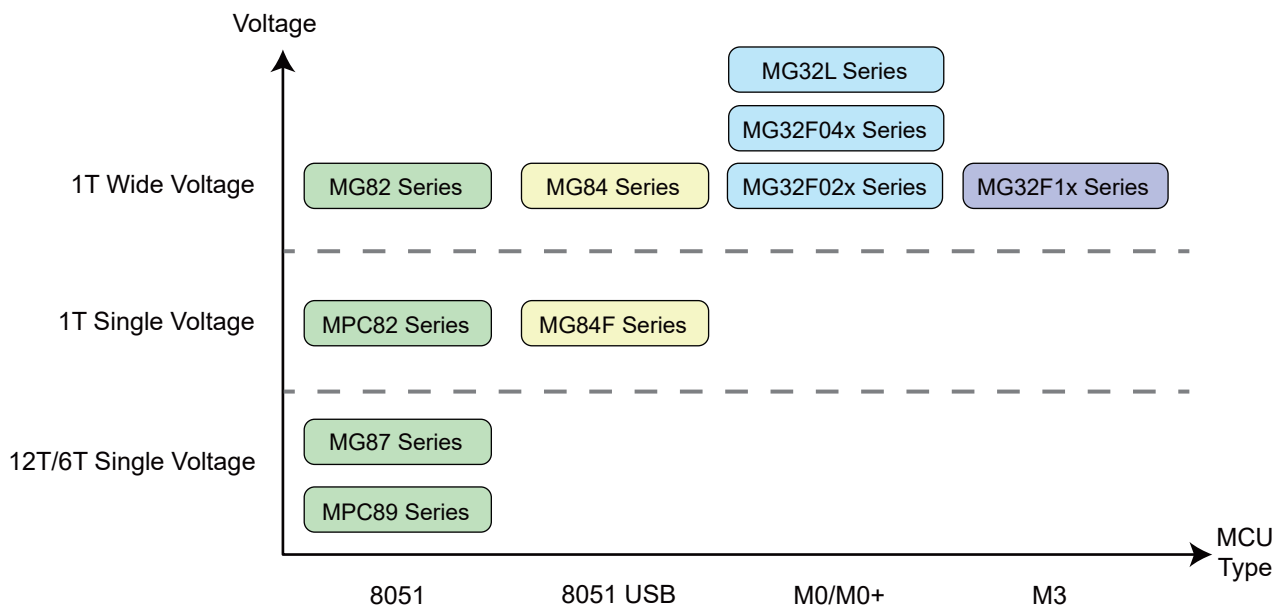
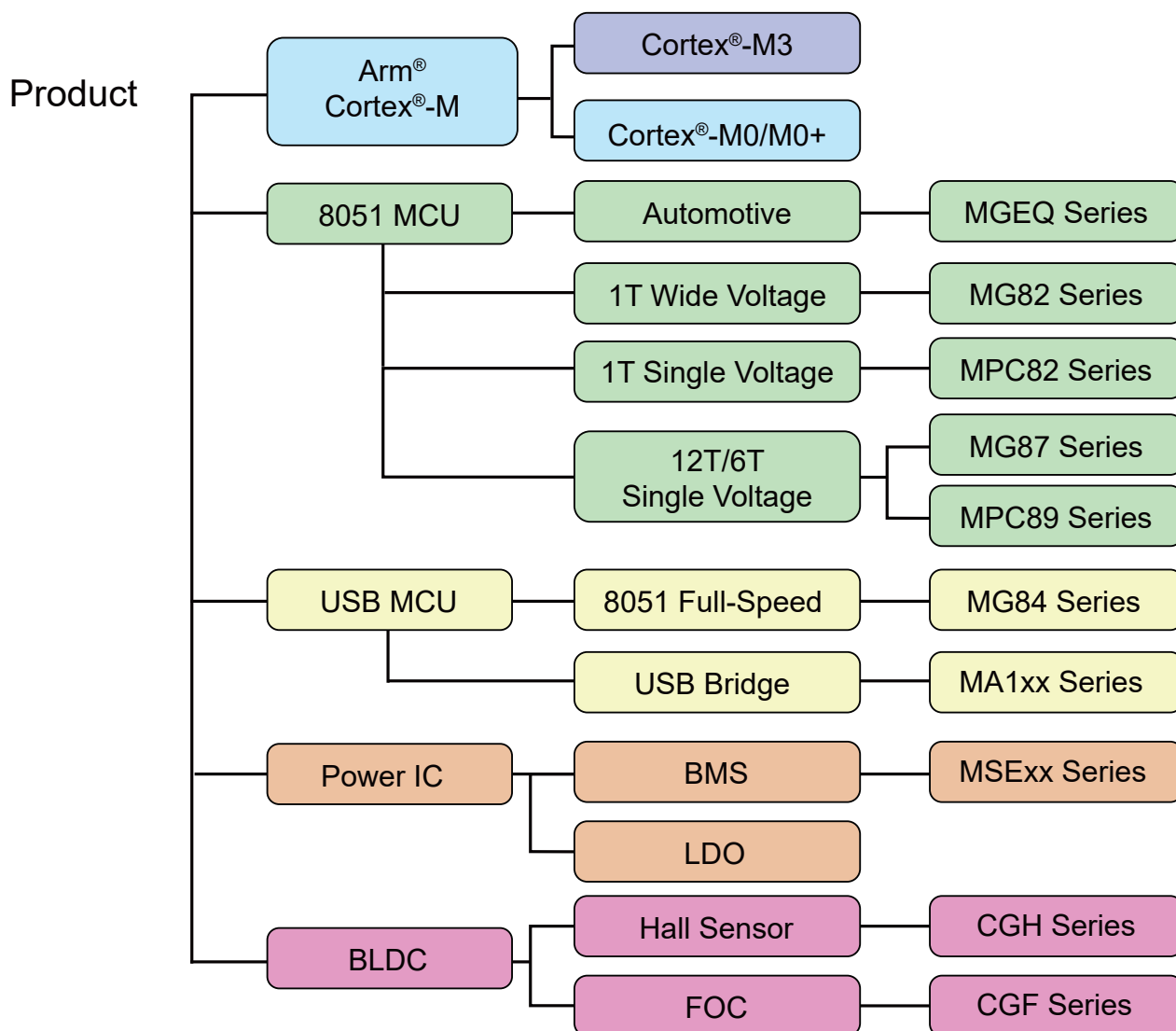


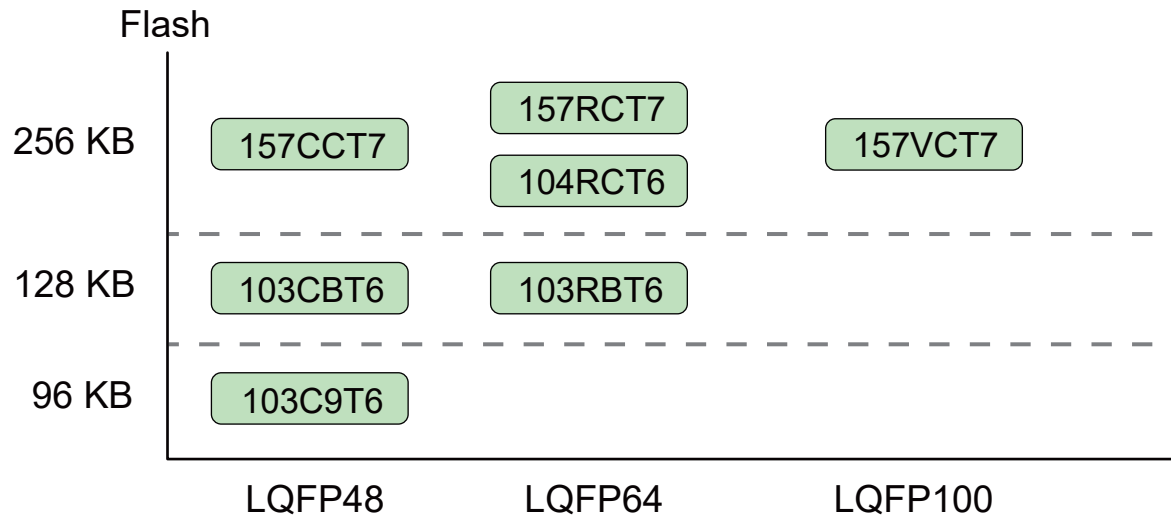
## 8-bit 8051/32-bit Arm® Cortex®-M0/M0+/M3 Flash MCUs



### Product Category:



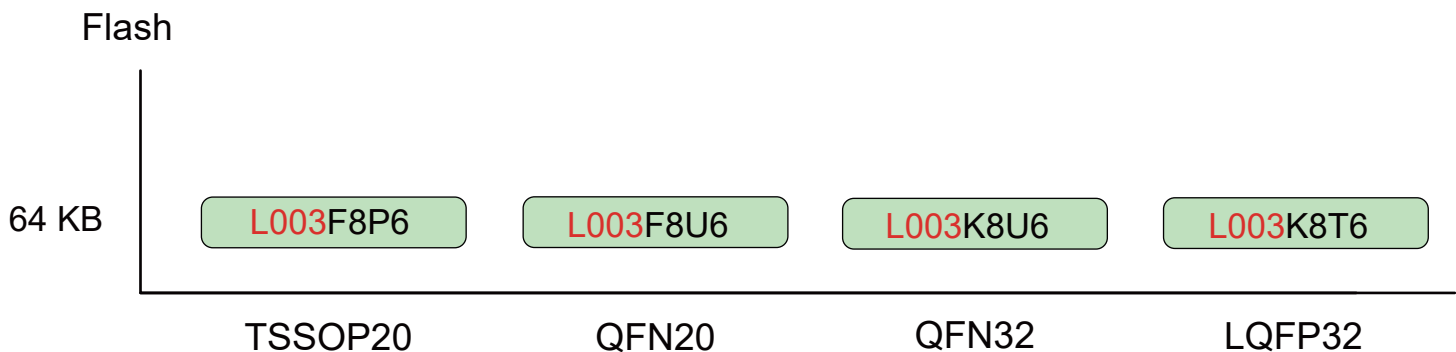
## Arm® Cortex®-M3 Base Line : MG32F1x Series



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
MG32F157CCT7	2V~3.6V	256KB	64KB	96MHz	8+RTC	37	18-CH	3 <sup>1</sup>	UARTx5, I <sup>2</sup> C x2, SPIx3, QSPI, CAN, USB, SDIO, CRC, OPA x3, AES, DAC x2, ADC x3	LQFP48
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, OPA x3, AES, DAC x2, 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, OPA x3, AES, DAC x2, ADC x3	LQFP100

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

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



Item	Vdd	Flash ROM	Data RAM	Max Freq.	Timer	IO	12-Bit ADC	ACMP.	Features	CCP <sup>4</sup>	ISP/IAP	Package
MG32L003 <sup>*1</sup>	2.5V~5.5V	64KB	4KB	24MHz	9+RTC LP 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

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

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

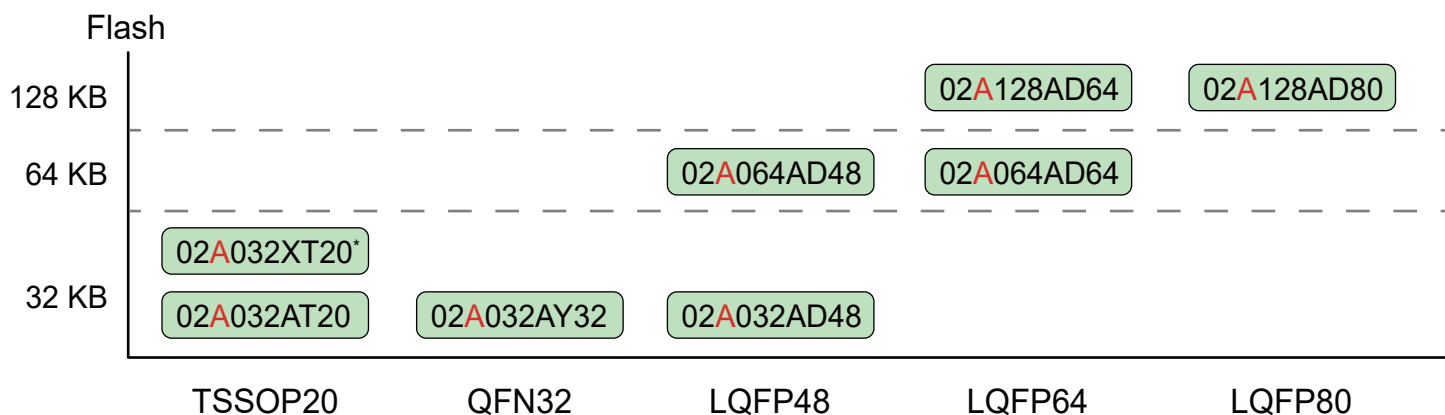
<sup>3</sup> Share with all Flash zone;

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

<sup>5</sup> Advanced UART x2 : Support SPI Master/Slave. (UART 0/1 modules)

<sup>6</sup> Low Voltage Detector (LVD) / Voltage Comparator (ACMP)

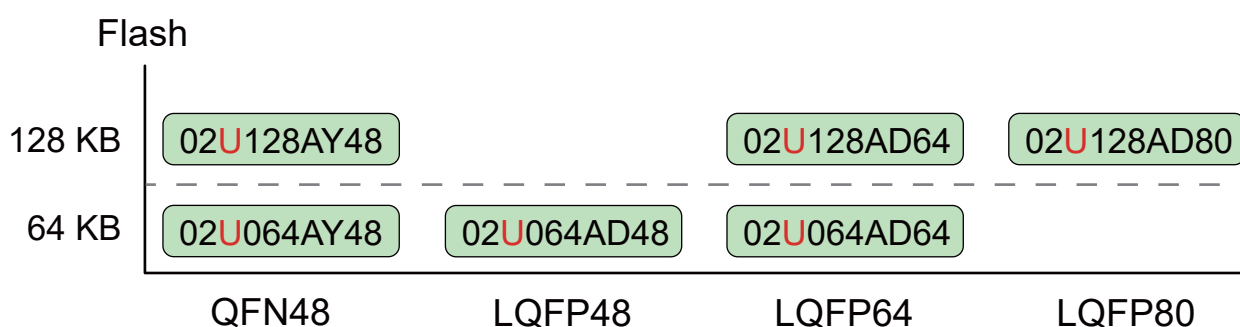
# Arm® Cortex®-M0 Base Line: MG32F02A Series



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> Cx2, 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> Cx2, 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).

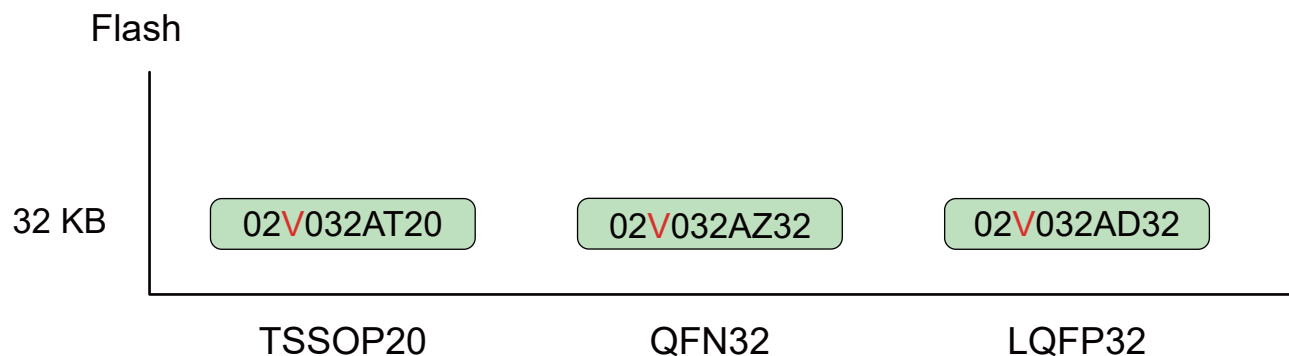
# Arm® Cortex®-M0 USB Line : MG32F02U Series



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</b> <sup>*1</sup>	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

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

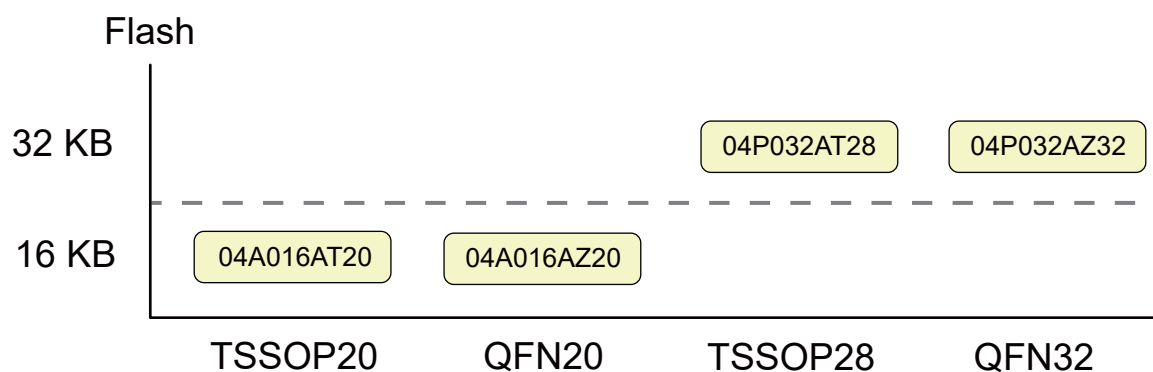
<sup>\*2</sup> All UART support SPI Master;

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

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

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

## Arm® Cortex®-M0 High CP Line Series



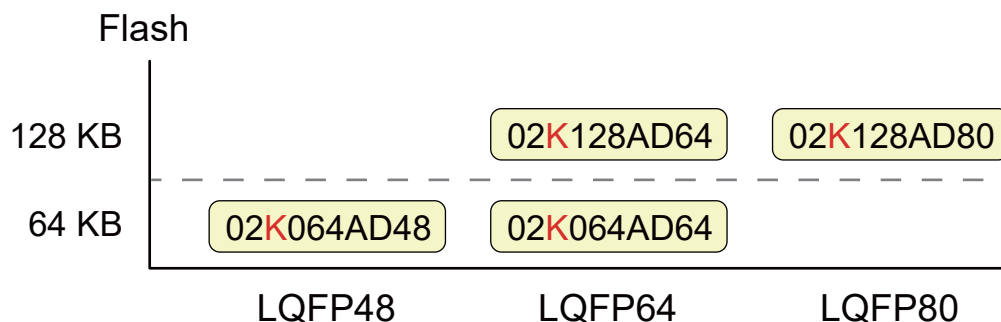
Item	Vdd	Flash ROM	Data RAM	Max Freq.	Timer	IO	12-Bit ADC	Comp.	Features	CCP <sup>2</sup>	IAP	Package
<b>MG32F04A016</b> <sup>*1</sup>	2V~5.5V	16KB	2KB	48MHz	3	18	8-CH	NA	UARTx2, SPI, I <sup>2</sup> C, CRC32, UID	5-CH	YES	QFN20 TSSOP20
<b>MG32F04P032</b> <sup>*1</sup>	2.5V~5.5V	32KB	4KB	60MHz	5	26	10-CH	2	OPAx2, USART, DMAx2, UID, HW Divider	5-CH	YES	TSSOP28 QFN32

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

<sup>\*2</sup> CCP: Input Capture/Output Compare/PWM.

## Arm® Cortex®-M0 LCD Line: MG32F02K Series



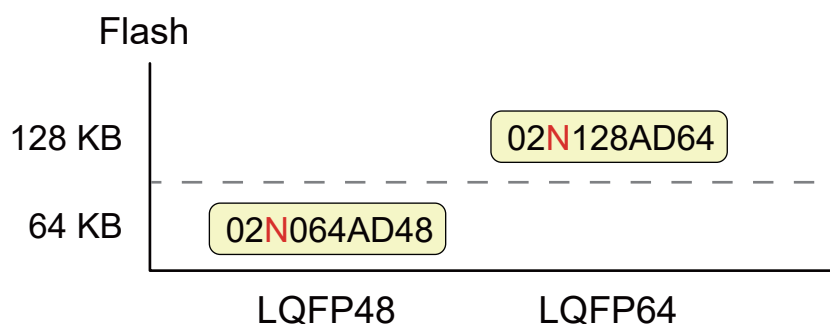
Item	Vdd	Flash ROM	Data RAM	Max. Freq.	Timer	IO	12-Bit ADC	Comp.	Features	CCP <sup>3</sup>	ISP/IAP	Package
<b>MG32F02K064</b> <sup>*1</sup>	1.8V~5.5V	64KB	10KB	48MHz	7+RTC	44/59	16-CH	2	UARTx7,I <sup>2</sup> Cx2,SPIx4,LIN,LCD,OPA,DMAx5,CRC32	8-CH	YES <sup>*2</sup>	LQFP48 LQFP64
<b>MG32F02K128</b> <sup>*1</sup>	1.8V~5.5V	128KB	16KB	48MHz	7+RTC	59/73	16-CH	2	UARTx7,I <sup>2</sup> Cx2,SPIx4,LIN,LCD,OPA,DMAx5,CRC32	8-CH	YES <sup>*2</sup>	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.

## Arm® Cortex®-M0 CAN Line : MG32F02N Series



Item	Vdd	Flash ROM	Data RAM	Max. Freq.	Timer	IO	12-Bit ADC	Comp.	Features	CCP <sup>3</sup>	ISP/IAP	Package
<b>MG32F02N064</b> <sup>*1</sup>	1.8V~5.5V	64KB	10KB	48MHz	5+RTC	44	16-CH	2	UARTx5,I <sup>2</sup> Cx2,SPI,LIN,LCD,CAN,OPA,DMAx5,CRC32	8-CH	YES <sup>*2</sup>	LQFP48
<b>MG32F02N128</b> <sup>*1</sup>	1.8V~5.5V	128KB	16KB	48MHz	5+RTC	59	16-CH	2	UARTx5,I <sup>2</sup> Cx2,SPI,LIN,LCD,CAN,OPA,DMAx5,CRC32	8-CH	YES <sup>*2</sup>	LQFP64

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

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

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

# 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	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	YES <sup>*2</sup>	7.5KB Max.	LQFP48				
		4KB		44	3		8-CH		63.5KB Max. <sup>*3</sup>					

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

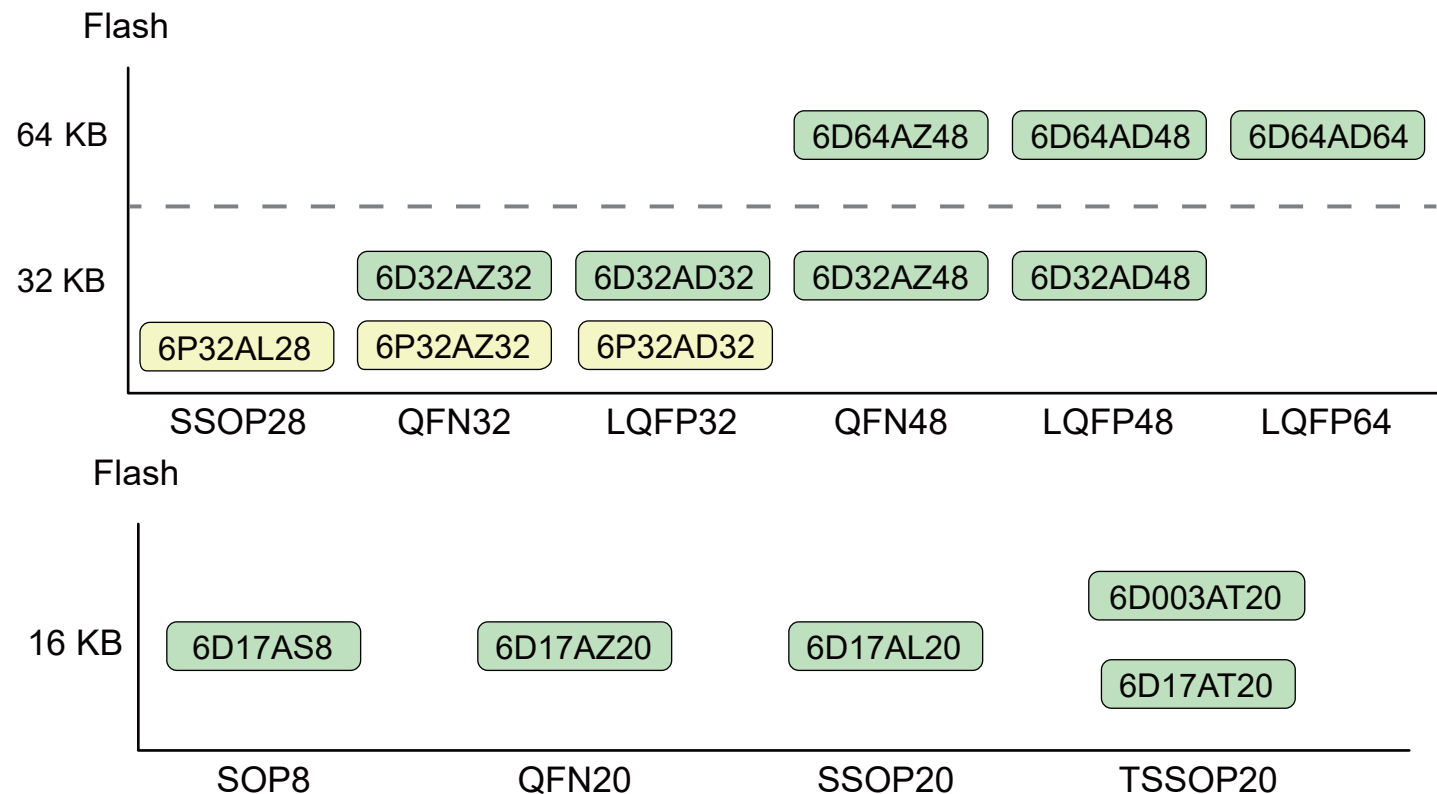
Support Code Protection

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

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

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

# 1T 8051 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	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				
		1KB		17	NA		8-CH		15.5KB Max. <sup>*4</sup>					
MG82F6D17 <sup>*1</sup>	1.8V~5.5V	16KB	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				
		1KB		5/17	NA		8-CH		15.5KB Max. <sup>*4</sup>					
MG82F6P32 <sup>*1</sup>	1.8V~5.5V	32KB	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, CRC16/32	2	YES <sup>*3</sup>	7.5KB Max.	SSOP28 QFN32 LQFP32				
		2KB		25/29	2		8-CH		31.5KB Max. <sup>*4</sup>					
MG82F6D32 <sup>*1</sup>	1.8V~5.5V	32KB	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 QFN48 LQFP48				
		2KB		29/44	2		8-CH		31.5KB Max. <sup>*4</sup>					
MG82F6D64 <sup>*1</sup>	1.8V~5.5V	64KB	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				
		4KB		44/59	3		8-CH		63.5KB Max. <sup>*4</sup>					

<The yellow background represents coming soon.> Support Code Protection

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

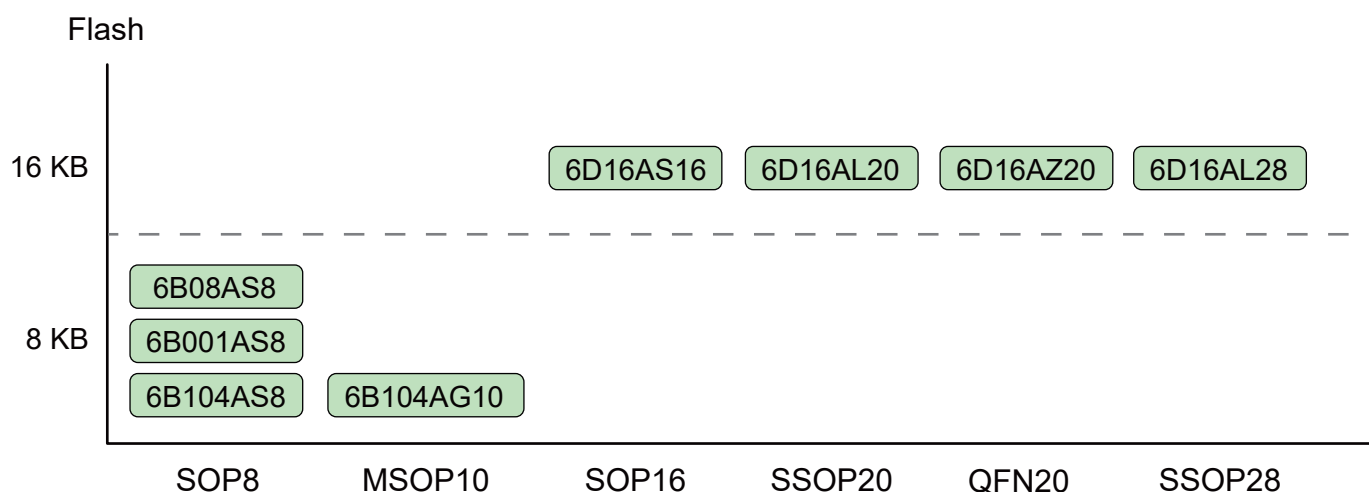
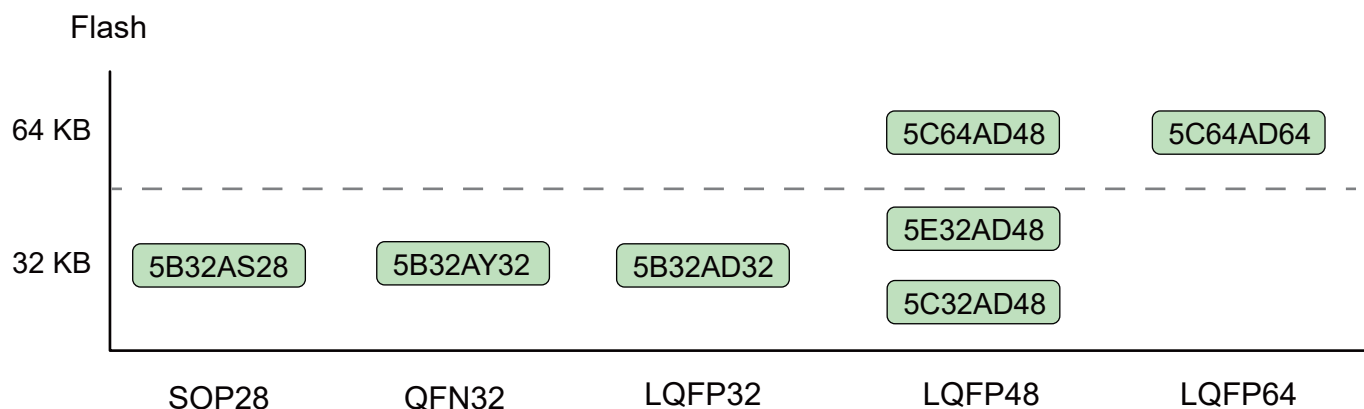
<sup>\*2</sup> Support SPI Master Mode;

<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	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-CH		4-CH													
MG82F6D16 <sup>*1</sup>	1.8V~5.5V	16KB	1KB	32MHz <sup>*5</sup>	3 + RTC	8-CH	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 QFN20				
13/17/25		6-CH													
MG82FG5B32 <sup>*1</sup>	1.8V~5.5V	32KB	2KB	25MHz <sup>*5</sup>	3 + RTC	8-CH	ISO-7816, LIN, I <sup>2</sup> Cx2	1	YES <sup>*3</sup>	4KB Max. 31.5KB Max. <sup>*4</sup>	QFN32 LQFP32				
29		8-CH													
MG82F5B32 <sup>*1</sup>	1.8V~5.5V	32KB	2KB	32MHz	3 + RTC	8-CH <sup>*7</sup>	ISO-7816, LIN, I <sup>2</sup> C	1	YES <sup>*3</sup>	4KB Max. 31.5KB Max. <sup>*4</sup>	SOP28 LQFP32				
25/29		8-CH													
MG82FG5C32 <sup>*1</sup>	1.8V~5.5V	32KB	2KB	32MHz <sup>*5</sup>	5 + RTC	16-CH	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	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	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;

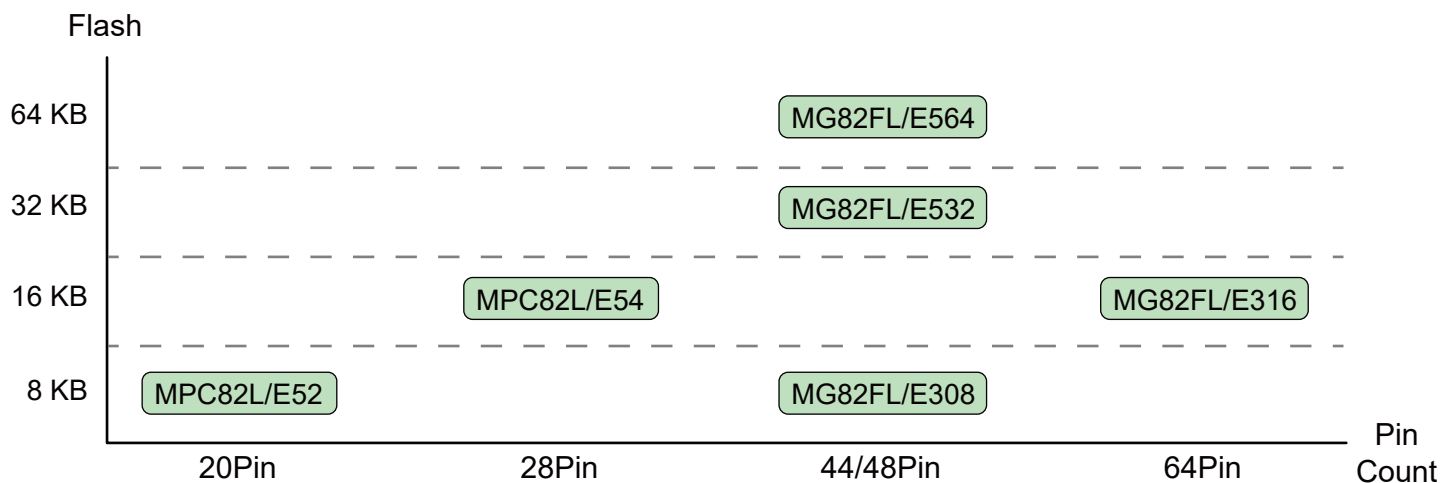
<sup>\*3</sup>Support Watch Mode; <sup>\*4</sup>Support S/W setting;

<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.

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



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

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

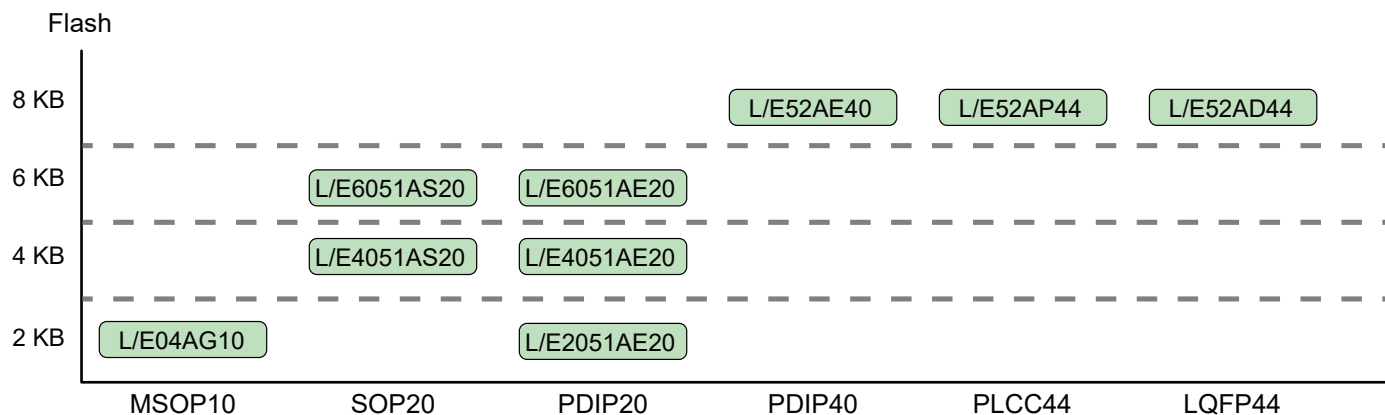
<sup>\*3</sup> Internal RC oscillator 12MHz as default. Frequency deviation: at 25°C, under ±1%; at -20°C ~50°C, under ±2% ; at -40°C ~85°C, under ±4%;

<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

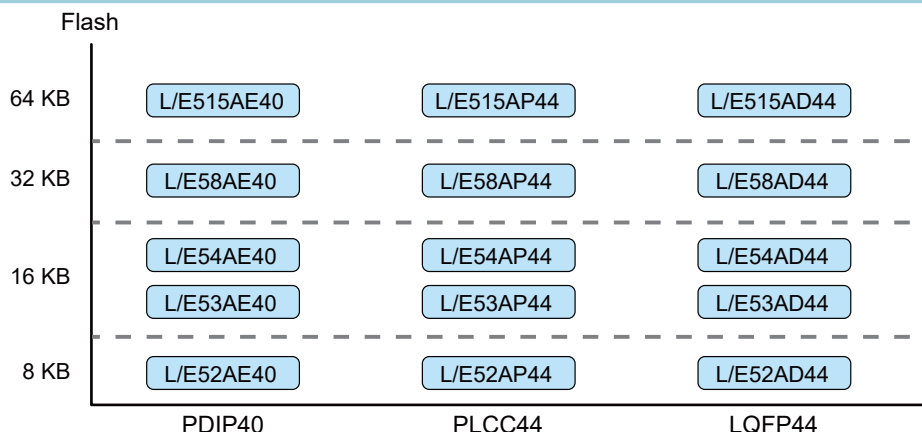


Item	Operating Voltage	Flash ROM Data RAM	Max. Operation Freq.	Timer (16-Bit)		ACMP	Comm.	PCA PWM	WDT	ISP IAP	Package
				IO							
MG87FL/E52*	L:2.4V~3.6V E:4.5V~5.5V	8KB	48MHz @ 12T 24MHz @ 6T	3	NA	NA	UART	NA	YES	3.5KB Max.	PDIP40 PLCC44 LQFP44
		256B		32/36				NA		S/W setting	
MG87FL/E2051*	L:2.4V~3.6V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

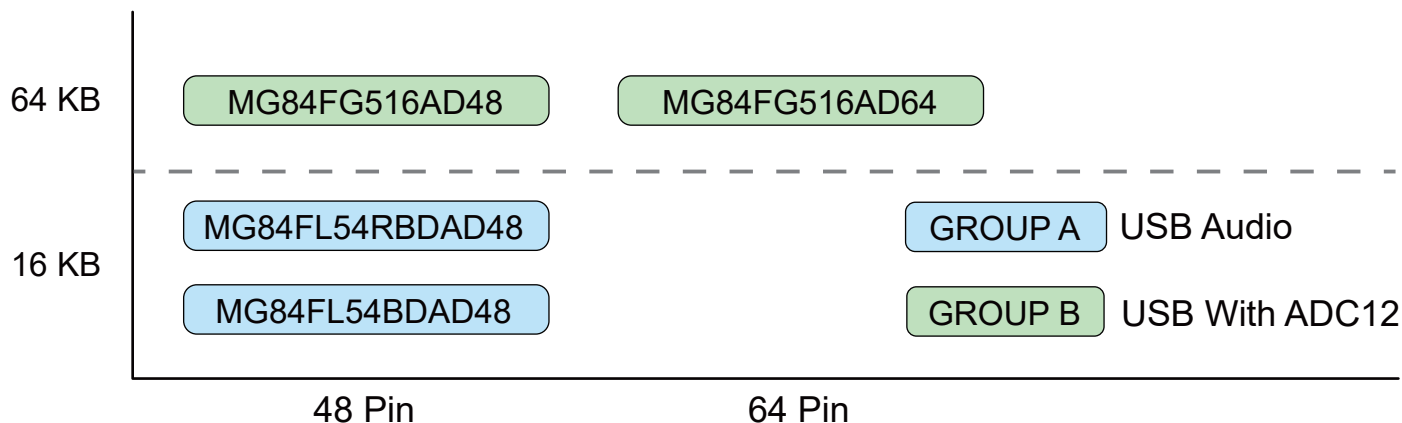
## 12T/6T 8051 Single Voltage without internal RC oscillator MCU : MPC89 Series



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	NA	NA	UART	NA	YES	YES	4KB Max.	PDIP40 PLCC44 LQFP44
		512B		32/36				NA		6KB Max.		
MPC89L/E53	L:2.4V~3.6V E:4.5V~5.5V	15KB	48MHz @ 12T 24MHz @ 6T	3	NA	NA	UART	NA	YES	YES	4KB Max.	PDIP40 PLCC44 LQFP44
		512B		32/36				NA		NA		
MPC89L/E54	L:2.4V~3.6V E:4.5V~5.5V	16KB	48MHz @ 12T 24MHz @ 6T	3	NA	NA	UART	NA	YES	YES	4KB Max.	PDIP40 PLCC44 LQFP44
		1280B		32/36				NA		46KB Max.		
MPC89L/E58	L:2.4V~3.6V E:4.5V~5.5V	32KB	48MHz @ 12T 24MHz @ 6T	3	NA	NA	UART	NA	YES	YES	4KB Max.	PDIP40 PLCC44 LQFP44
		1280B		32/36				NA		30KB Max.		
MPC89L/E515	L:2.4V~3.6V E:4.5V~5.5V	63KB	48MHz @ 12T 24MHz @ 6T	3	NA	NA	UART	NA	YES	YES	4KB Max.	PDIP40 PLCC44 LQFP44
		1280B		32/36				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 M-LINK 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

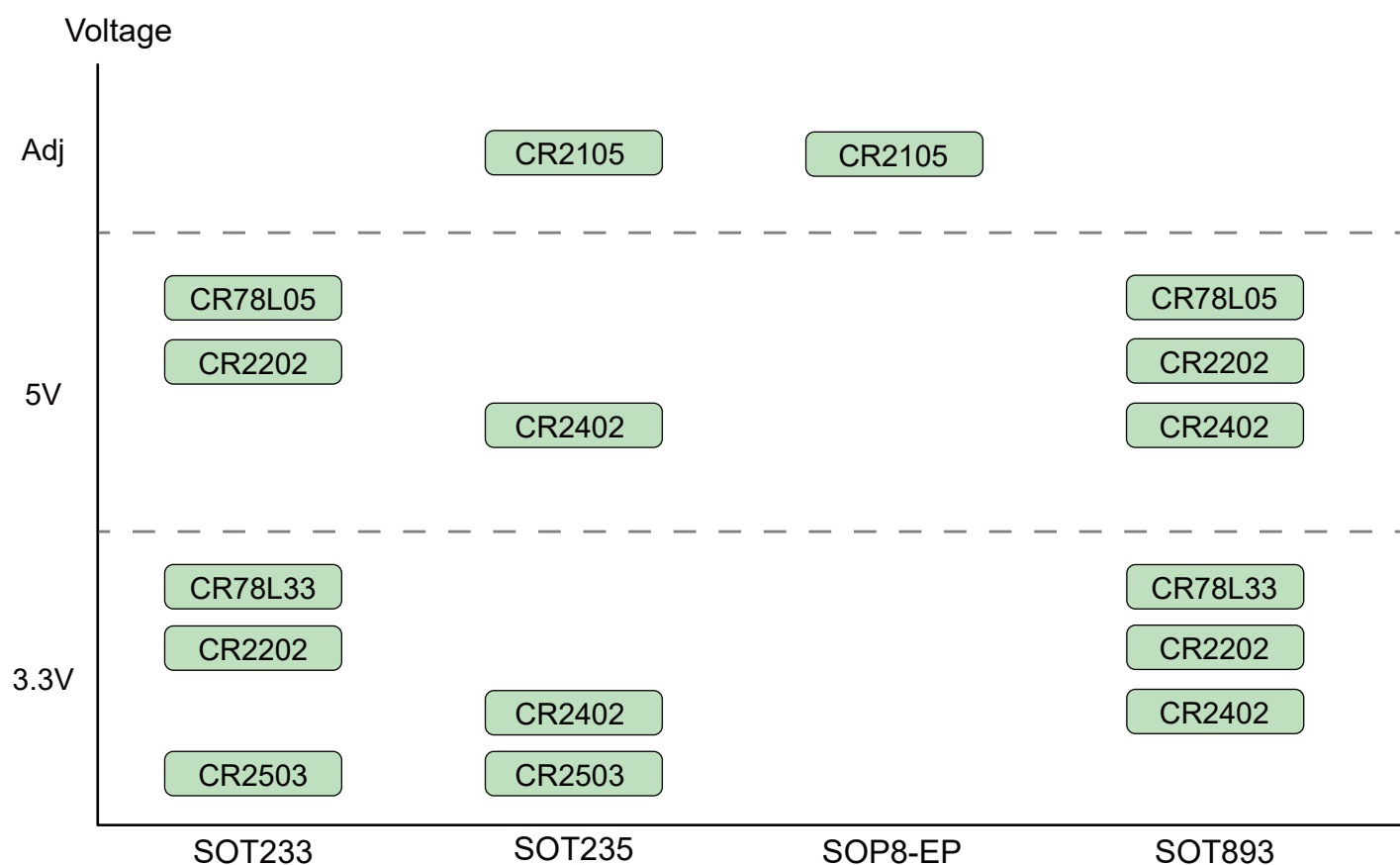
Item	Operating Voltage	USB Speed	Function	Features	Driver	Package
MA111	2.4V~5.5V	Full Speed <sup>*1</sup>	USB HID to Serial Bridge	UART, SPI Master, TWI(I <sup>2</sup> C) Master, GPIO	FREE	SOP16, QFN16
MA112	3.0V~5.5V	Full Speed <sup>*1</sup>	USB to UART Data Bridge MS Windows Driver Supported	Virtual 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%.

## Power IC (BMS) Product

Part No.	Type	Number of series cells	Battery chemistry	Operating Voltage	Feature	Package
MSE03GM1	Gauge	3	Lithium	8.1V ~ 12.75V	UART、I <sup>2</sup> C	LQFP48

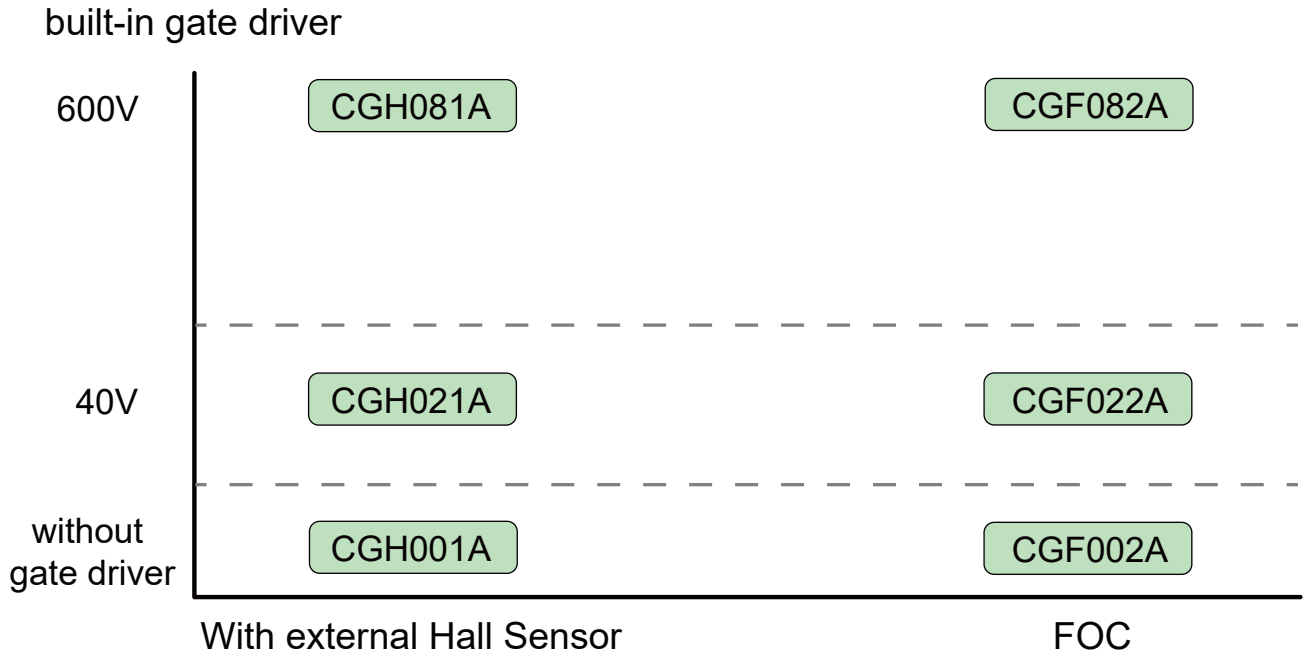
## Power IC (LDO) Product



Part No.	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)	ΔV <sub>LINE</sub> (%)	ΔV <sub>LOAD</sub> (%)	PSRR @1KHz (dB)	C <sub>OUT</sub> (uF)	EN	Package
CR78L33 CR78L05	7	30	100	3.3/5	300	0.24	0.4	84	0.1	NA	SOT233 SOT893
CR2105	7	100	50	Adj*1	23	0.06	0.4	65	10	Yes	SOT235 SOP8-EP
CR2202	2.7	24	150	3.3/5	1.5	0.04	0.15	80	1	NA	SOT233 SOT893
CR2402	2.7	40	250	3.3/5	1.5	0.04	0.4	80	1	Yes	SOT235 SOT893
CR2503	2.5	6	300	3.3	0.5	0.6	1	60	1	Yes	SOT233 SOT235

\*1 Adj: means the voltage can be adjusted.

# BLDC Product



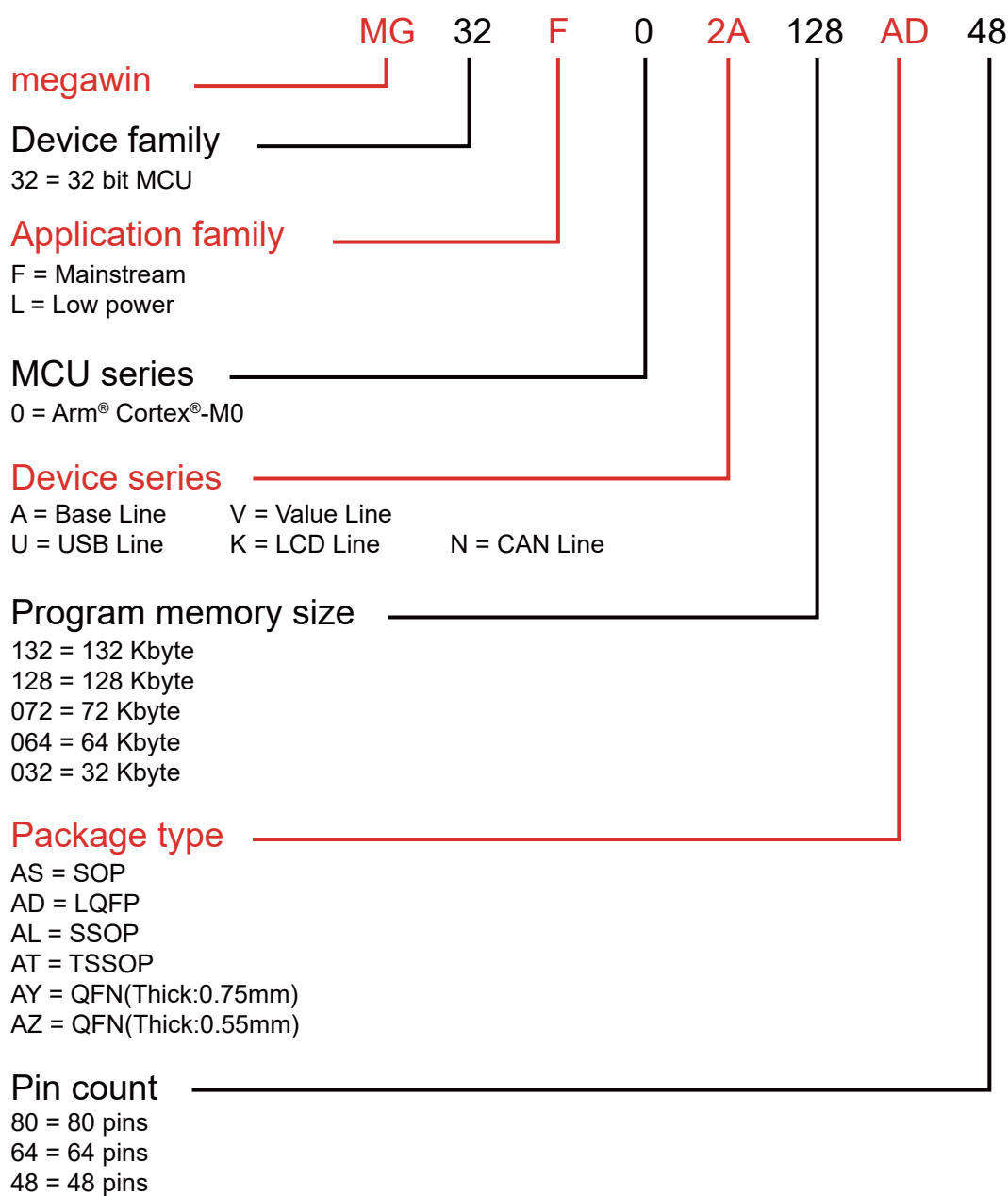
Part No.	Mode	Gate Driver		V <sub>IN</sub>	LDO	VDD	Max Freq.	ADC 10Bit	Capture 16-Bit	OPA*1	Operation Temp.	Package
		Voltage	Type									
CGH001A	Hall	NA		5V	NA	4.5~5.5V	48MHz	8 CH	1 CH	1 set	-40°C~105°C	SSOP28 QFN32
CGH021A	Hall	40V	P+N	40V	5V/30mA	4.5~5.5V	48MHz	8 CH	1 CH	1 set	-40°C~105°C	QFN40
CGH081A	Hall	600V	N+N	15V	5V/30mA	4.5~5.5V	48MHz	8 CH	1 CH	1 set	-40°C~105°C	LQFP48
CGF002A	FOC	NA		5V	NA	4.5~5.5V	48MHz	8 CH	1 CH	1 set	-40°C~105°C	LQFP48
CGF022A	FOC	40V	P+N	40V	5V/30mA	4.5~5.5V	48MHz	8 CH	1 CH	1 set	-40°C~105°C	LQFP48
CGF082A	FOC	600V	N+N	15V	5V/30mA	4.5~5.5V	48MHz	8 CH	1 CH	1 set	-40°C~105°C	LQFP48

\*1 OPA: For peripheral use.

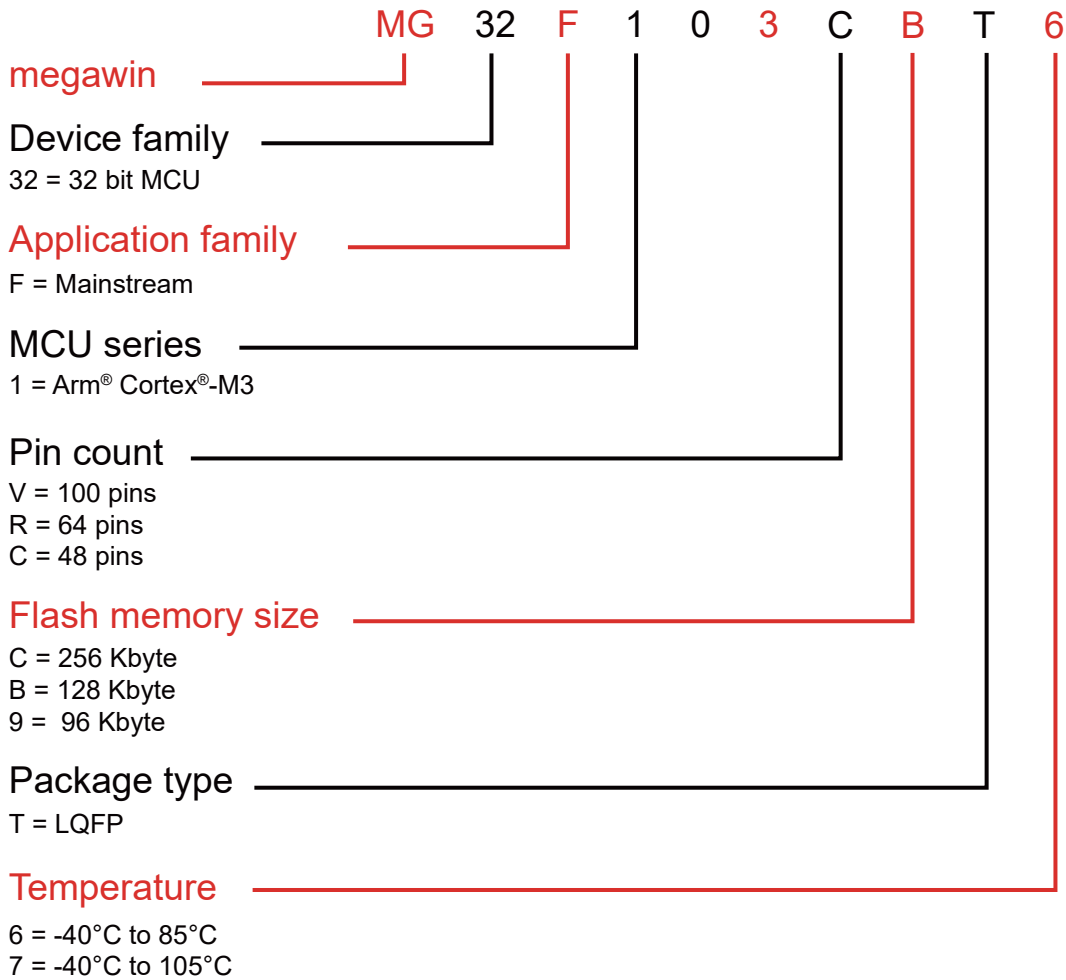
## Package Type

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

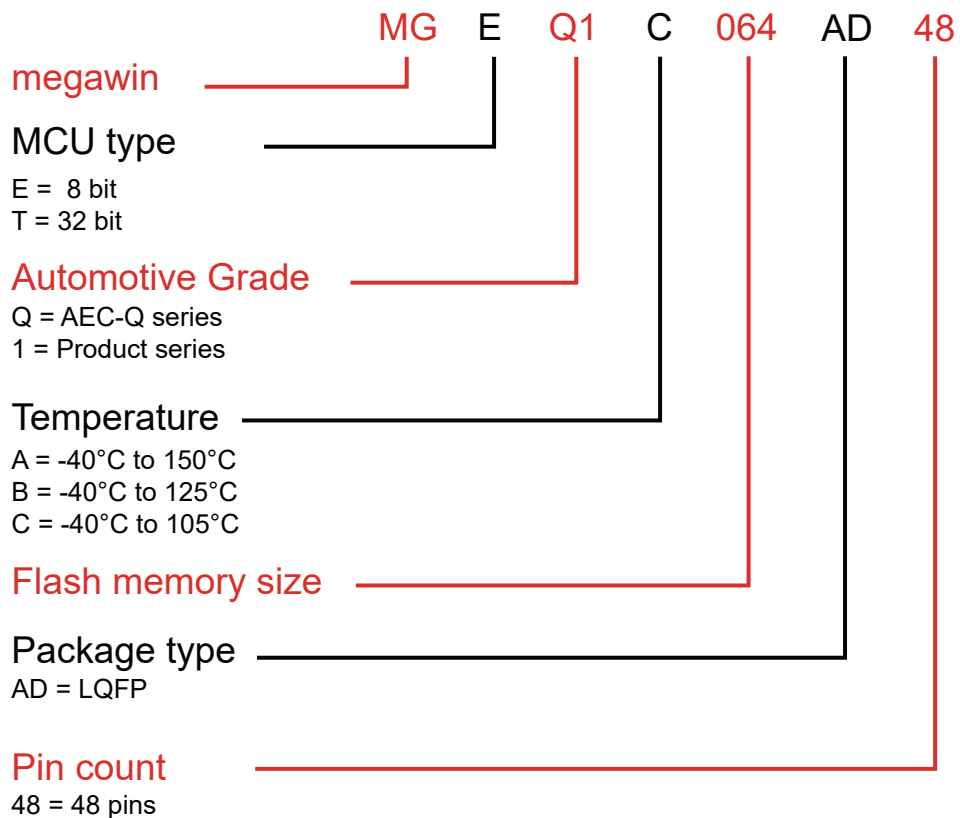
## Ordering Information - M0



## Ordering Information-M3



## Ordering Information - Automotive MCU





MG Website



LinkedIn

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

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