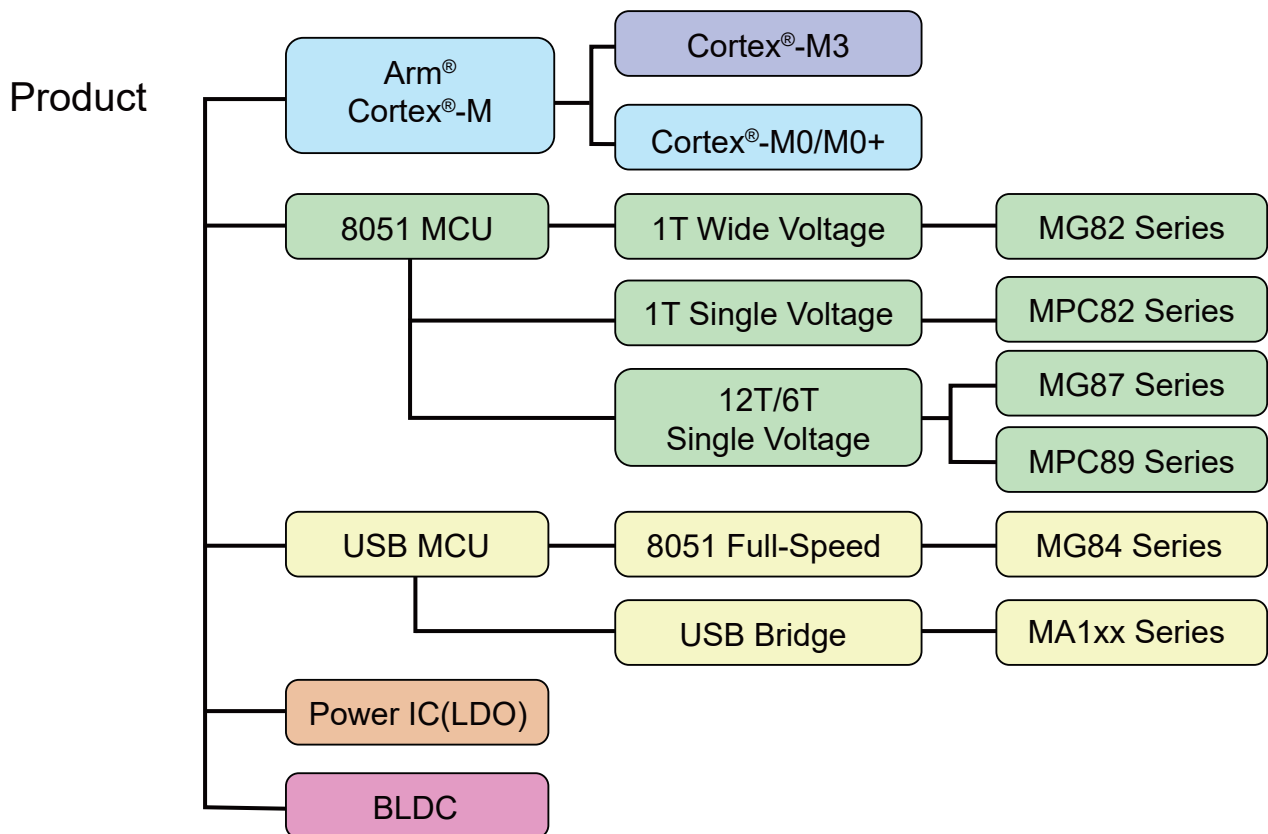


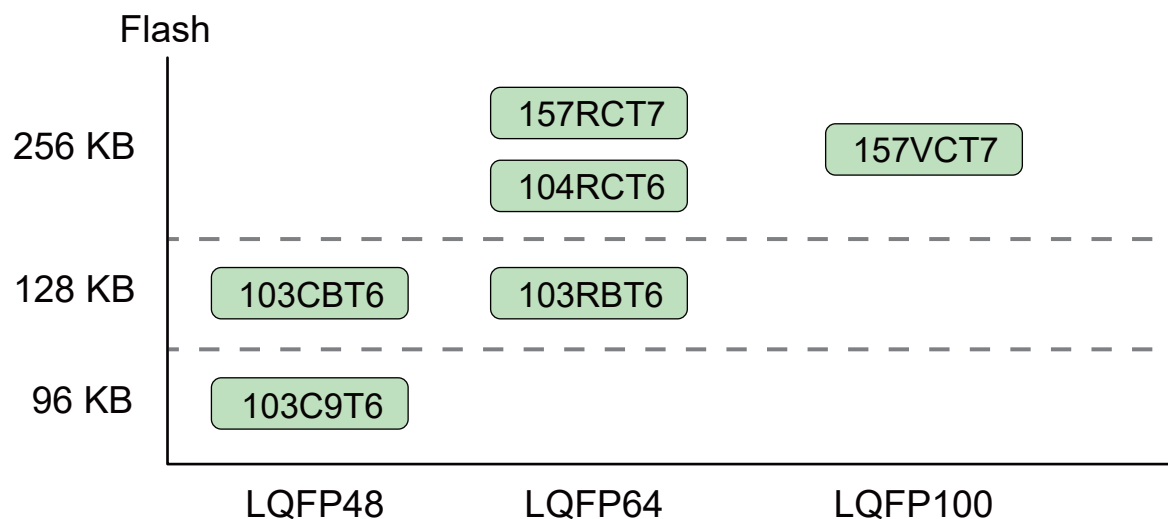
## 8 bit 8051/32 bit Arm® Cortex®-M0/M0+/M3 Flash MCUs



### Product Category:



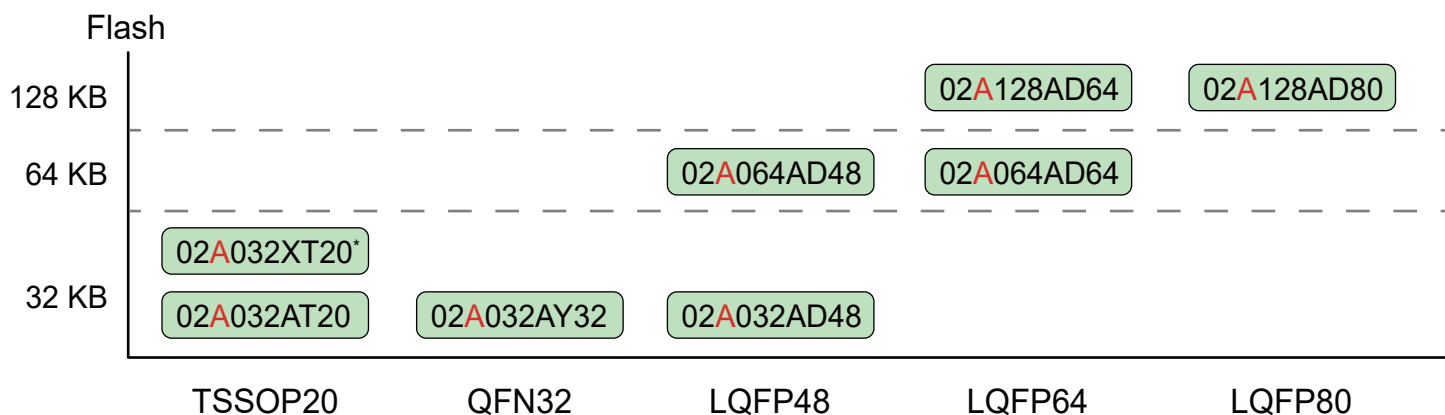
# Arm® Cortex®-M3 Base Line : MG32F1x Series



Item	Vdd	Flash ROM	Data RAM	Max Freq.	20-Bit Timer	IO	12-Bit ADC	Comp.	Features	Package
MG32F103C9T6	2V~3.6V	96KB	28KB	72MHz	4+RTC	37	10-CH	2	UARTx3, I <sup>2</sup> C x2, SPI Mx1, SPI S x2, QSPI, I <sup>2</sup> S, USB, LED SEG x8	LQFP48
MG32F103CBT6	2V~3.6V	128KB	28KB	72MHz	4+RTC	37	10-CH	2	UARTx3, I <sup>2</sup> C x2, SPI Mx1, SPI S x2, QSPI, I <sup>2</sup> S, USB, LED SEG x8	LQFP48
MG32F103RBT6	2V~3.6V	128KB	28KB	72MHz	4+RTC	51	16-CH	2	UARTx3, I <sup>2</sup> C x2, SPI Mx1, SPI S x2, QSPI, I <sup>2</sup> S, USB, LED SEG x8	LQFP64
MG32F104RCT6	2V~3.6V	256KB	36KB	96MHz	4+RTC	51	16-CH	2	UARTx3, I <sup>2</sup> C x2, SPI Mx1, SPI S x2, QSPI, I <sup>2</sup> S, USB, LED SEG x8	LQFP64
MG32F157RCT7	2V~3.6V	256KB	64KB	96MHz	8+RTC	51	18-CH	3 <sup>1</sup>	UARTx5, I <sup>2</sup> C x2, SPIx3, QSPI, CAN, USB, SDIO, CRC, OPAx3, AES, DACx2, ADC x3	LQFP64
MG32F157VCT7	2V~3.6V	256KB	64KB	96MHz	8+RTC	80	18-CH	3 <sup>1</sup>	UARTx5, I <sup>2</sup> C x2, SPIx3, QSPI, CAN, USB, SDIO, CRC, OPAx3, AES, DACx2, ADC x3	LQFP100

<sup>1</sup> Comparator shared with OPA

## Arm® Cortex®-M0 Base Line: MG32F02A Series



Item	Vdd	Flash ROM	Data RAM	Max. Freq.	Timer	IO	12-Bit ADC	Comp.	Features	CCP <sup>4</sup>	ISP/IAP	Package
MG32F02A032 <sup>*1</sup>	1.8V~5.5V	32KB	4KB	48MHz	5+RTC	17/29/44	12-CH	2	UART <sup>2</sup> x2, I <sup>2</sup> C, SPI/QPI, PWM, CRC32, DMA	4-CH	YES <sup>3</sup>	TSSOP20 QFN32 LQFP48
MG32F02A064 <sup>*1</sup>	1.8V~5.5V	64KB	8KB	48MHz	7+RTC	44/59	16-CH	2	UART <sup>5</sup> x7, I <sup>2</sup> C x2, SPI <sup>6</sup> x4, CRC32, DMA, DAC, EMB	8-CH	YES <sup>3</sup>	LQFP48 LQFP64
MG32F02A128 <sup>*1</sup>	1.8V~5.5V	128KB	16KB	48MHz	7+RTC	59/73	16-CH	2	UART <sup>5</sup> x7, I <sup>2</sup> C x2, SPI <sup>6</sup> x4, CRC32, DMA, DAC, EMB	8-CH	YES <sup>3</sup>	LQFP64 LQFP80

\* MG32F02A032XT20 Supports operation temperature: -40~125°C;

<sup>\*1</sup> Support M-LINK ICE;

<sup>\*2</sup> All UART support SPI Master;

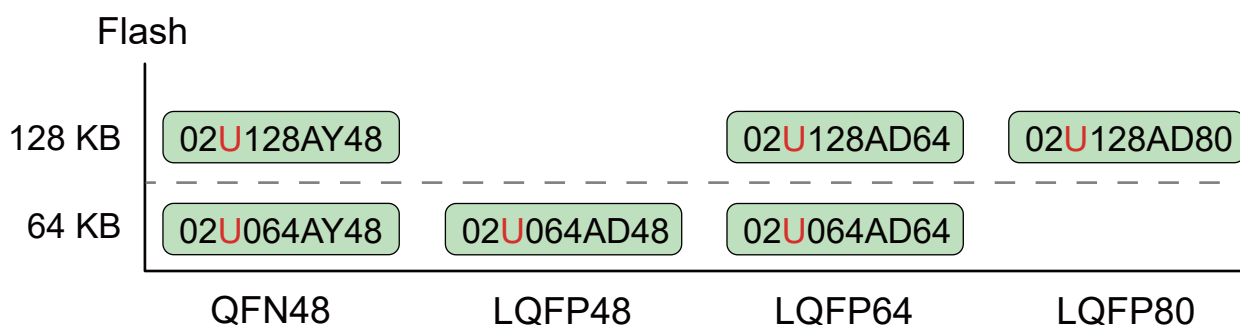
<sup>\*3</sup> Share with all Flash zone;

<sup>\*4</sup> CCP: Input Capture/Output Compare/PWM;

<sup>\*5</sup> Advanced UART x 3: Support SPI Master/Slave (UART 0/1/2 modules); Basic UART x 4: UART only (UART 4/5/6/7 modules).

<sup>\*6</sup> Advanced SPI x 1: Support SPI/QPI/OPI (SPI 0 modules); Basic SPI x 3: Standard SPI only (Configurable in UART 0/1/2 modules).

## Arm® Cortex®-M0 USB Line : MG32F02U Series



Item	Vdd	Flash ROM	Data RAM	Max. Freq.	Timer	IO	12-Bit ADC	Comp.	Features	CCP <sup>3</sup>	ISP/IAP	Package
MG32F02U064 <sup>*1</sup>	1.8V~5.5V	64KB	16KB	48MHz	7+RTC	41/56	16-CH	2	UART <sup>4</sup> x7, I <sup>2</sup> C x2, SPI <sup>5</sup> x4, USB, CRC32, DMA, DAC, EMB	8-CH	YES <sup>2</sup>	QFN48 LQFP48 LQFP64
MG32F02U128 <sup>*1</sup>	1.8V~5.5V	128KB	16KB	48MHz	7+RTC	56/70	16-CH	2	UART <sup>4</sup> x7, I <sup>2</sup> C x2, SPI <sup>5</sup> x4, USB, CRC32, DMA, DAC, EMB	8-CH	YES <sup>2</sup>	QFN48 LQFP64 LQFP80

<sup>\*1</sup> Support M-LINK ICE;

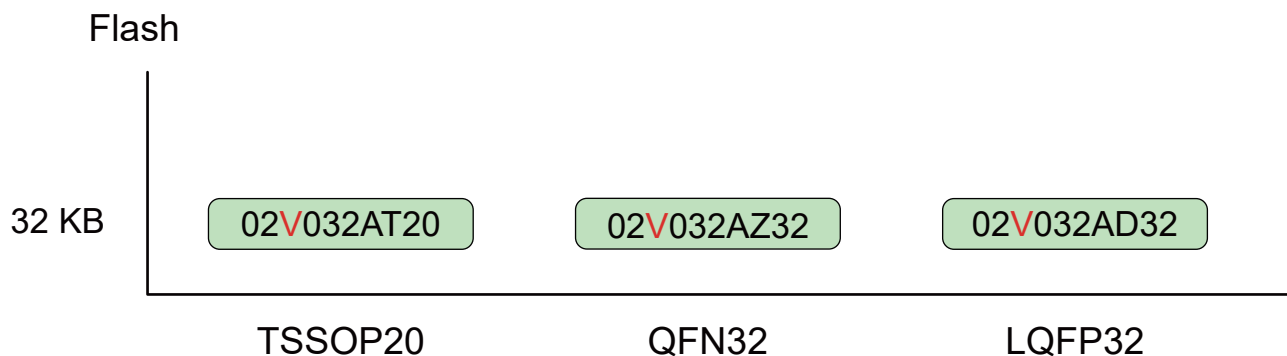
<sup>\*2</sup> Share with all Flash zone;

<sup>\*3</sup> CCP: Input Capture/Output Compare/PWM;

<sup>\*4</sup> Advanced UART x 3: Support SPI Master/Slave (UART 0/1/2 modules); Basic UART x 4: UART only (UART 4/5/6/7 modules);

<sup>\*5</sup> Advanced SPI x 1: Support SPI/QPI/OPI (SPI 0 module); Basic SPI x 3: Standard SPI only (Configurable in UART 0/1/2 modules).

## Arm® Cortex®-M0 Value Line: MG32F02V Series



Item	Vdd	Flash ROM	Data RAM	Max Freq.	Timer	IO	12-Bit ADC	Comp.	Features	CCP <sup>4</sup>	ISP/IAP	Package
<b>MG32F02V032*1</b>	1.8V~3.6V	32KB	4KB	48MHz	6+RTC	17/29	8-CH	NA	UART <sup>5</sup> x3, I <sup>2</sup> C x2 SPI/QPI,PWM CRC32,DMA,ASB	6-CH	YES <sup>3</sup>	TSSOP20 LQFP32 QFN32

\*1 Support M-LINK ICE;

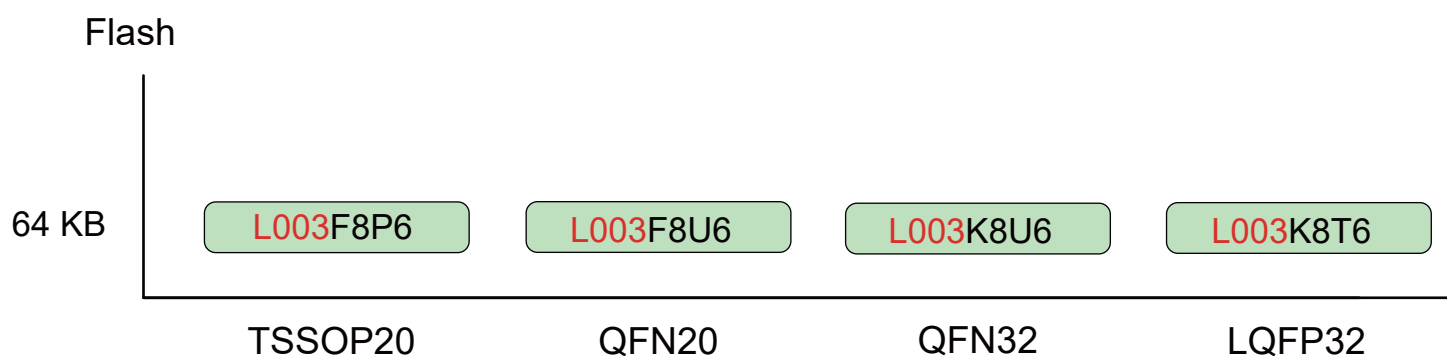
\*2 All UART support SPI Master;

\*3 Share with all Flash zone;

\*4 CCP: Input Capture/Output Compare/PWM;

\*5 Advanced UART x2 : Support SPI Master/Slave.(UART 0/1 modules)

## Arm® Cortex®-M0+ Low-Power Line: MG32L003 Series



Item	Vdd	Flash ROM	Data RAM	Max Freq.	Timer	IO	12-Bit ADC	ACMP.	Features	CCP <sup>4</sup>	ISP/IAP	Package
<b>MG32L003*1</b>	2.5V~5.5V	64KB	4KB	24MHz	9+RTC UP Timer	16/28	15-CH	1 <sup>6</sup>	UART <sup>2</sup> x2,LPUART, I <sup>2</sup> C,SPI,PWM, CRC16,1-Wire	6-CH	YES <sup>3</sup>	TSSOP20 QFN20 QFN32 LQFP32

\*1 Support M-LINK ICE;

\*2 All UART support SPI Master;

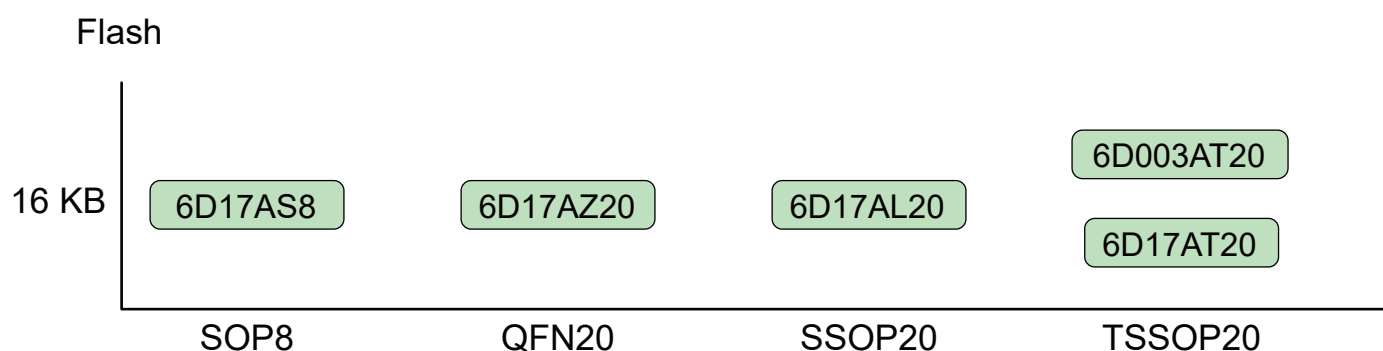
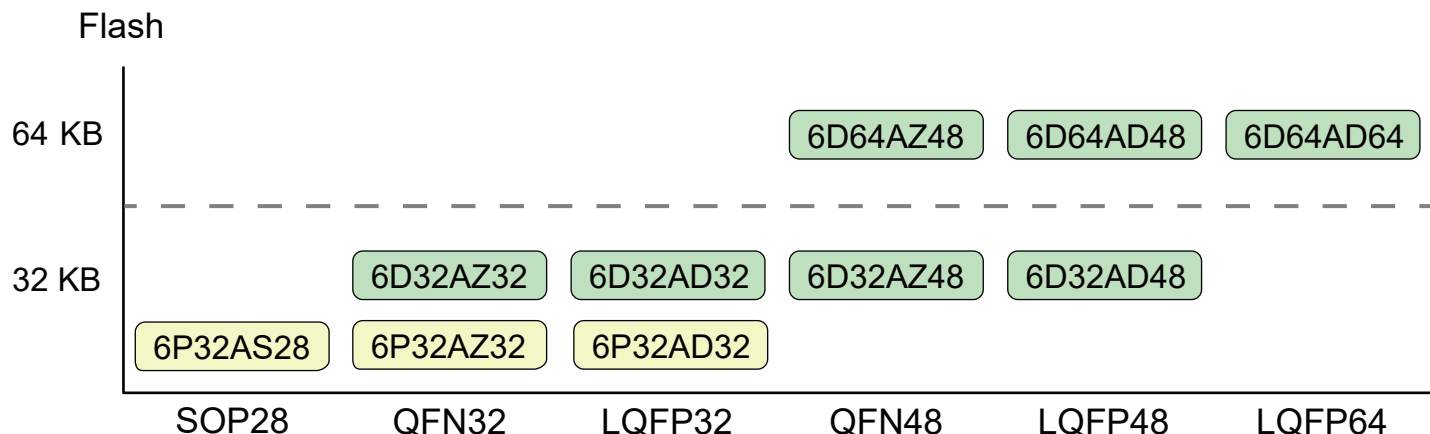
\*3 Share with all Flash zone;

\*4 CCP: Input Capture/Output Compare/PWM;

\*5 Advanced UART x2 : Support SPI Master/Slave. (UART 0/1 modules)

\*6 Low Voltage Detector (LVD) / Voltage Comparator (ACMP)

# 1T 8051 Wide Voltage Base Line: MG82F6D/6P Series with 12 Bit ADC



Item	Operating Voltage	Flash ROM		Max. Operation Freq.	Timer (16-Bit)		12-Bit ADC		Features	PCA		WDT	ISP		Package
		Data	RAM		IO	ACMP	PWM	IAP							
MG82F6D003 <sup>*1</sup>	1.8V~5.5V	16KB	1KB	36MHz <sup>*5</sup>	4 + RTC	8-CH	UART <sup>*2</sup> x2, SPI, I <sup>2</sup> C S/W I <sup>2</sup> C, LIN,CRC16	1	YES <sup>*3</sup>	7.5KB Max.	TSSOP20				
		17			NA	8-CH		15.5KB Max. <sup>*4</sup>							
MG82F6D17 <sup>*1</sup>	1.8V~5.5V	16KB	1KB	36MHz <sup>*5</sup>	4 + RTC	8-CH	UART <sup>*2</sup> x2, SPI, I <sup>2</sup> C S/W I <sup>2</sup> C, LIN,CRC16	1	YES <sup>*3</sup>	7.5KB Max.	SOP8 QFN20 SSOP20 TSSOP20				
		5/17			NA	8-CH		15.5KB Max. <sup>*4</sup>							
MG82F6P32 <sup>*1</sup>	1.8V~5.5V	32KB	2KB	32MHz <sup>*5</sup>	6 + RTC	8-CH	OPAx2, PGA, PD decode, UART <sup>*2</sup> x2, SPI, I <sup>2</sup> Cx2 S/W I <sup>2</sup> C, LIN,CRC16	2	YES <sup>*3</sup>	7.5KB Max.	SOP28 QFN32 LQFP32				
		25/29			2	8-CH		31.5KB Max. <sup>*4</sup>							
MG82F6D32 <sup>*1</sup>	1.8V~5.5V	32KB	2KB	36MHz <sup>*5</sup>	4 + RTC	10-CH	UART <sup>*2</sup> x2, SPI, I <sup>2</sup> Cx2 S/W I <sup>2</sup> C, LIN,CRC16	1	YES <sup>*3</sup>	7.5KB Max.	QFN32 LQFP32				
		29/44			2	8-CH		31.5KB Max. <sup>*4</sup>							
MG82F6D64 <sup>*1</sup>	1.8V~5.5V	64KB	4KB	36MHz <sup>*5</sup>	5 + RTC	16-CH	UART <sup>*2</sup> x4, SPI, I <sup>2</sup> Cx2 S/W I <sup>2</sup> C, LIN,CRC16	1	YES <sup>*3</sup>	7.5KB Max.	QFN48 LQFP48 LQFP64				
		44/59			3	8-CH		63.5KB Max. <sup>*4</sup>							

Support Code Protection

<sup>\*1</sup> Support M-LINK ICE, except SOP8;

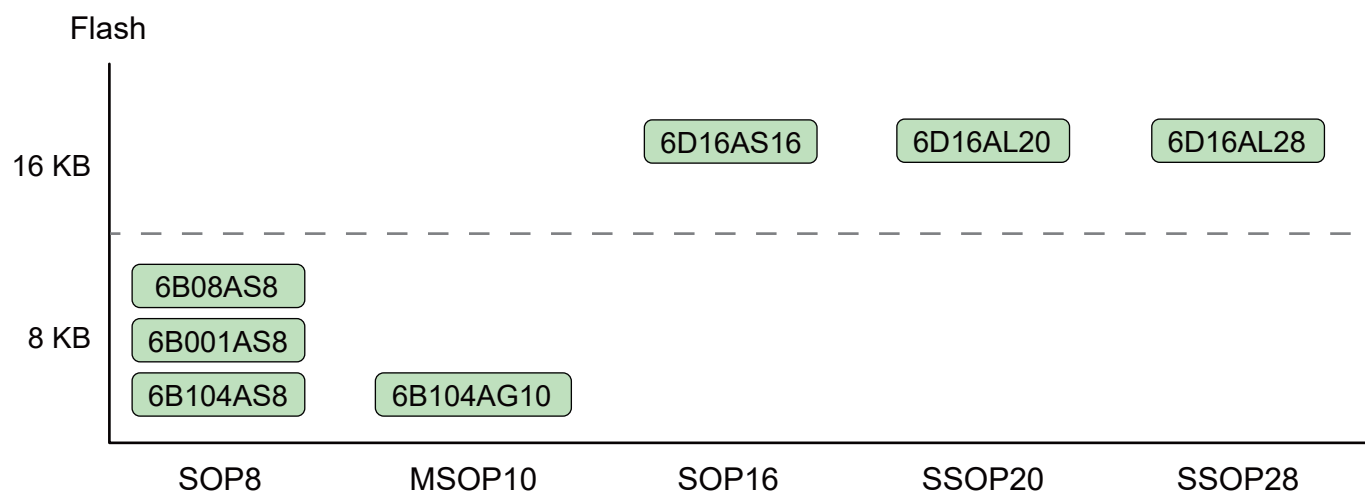
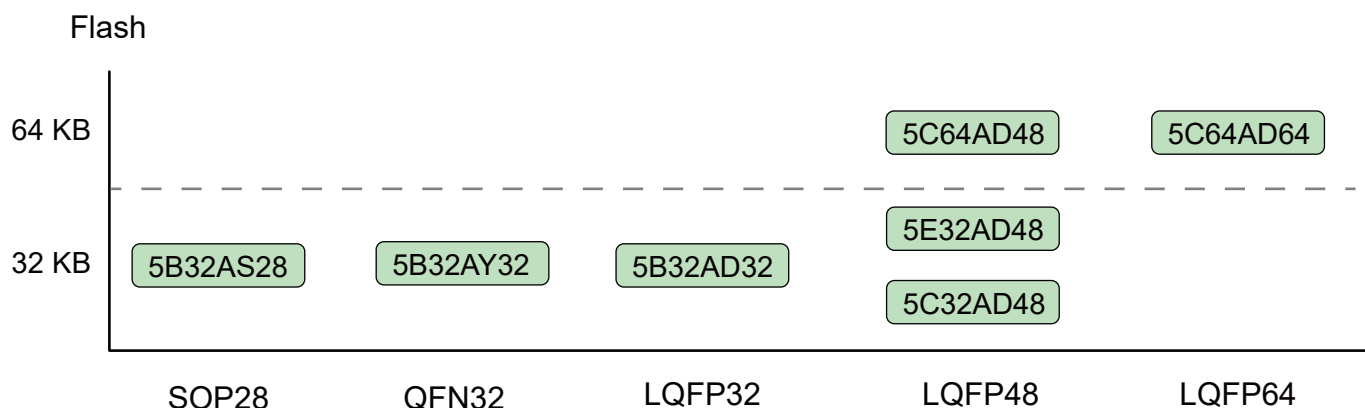
<sup>\*2</sup> Support SPI Master Mode;

<sup>\*3</sup> Support Watch Mode;

<sup>\*4</sup> Support S/W setting;

<sup>\*5</sup> 12MHz and 11.059MHz as internal RC oscillator, used 12MHz as default. Frequency deviation: at 25°C, under ±1% ; at -40°C~105°C, under ±2%.

# 1T 8051 Wide Voltage Base Line: MG82FG 5x/6x Series with 10 Bit ADC



Item	Operating Voltage	Flash ROM		Max Operation Freq.	Timer (16-Bit)		10-Bit ADC	Features	PCA		WDT	ISP		Package
		Data	RAM		IO	ACMP			PWM	IAP				
MG82F6B08 <sup>1</sup> MG82F6B001 <sup>1</sup> MG82F6B104 <sup>1</sup>	2.4V~5.5V	8KB	1KB	16/22.12 MHz <sup>6</sup>	3 + RTC	6-CH	UART <sup>2</sup> ,SPI,LIN S/W I <sup>2</sup> C,I <sup>2</sup> C,CRC16	1	YES <sup>3</sup>	3.5KB Max. EEPROM 512B IAP Default NA	SOP8 MSOP10			
6/8		1			4-CH									
MG82F6D16 <sup>1</sup>	1.8V~5.5V	16KB	1KB	32MHz <sup>5</sup>	3 + RTC	8-CH	UART <sup>2</sup> ,SPI,LIN I <sup>2</sup> C,S/W I <sup>2</sup> C,CRC16	1	YES <sup>3</sup>	7.5KB Max. 15.5KB Max. <sup>4</sup>	SOP16 SSOP20 SSOP28			
		13/17/25			1	6-CH								
MG82FG5B32 <sup>1</sup>	1.8V~5.5V	32KB	2KB	25MHz <sup>5</sup>	3 + RTC	8-CH	UART <sup>2</sup> x2,SPI ISO-7816,LIN,I <sup>2</sup> Cx2	1	YES <sup>3</sup>	4KB Max. 31.5KB Max. <sup>4</sup>	QFN32 LQFP32			
		29			NA	8-CH								
MG82F5B32 <sup>1</sup>	1.8V~5.5V	32KB	2KB	32MHz	3 + RTC	8-CH <sup>7</sup>	UART <sup>2</sup> x2,SPI ISO-7816,LIN,I <sup>2</sup> C	1	YES <sup>3</sup>	4KB Max. 31.5KB Max. <sup>4</sup>	SSOP20 SOP28 LQFP32			
		17/25/29			NA	8-CH								
MG82FG5C32 <sup>1</sup>	1.8V~5.5V	32KB	2KB	32MHz <sup>5</sup>	5 + RTC	16-CH	UART <sup>2</sup> x4,SPI/QPI I <sup>2</sup> Cx2,LIN,ISO-7816x3	2	YES <sup>3</sup>	7.5KB Max. 31.5KB Max. <sup>4</sup>	LQFP48			
		44			3	12-CH								
MG82FG5C64 <sup>1</sup>	1.8V~5.5V	64KB	4KB	32MHz <sup>5</sup>	5 + RTC	16-CH	UART <sup>2</sup> x4,SPI/QPI I <sup>2</sup> Cx2,LIN,ISO-7816x3	2	YES <sup>3</sup>	7.5KB Max. 63.5KB Max. <sup>4</sup>	LQFP48 LQFP64			
		59			3	12-CH								
MG82G5E32 <sup>1</sup>	1.8V~5.5V	32KB	2KB	32MHz <sup>5</sup>	4 + RTC	8-CH	UART <sup>2</sup> x2,SPI,I <sup>2</sup> C S/W I <sup>2</sup> C,CRC16	1	YES <sup>3</sup>	7.5KB Max. 31.5KB Max. <sup>4</sup>	LQFP48			
		44			2	8-CH								

Support Code Protection;<sup>1</sup> Support M-LINK ICE, except SOP8;<sup>2</sup> Support SPI Master Mode;

<sup>3</sup> Support Watch Mode;<sup>4</sup> Support S/W setting;

<sup>5</sup> 12MHz and 11.059MHz as internal RC oscillator, used 12MHz as default. Frequency deviation: at 25°C, under ±1% ; at -40°C~85°C, under ±2%;

<sup>6</sup> 16MHz and 22.12MHz as internal RC oscillator. Frequency deviation: at 25°C, under ±2% ; at -40°C~85°C, under ±3.8%;

<sup>7</sup> Factory default 10 Bit,200Ksps; Program adjustment 12 Bit,400Ksps.

# Automotive-Grade MCU: MGEQ1C064

Item	Operating Voltage	Flash ROM		Max. Operation Freq.	Timer (16-Bit)		12-Bit ADC	Features	PCA		WDT	ISP		Package
		Data RAM			IO	ACMP			PWM			IAP		
MGEQ1C064 <sup>*1</sup>	2.4V~5.5V	64KB	4KB	36MHz	5 + RTC	16-CH	UART <sup>*2</sup> x2,SPI,I <sup>2</sup> Cx2 S/W I <sup>2</sup> C,LIN,CRC16	1	8-CH	YES <sup>*2</sup>	7.5KB Max.	63.5KB Max. <sup>*3</sup>	LQFP48	
					44	3								

Passed the certification of AEC-Q100 Grade 2 (Support operation temperature: -40~105°C)

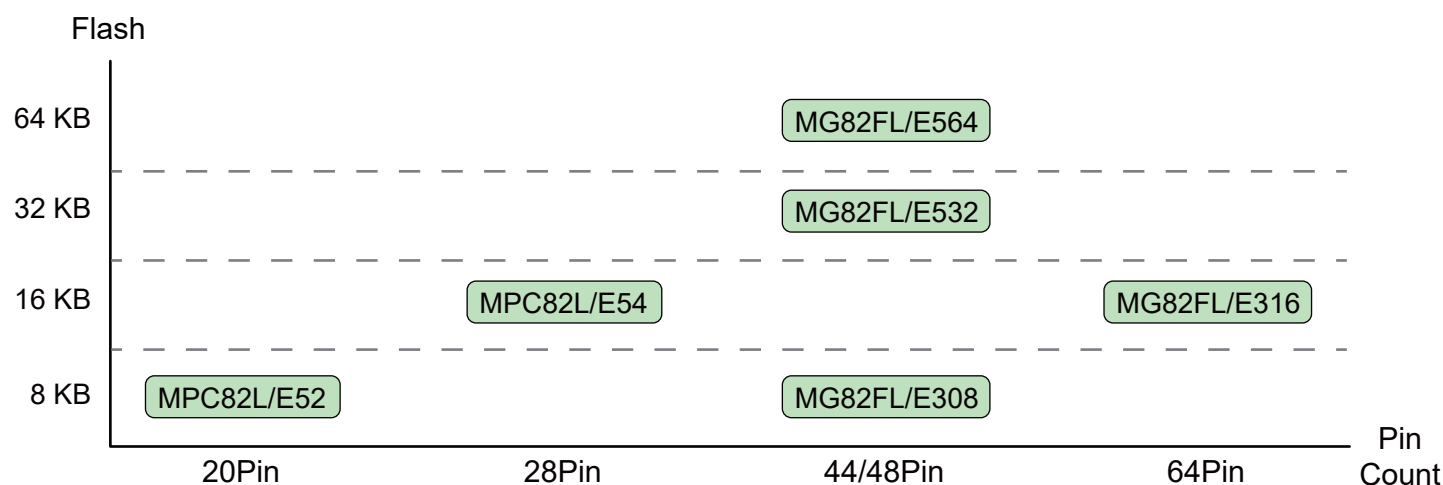
Support Code Protection

<sup>\*1</sup> Support SPI Master Mode;

<sup>\*2</sup> Support Watch Mode;

<sup>\*3</sup> Support S/W setting.

# 1T 8051 Single Voltage MCU: MPC82 / MG82F Series



Item	Operating Voltage	Flash ROM		Max Operation Freq.	Timer (16-Bit)		ADC	Comm.	PCA		WDT	Code Protection	ISP		Package
		Data RAM			IO	ACMP			PWM				IAP		
MPC82L/E52	L:2.4V~3.6V E:4.5V~5.5V	8KB	256B	25MHz	2	8-Bit,8-CH	UART,SPI	1	2-CH	YES	YES	3KB Max.	7.5KB Max.	PDIP20 SOP20 TSSOP20	
		15			NA										
MPC82L/E54	L:2.4V~3.6V E:4.5V~5.5V	15.5KB	512B	25MHz	2	10-Bit,8-CH	UART,SPI	1	4-CH	YES	YES	3.5KB Max.	15KB Max.	PDIP28 SOP28 SSOP28	
		23			NA										
MG82FL/E532 <sup>*1</sup>	L:2.4V~3.6V E:4.5V~5.5V	32KB	1280B	24MHz <sup>*2</sup>	3	10-Bit,8-CH	UARTx2,SPI	1	6-CH	YES <sup>*4</sup>	YES	4KB Max.	32KB Max. <sup>*5</sup>	LQFP44 LQFP48	
		45			NA										
MG82FL/E564 <sup>*1</sup>	L:2.4V~3.6V E:4.5V~5.5V	64KB	1280B	24MHz <sup>*2</sup>	3	10-Bit,8-CH	UARTx2,SPI	1	6-CH	YES <sup>*4</sup>	YES	4KB Max.	63.5KB Max. <sup>*5</sup>	LQFP44 LQFP48	
		45			NA										
MG82FL/E308	L:2.4V~3.6V E:4.5V~5.5V	8KB	512B	24MHz <sup>*3</sup>	3	NA	UART	NA	1-CH	YES	YES	4KB Max.	8KB Max. <sup>*5</sup>	LQFP48	
		45			1										
MG82FL/E316	L:2.4V~3.6V E:4.5V~5.5V	16KB	512B	24MHz <sup>*3</sup>	3	NA	UART	NA	1-CH	YES	YES	4KB Max.	15.5KB Max. <sup>*5</sup>	LQFP64	
		57			1										

<sup>\*1</sup> Support OCD ICE;

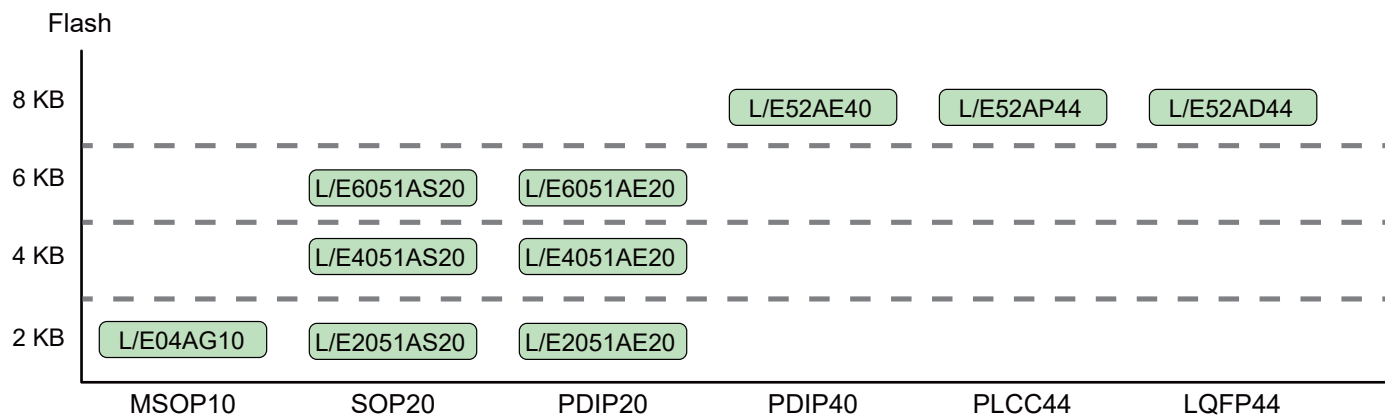
<sup>\*2</sup> Used internal RC oscillator 22.118MHz as default. Frequency deviation: at 25°C,under ±1%; at-20°C ~50°C,under ±2% ; at-40°C ~85°C, under ±4%;

<sup>\*3</sup> Internal RC oscillator 12MHz as default. Frequency deviation: at 25°C,under ±1%; at-20°C ~50°C,under ±2% ; at-40°C ~85°C, under ±4%;

<sup>\*4</sup> Support Watch Mode;

<sup>\*5</sup> Support S/W setting.

## 12T/6T 8051 Single Voltage with internal RC oscillator MCU: MG87 Series

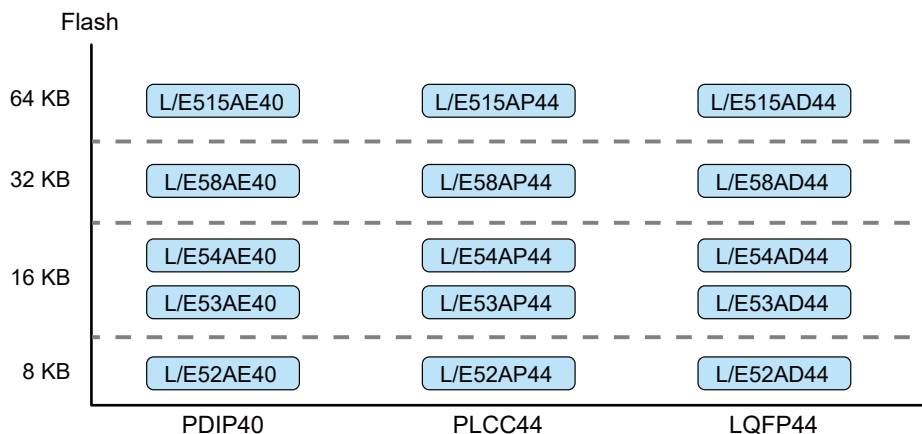


Item	Operating Voltage	Flash ROM Data RAM	Max. Operation Freq.	Timer (16-Bit)		ACMP	Comm.	PCA PWM	WDT	ISP IAP	Package
				IO							
MG87FL/E52*	L:2.4V~3.6V E:4.5V~5.5V	8KB	48MHz @ 12T 24MHz @ 6T	3	32/36	NA	UART	NA	YES	3.5KB Max.	PDIP40 PLCC44 LQFP44
		256B		NA				S/W setting			
MG87FL/E2051*	L:2.4V~3.6V E:4.5V~5.5V	2KB	48MHz @ 12T 24MHz @ 6T	2	17	1	UART	NA	YES	3.5KB Max.	PDIP20 SOP20
		256B		1-CH				S/W setting			
MG87FL/E4051*	L:2.4V~3.6V E:4.5V~5.5V	4KB	48MHz @ 12T 24MHz @ 6T	2	17	1	UART	NA	YES	3.5KB Max.	PDIP20 SOP20
		256B		1-CH				S/W setting			
MG87FL/E6051*	L:2.4V~3.6V E:4.5V~5.5V	6KB	48MHz @ 12T 24MHz @ 6T	2	17	1	UART	NA	YES	3.5KB Max.	PDIP20 SOP20
		256B		1-CH				S/W setting			
MG87FL/E04	L:2.4V~3.6V E:4.5V~5.5V	4KB	22.118MHz/Int RC	2	7	1	UART	NA	YES	1.5KB	MSOP10
		256B		1-CH				S/W setting			

Support Code Protection

\* Built-in internal RC oscillator with  $\pm 1\%$  frequency deviation at 25°C. And there are 6 kinds of frequency selectable: 6M/11.059M/12M/22.118M/24M/24.576MHz.

## 12T/6T 8051 Single Voltage without internal RC oscillator MCU : MPC89 Series

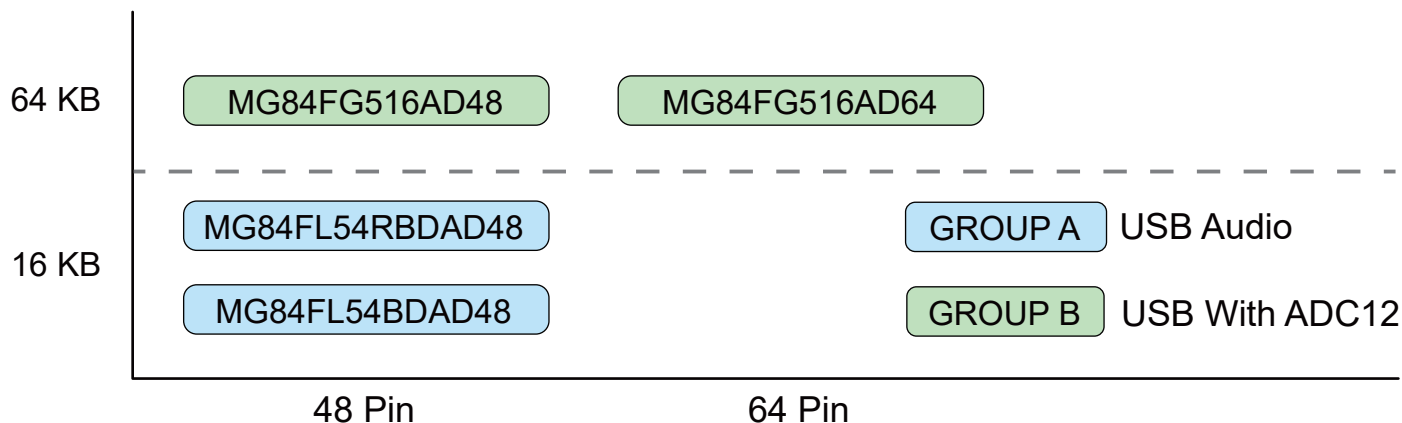


Item	Operating Voltage	Flash ROM Data RAM	Max. Operation Freq.	Timer (16-Bit)		ACMP	Comm.	PCA PWM	WDT	Code Protection	ISP IAP	Package
				IO								
MPC89L/E52	L:2.4V~3.6V E:4.5V~5.5V	8KB	48MHz @ 12T 24MHz @ 6T	3	32/36	NA	UART	NA	YES	YES	4KB Max.	PDIP40 PLCC44 LQFP44
		512B		NA				6KB Max.				
MPC89L/E53	L:2.4V~3.6V E:4.5V~5.5V	15KB	48MHz @ 12T 24MHz @ 6T	3	32/36	NA	UART	NA	YES	YES	4KB Max.	PDIP40 PLCC44 LQFP44
		512B		NA				NA				
MPC89L/E54	L:2.4V~3.6V E:4.5V~5.5V	16KB	48MHz @ 12T 24MHz @ 6T	3	32/36	NA	UART	NA	YES	YES	4KB Max.	PDIP40 PLCC44 LQFP44
		1280B		NA				46KB Max.				
MPC89L/E58	L:2.4V~3.6V E:4.5V~5.5V	32KB	48MHz @ 12T 24MHz @ 6T	3	32/36	NA	UART	NA	YES	YES	4KB Max.	PDIP40 PLCC44 LQFP44
		1280B		NA				30KB Max.				
MPC89L/E515	L:2.4V~3.6V E:4.5V~5.5V	63KB	48MHz @ 12T 24MHz @ 6T	3	32/36	NA	UART	NA	YES	YES	4KB Max.	PDIP40 PLCC44 LQFP44
		1280B		NA				NA				



# 8051 USB MCU

## Memory



## MG84 (USB FS)

Item	Operating Voltage	Flash ROM Data RAM	Max. Operation Freq.	Timer (16-Bit)		ADC	Comm.	PCA PWM	WDT	End Points	ISP		Package
				IO	ACMP						IAP	IAP	
MG84FL54BD	2.7V~3.6V	16KB	24MHz	3	NA	USB, UART, TWI(I <sup>2</sup> C), SPI	NA	NA	NA	4	4KB Max.	LQFP48	
		832B		36	NA						15KB Max.		
MG84FL54RBD	2.7V~3.6V	16KB	24MHz	3	NA	USB, UART, TWI(I <sup>2</sup> C), SPI	NA	NA	NA	6	4KB Max.	LQFP48	
		256B		31	NA						15KB Max.		
MG84FG516 <sup>*1</sup>	2.0V~5.5V	64KB	32MHz <sup>*2</sup>	4	12-Bit, 8-CH	USB, UARTx2, TWI(I <sup>2</sup> C), SPI	1	YES <sup>*4</sup>	11	4KB Max.	LQFP48		
		4352B		41/55	NA					6-CH	63.5KB Max. <sup>*5</sup>	LQFP64	

<sup>\*1</sup> Support OCD ICE;

<sup>\*2</sup> Used internal RC oscillator 12MHz as default. Frequency deviation: at 25°C, under ±1% ; at -40°C~85°C, under ±1.5% ; at USB activated, under ±0.25%;

<sup>\*3</sup> Support SPI Master Mode;

<sup>\*4</sup> Support Watch Mode;

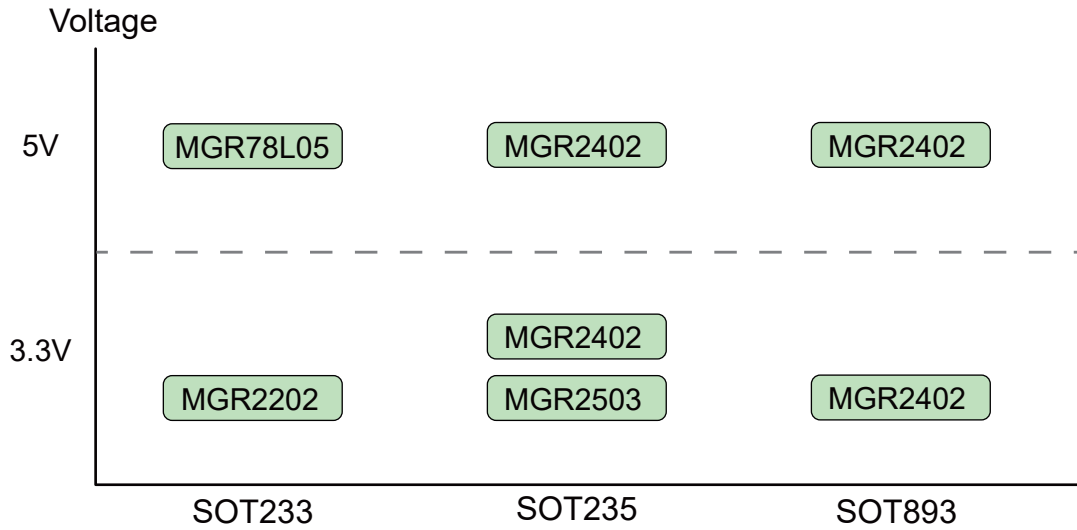
<sup>\*5</sup> Support S/W setting.

## MA1xx Series USB Bridge

Item	Operating Voltage	USB Speed	Function	Features	Driver	Package
MA111	2.4V~5.5V	Full Speed <sup>*1</sup>	USB HID to Serial Bridge	UART, SPI Master, TWI(I <sup>2</sup> C) Master, GPIO	FREE	SOP16, QFN16
MA112	3.0V~5.5V	Full Speed <sup>*1</sup>	USB to UART Data Bridge MS Windows Driver Supported	Virtual COM (TXD/RXD)	OS	SOP16, QFN16
MA113	3.0V~5.5V	Full Speed <sup>*1</sup>	USB Data Bridge for UART, RS-232 Modem signal, RS-485 MS Windows Standard Driver supported	Virtual COM(TXD/RXD), RS-232 Modem Signals RS-485 Transceiver Control	OS	SOP16, QFN16

<sup>\*1</sup> Built in internal RC oscillator 12MHz as default. Frequency deviation: at 25°C, under ±1% ; at -40°C~85°C, under ±1.5%, USB online mode ±0.25%.

# LDO Product

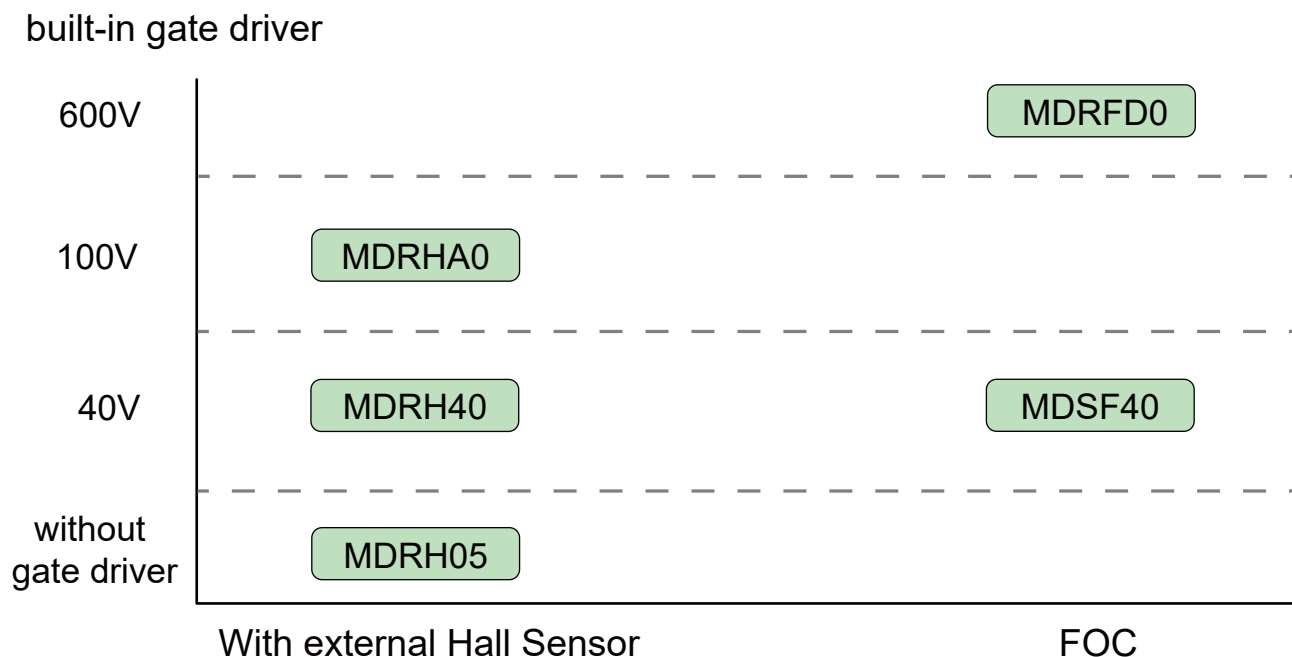


Item	Min. V <sub>IN</sub> (V)	Max. V <sub>IN</sub> (V)	I <sub>OUT</sub> (mA)	V <sub>OUT</sub> (V)	I <sub>Q</sub> (uA)	R <sub>ON</sub> (Ω)	ΔV <sub>LINE</sub> (%/V)	ΔV <sub>LOAD</sub> (mV)	PSRR @1KHz (dB)	C <sub>OUT</sub> (uF)	EN	Package
MGR78L05	V <sub>OUT</sub> +2	30	100	5	300	~20	5	20	> 80	0.1	NA	SOT233
MGR2202	2.7	24	150	3.3	1.52	< 5	0.01	45	> 80	1	NA	SOT233
MGR2402	2.7	40	250	3.3/5	1.2	4	0.01	15	> 80	1	YES	SOT235 SOT893
MGR2503	2.5	5.5	300	3.3	0.5	1.33	0.1/0.3	12/30 (1 to 150mA)	55-60	1	YES	SOT235

## Package Type-LDO

Code	Description	Code	Description
G	SOT	V	23-3
		B	23-5
		X	89-3

# BLDC Product



Part No.	Description	Vdd	Gate driver	V <sub>IN</sub>	Max Freq.	EEPROM	ADC 10Bit	Capture 16Bit	OPA	Operation Temp.	Package
<b>MDRH05</b> <sup>*1</sup>	3 Phase BLDC Motor Controller	4.5~5.5V	NA	5V	48MHz	NA	8 CH	1 CH	NA	-40°C~105°C	SSOP28
<b>MDRH40</b> <sup>*1</sup>	3 Phase BLDC Motor Controller, w/40V Gate driver, 5V LDO	4.5~5.5V	40V P/N	40/5V	48MHz	NA	4 CH	1 CH	NA	-40°C~105°C	SSOP28(W) QFN32
<b>MDRHA0</b> <sup>*1</sup>	3 Phase BLDC Motor Controller, w/100V Gate driver, 5V LDO	4.5~5.5V	100V N/N	15/5V	48MHz	NA	8 CH	1 CH	NA	-40°C~105°C	LQFP48
<b>MDSF40</b> <sup>*1*2</sup>	3 Phase PMSM/BLDC FOC sensorless Motor Controller, w/40V Gate driver, 5V LDO	4.5~5.5V	40V P/N	40/5V	48MHz	256Byte	8 CH <sup>*3</sup>	1 CH	3 <sup>*4</sup>	-40°C~105°C	LQFP48
<b>MDRFD0</b> <sup>*1*2</sup>	3 Phase PMSM/BLDC FOC sensorless Motor Controller, w/600V Gate driver, 5V LDO	4.5~5.5V	600V N/N	15/5V	48MHz	NA	8 CH <sup>*3</sup>	1 CH	2 <sup>*4</sup>	-40°C~105°C	LQFP48

<sup>\*1</sup> Control method: Sine-wave; Support 16-Bit PWM; UART Interface; 32-Bit Divider

<sup>\*2</sup> Support I<sup>2</sup>Cx1; IR/RF x1 Interface

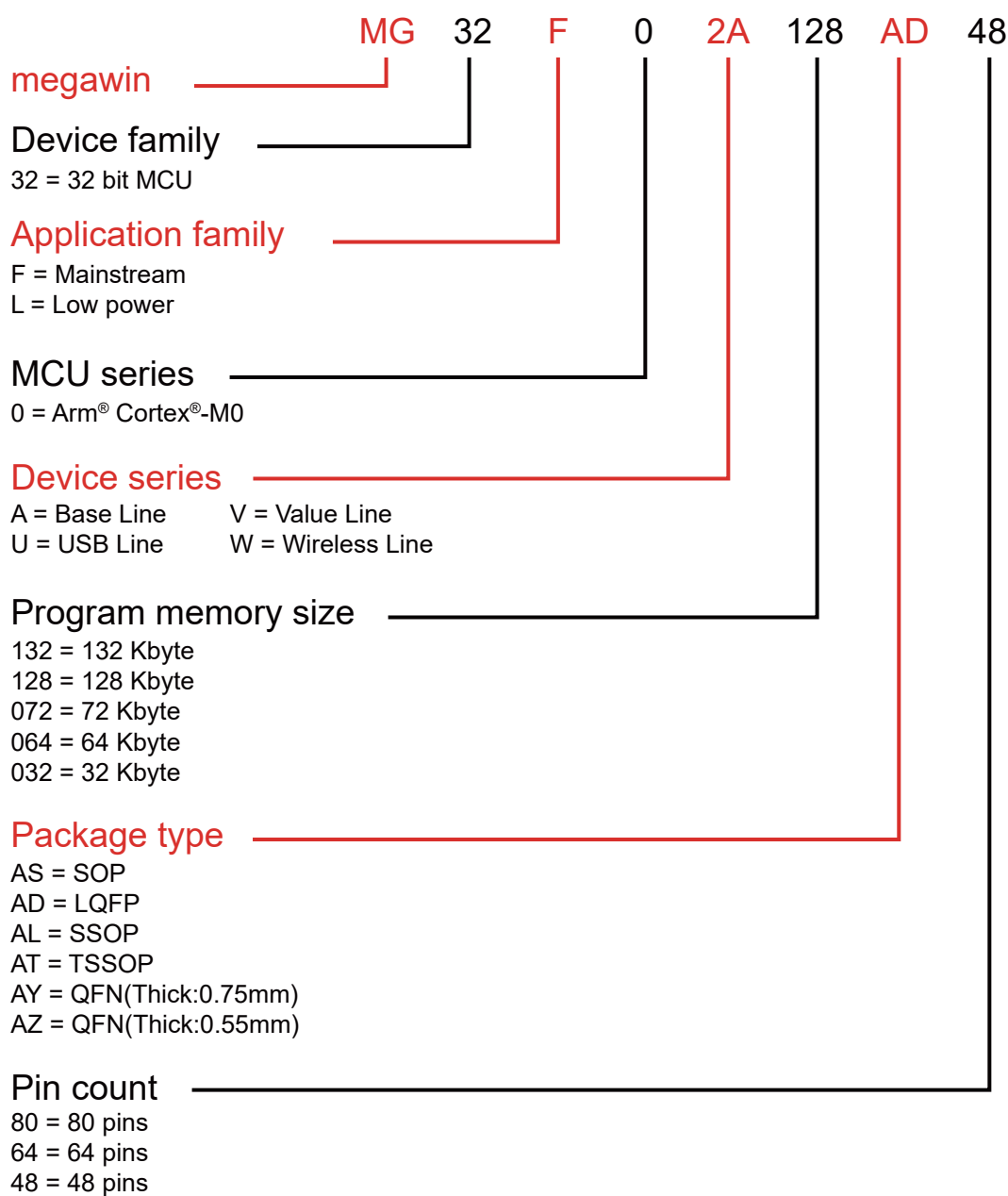
<sup>\*3</sup> CH0 and CH1: for FOC current measurement

<sup>\*4</sup> OPA: Has 2-CH for non-sensor feedback motor current, and MDSF40 has an extra 1-CH for peripheral use.

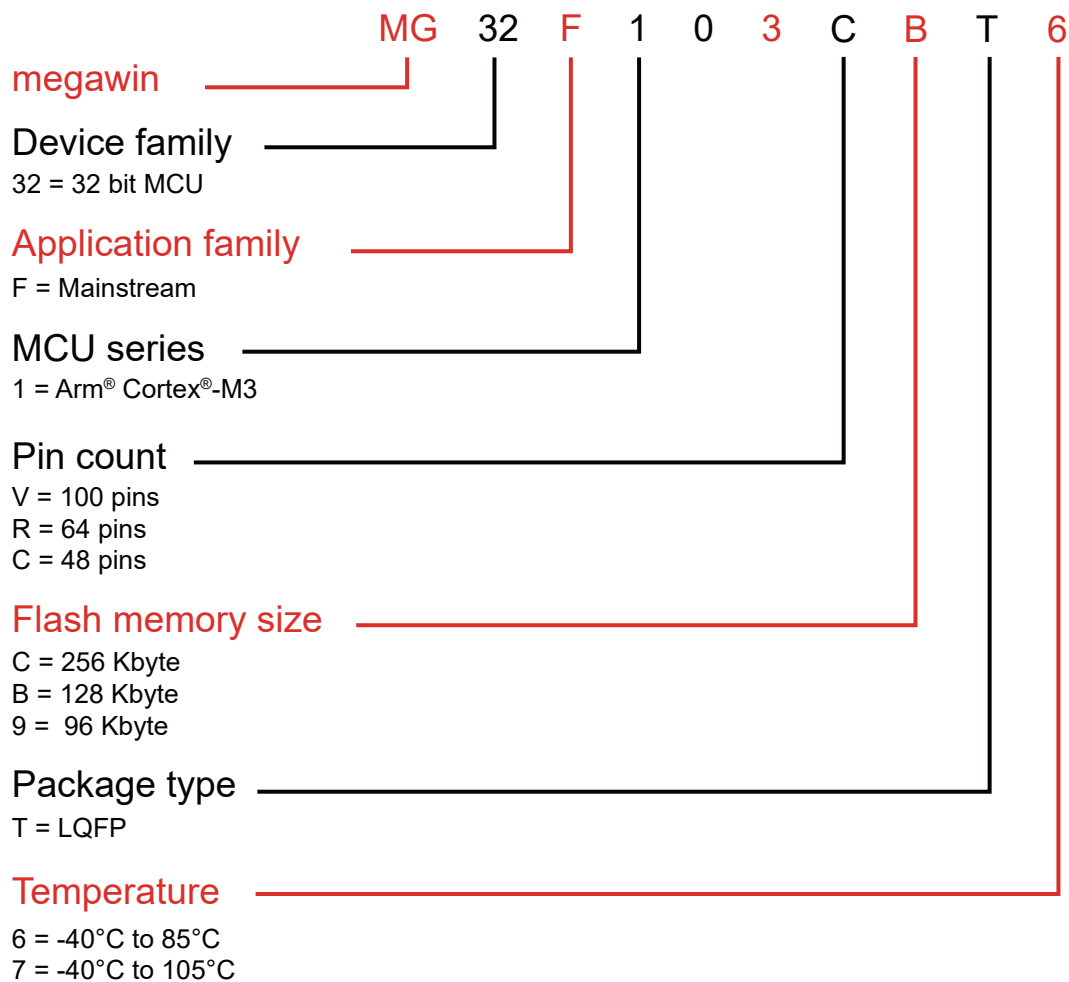
## Package Type

Code	Description	Code	Description	Code	Description
AB	COB	AC	LQFP (10mm x 10mm)	AD	LQFP (7mm x 7mm)
AE	PDIP	AF	PQFP	AG	MSOP
AL	SSOP	AM	TQFP	AP	PLCC
AS	SOP	AT	TSSOP	AY	QFN (Thick:0.75mm)
HS	SOP (Heat Sink)	AK	TOxxx	AZ	QFN (Thick:0.55mm)
AR	SOT	AI	Ink die	AN	DFN
AW	Wafer	WL	SSOPW (209mil Outline Dimensions)	AH	DICE

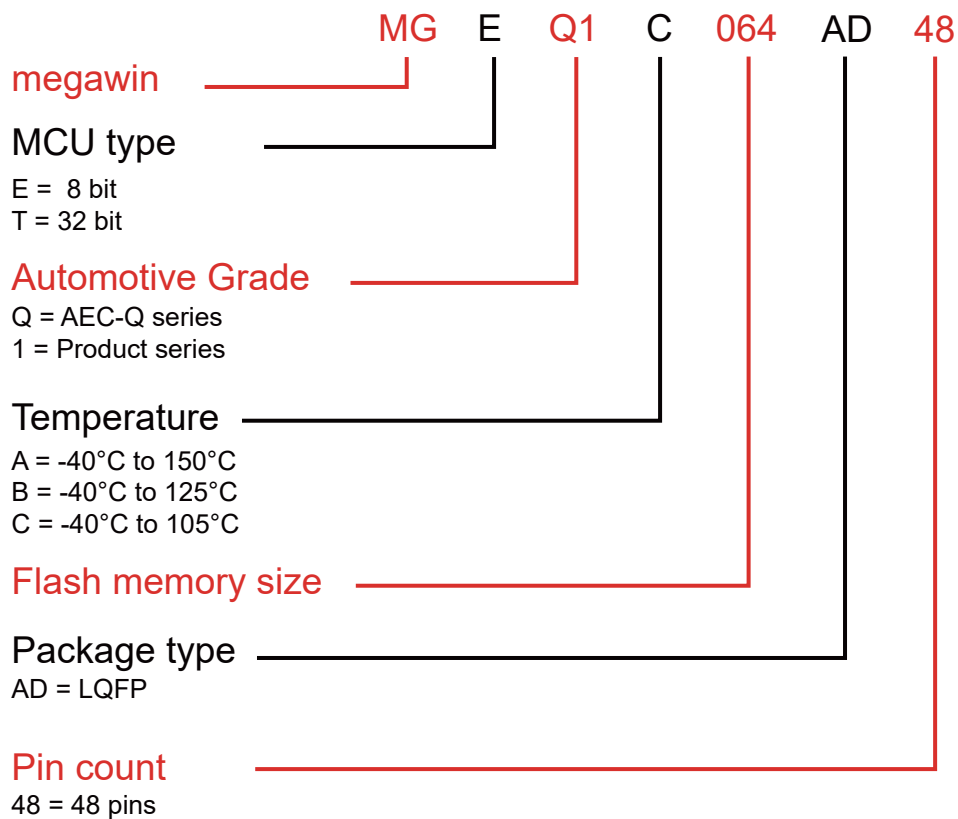
## Ordering Information - M0



## Ordering Information - M3



## Ordering Information - Automotive MCU



MG Website



LinkedIn

[www.megawin.com.tw](http://www.megawin.com.tw)

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