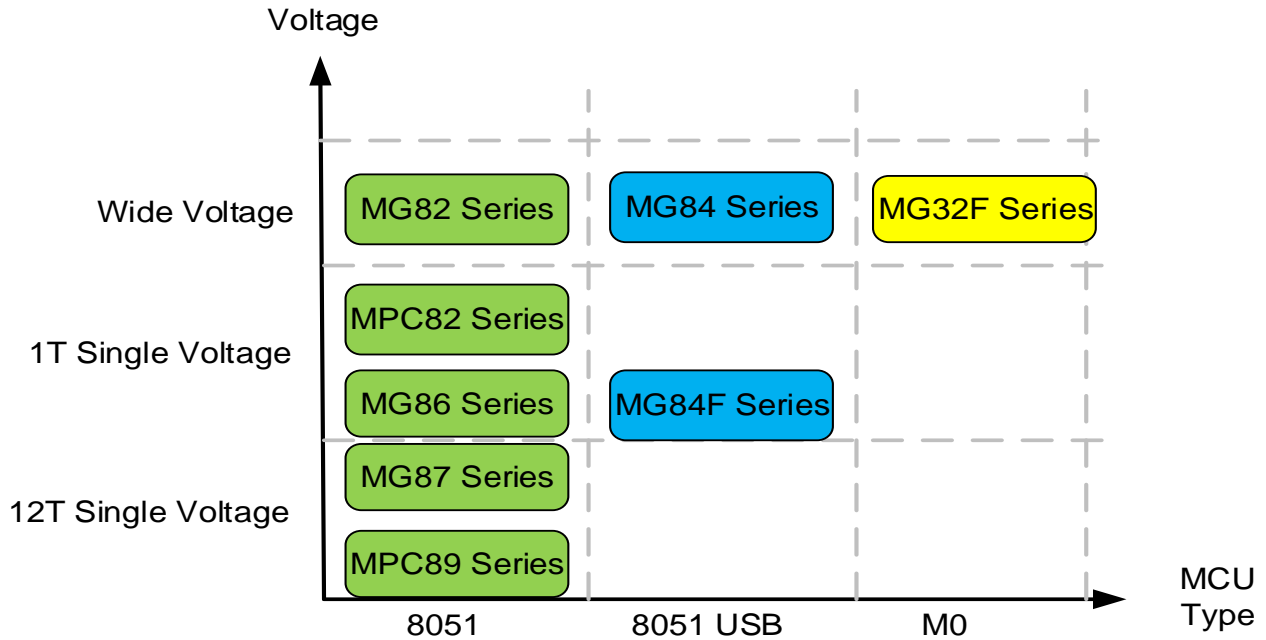
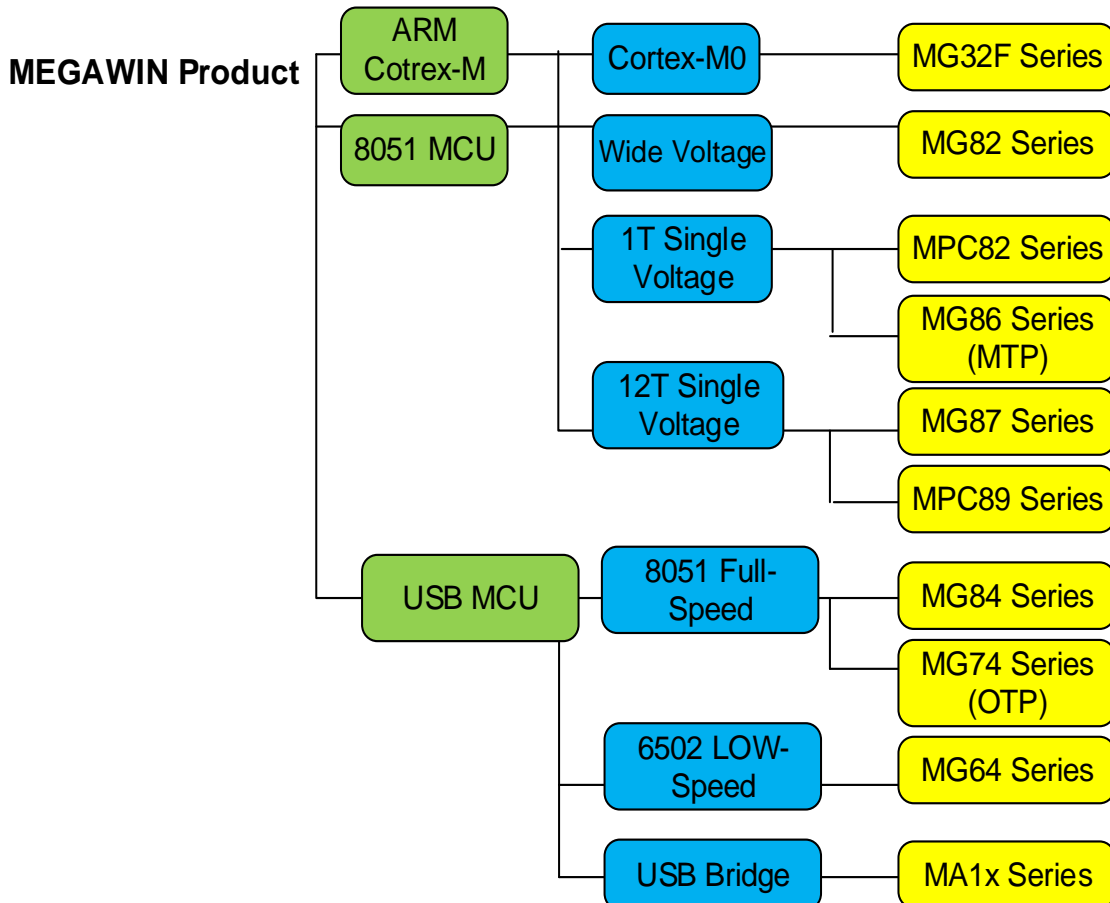


Product Selection Guide

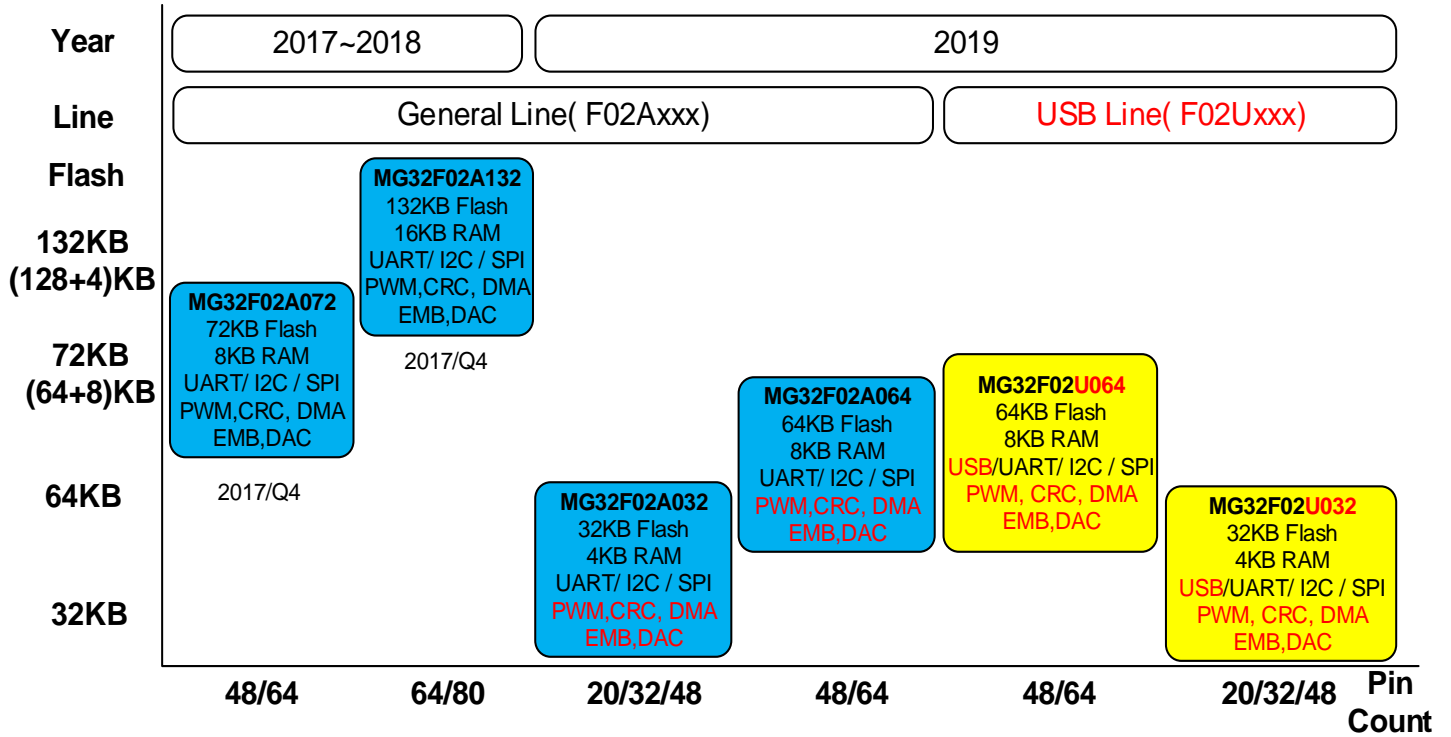
8051 / Cortex-M0 Flash MCUs



Product Category



ARM Cortex-M0 MCU



• MG32F02A Series (Cortex-M0)

Item	Vdd	Flash ROM	Data RAM	Max Freq.	Timer (16-bit)	IO	ADC	Comp-arator	Inter-Face	CCP ⁶	ISP/IAP	Package
**MG32F02A032* ¹	1.8V~5.5V	32KB	4096B	48MHz ²	5+RTC	44	12-Bit , 8-CH	2	UART ³ x2, I ² C SPI/QPI/OPI, CRC, DMA	4-CH	yes ⁵	SSOP20, QFN32, LQFP48
**MG32F02A064* ¹	1.8V~5.5V	64KB	8192B	48MHz ²	6+RTC	44/60	12-Bit , 16-CH	3	UART ³ x3, I ² Cx2 SPI/QPI/OPI, CRC, DMA	6-CH	yes ⁵	LQFP48, LQFP64
MG32F02A072* ¹	1.8V~5.5V	72KB	8192B	48MHz ²	7+RTC	44/59	12-Bit , 16-CH	4	UART ³ x4, I ² Cx2 SPI/QPI/OPI, CRC, DMA	8-CH	yes ⁵	LQFP48, LQFP64
MG32F02A132* ¹	1.8V~5.5V	132KB	16384B	48MHz ²	7+RTC	59/73	12-Bit , 16-CH	4	UART ³ x4, I ² Cx2 SPI/QPI/OPI, CRC, DMA	8-CH	yes ⁵	LQFP64, LQFP80
**MG32F02U032* ¹	1.8V~5.5V	32KB	4096B	48MHz ²	5+RTC	44	12-Bit , 8-CH	2	UART ³ x2, I ² C USB/SPI/QPI/OPI, CRC, DMA	4-CH	yes ⁵	SSOP20, QFN32, LQFP48
**MG32F02U064* ¹	1.8V~5.5V	64KB	8192B	48MHz ²	6+RTC	44/60	12-Bit , 16-CH	3	UART ³ x3, I ² Cx2 USB/SPI/QPI/OPI, CRC, DMA	6-CH	yes ⁵	LQFP48, LQFP64

** Under Development.

¹ Support M-LINK ICE;

² 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 ±2.5%;

³ All UART support SPI Master;

⁴ Current type DAC;

⁵ Share with all Flash zone.

⁶ CCP: Input Capture / Output Compare / PWM.

8051 Wide Voltage MCU MG82FG / MG82G Series

8051

Flash	5A ADC 12bit	5B ADC 10bit	5C ADC 10bit	5D ADC 10bit	5E ADC 10bit	6D ADC 12bit	Pin Count
64KB	MG82FG5A64 64KB Flash 5.25KB RAM UART/ I2C / SPI KBI/PWM		MG82FG5C64 64KB Flash 4KB RAM UART/ I2C / SPI KBI/PWM				
32KB	MG82FG5A32 32KB Flash 5.25KB RAM UART/ I2C / SPI KBI/PWM	MG82FG5B32 32KB Flash 2KB RAM UART/ I2C / SPI KBI/PWM	MG82FG5C32 32KB Flash 2KB RAM UART/ I2C / SPI KBI/PWM		MG82G5E32 32KB Flash 2KB RAM UART/ I2C / SPI KBI/PWM/OBM CRC		
16KB		MG82FG5B16 16KB Flash 2KB RAM UART/ I2C / SPI KBI/PWM		MG82FG5D16 16KB Flash 1KB RAM UART/ I2C / SPI KBI/PWM		MG82F6D17 16KB Flash 1KB RAM UART/ I2C / SPI CRC/KBI/PWM	
	48/64	20/28/32	48/64	20/28	48	16/20	

• MG82FG / MG82G Series

Item	Operating Voltage	Flash ROM	Max Operation Frequency	Timer (16-BIT)	ADC	Communication	PCA	WDT	Code Protection	ISP	Package Type
		Data RAM		IO	ACMP		PWM			IAP	
MG82FG5A32¹	2.0V~5.5V	32KB	32MHz ²	4	12-Bit, 8-CH	UART x2, SPI, TWI (I ² C)	1	YES ⁴	YES	4KB Max	LQFP48
		256B+5120B		43 / 55	NA		6-CH			63.5KB Max ⁵	LQFP64
MG82FG5A64¹	2.0V~5.5V	64KB	32MHz ²	4	12-Bit, 8-CH	UART x2, SPI, TWI (I ² C)	1	YES ⁴	YES	4KB Max	LQFP48
		256B+5120B		43 / 55	NA		6-CH			63.5KB Max ⁵	LQFP64
MG82FG5B16¹	1.8V~5.5V	16KB	25MHz ⁶	3 + RTC	10-Bit, 8-CH	UART ³ x2, SPI, TWI (I ² C) x 2,	1	YES ⁴	YES	4KB Max	SSOP20,
		256B+768B		17 / 25 / 29	NA		8-CH			15.5KB Max ⁵	SSOP28,
MG82FG5B32¹	1.8V~5.5V	32KB	25MHz ⁶	3 + RTC	10-Bit, 8-CH	STWI, LIN, 7816	1	YES ⁴	YES	4KB Max	LQFP32,
		256B+1792B		25 / 29	NA		8-CH			31.5KB Max ⁵	QFN32
MG82FG5C32¹	1.8V~5.5V	32KB	25MHz ⁶	5 + RTC	10-Bit, 16-CH	UART ³ x4, SPI/QPI,	2	YES ⁴	YES	7.5KB Max	LQFP48 LQFP64
		256B+1792B		44 / 59	3		12-CH			31.5KB Max ⁵	
MG82FG5C64¹	1.8V~5.5V	64KB	25MHz ⁶	5 + RTC	10-Bit, 16-CH	TWI (I ² C) x 2, STWI, LIN, 7816 x 3	2	YES ⁴	YES	7.5KB Max	LQFP48 LQFP64
		256B+3840B		44 / 59	3		12-CH			63.5KB Max ⁵	
MG82FG5D16¹	1.8V~5.5V	16KB	25MHz ⁶	3 + RTC	10-Bit, 8-CH	UART ³ , SPI, TWI (I ² C), STWI	1	YES ⁴	YES	7.5KB Max	SOP16
		256B+768B		13 / 17	1		6-CH			15.5KB Max ⁵	SSOP20
**MG82G5E32¹	1.8V~5.5V	32KB	25MHz ⁶	4 + RTC	10-Bit, 8-CH	UART ³ x2, SPI, TWI (I ² C), STWI CRC	1	YES ⁴	YES	7.5KB Max	LQFP48
		256B+1792B		44	2		8-CH			31.5KB Max ⁵	
MG82F6D17	1.8V~5.5V	16KB	25MHz ⁶	3 + RTC	10-Bit, 8-CH	UART ³ , SPI, TWI (I ² C), STWI	1	YES ⁴	YES	7.5KB Max	SOP16
		256B+768B		13 / 17	1		6-CH			15.5KB Max ⁵	SSOP20

** Under Development.

¹ Support OCD ICE;

² Used internal RC oscillator 11.059MHz as default. Frequency deviation: at 25°C, under ±1%; at -40°C~85°C, under ±1.5%; at -40°C~125°C, under ±2%;

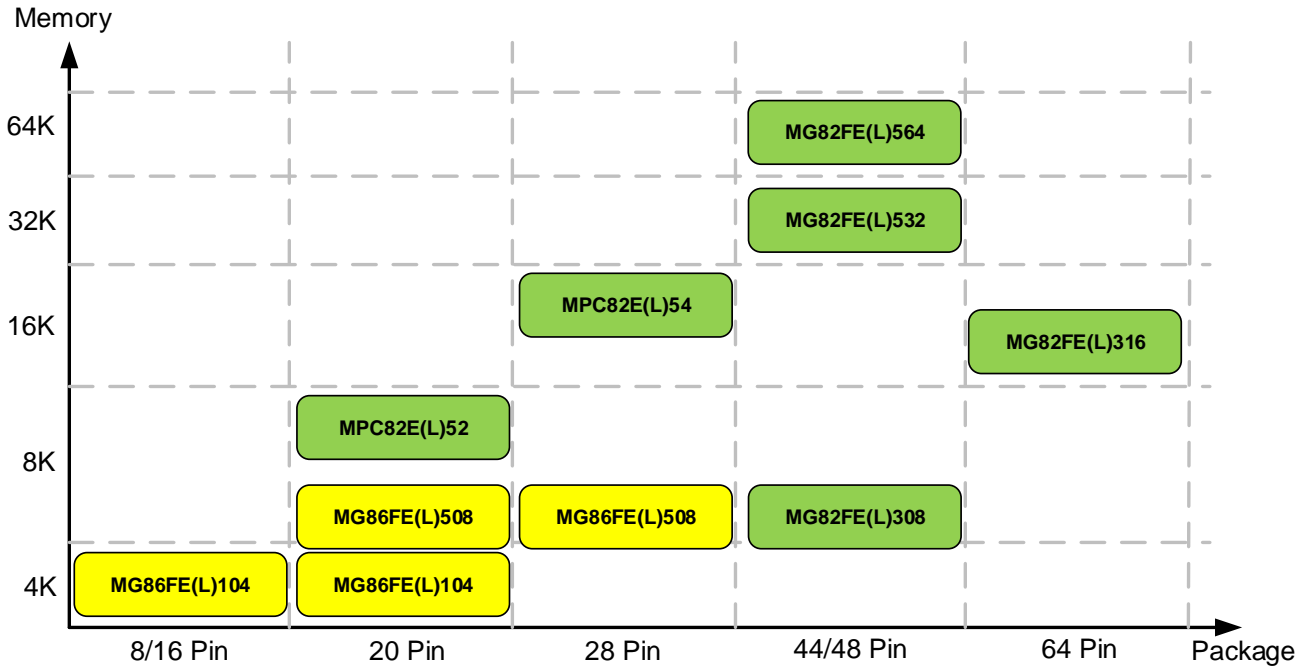
³ Support SPI Master Mode;

⁴ Support Watch Mode;

⁵ Support S/W setting;

⁶ 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%.

1T 8051 Single Voltage MCU MPC82 / MG82F / MG86F Series



• MPC82 / MG82F Series

Item	Operating Voltage	Flash ROM		Max Operation Frequency	Timer (16-BIT)		ADC	Communication	PCA		WDT	Code Protection	ISP		Package Type
		Data	RAM		IO	ACMP			PWM	WDT			IAP		
MPC82L/E52	L:2.4V~3.6V E:4.5V~5.5V	8KB	256B	24MHz	2	8-Bit, 8-CH	UART, SPI	1	YES	YES	3KB Max	PDIP20, SOP20 TSSOP20			
		15			NA	2-CH		7.5KB Max							
MPC82L/E54	L:2.4V~3.6V E:4.5V~5.5V	15.5KB	256B+256B	24MHz	2	10-Bit, 8-CH	UART, SPI	1	YES	YES	3.5KB Max	PDIP28, SOP28 SSOP28			
		23			NA	4-CH		15KB Max							
MG82FL/E532 ¹	L:2.4V~3.6V E:4.5V~5.5V	32KB	256B+1024B	24MHz ²	3	10-Bit, 8-CH	UART x 2, SPI	1	YES ⁴	YES	4KB Max	LQFP44 LQFP48			
		45			NA	6-CH		32KB Max ⁵							
MG82FL/E564 ¹	L:2.4V~3.6V E:4.5V~5.5V	64KB	256B+1024B	24MHz ²	3	10-Bit, 8-CH	UART x 2, SPI	1	YES ⁴	YES	4KB Max	LQFP44 LQFP48			
		45			NA	6-CH		63.5KB Max ⁵							
MG82FL/E308	L:2.4V~3.6V E:4.5V~5.5V	8KB	256B+256B	24MHz ³	3	NA	UART	NA	YES	YES	4KB Max	LQFP48			
		45			1	1-CH		8KB Max ⁵							
MG82FL/E316	L:2.4V~3.6V E:4.5V~5.5V	16KB	256B+256B	24MHz ³	3	NA	UART	NA	YES	YES	4KB Max	LQFP64			
		57			1	1-CH		15.5KB Max ⁵							

¹ Support OCD ICE;

² 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%;

³ 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%;

⁴ Support Watch Mode;

⁵ Support S/W setting.

• MG86F Series (1T MTP)

Item	Operating Voltage	Flash ROM		Max Operation Frequency	Timer (16-BIT)		ADC	Communication	PCA		WDT	Code Protection	ISP		Package Type
		Data	RAM		IO	ACMP			PWM	WDT			IAP		
MG86FL/E104	L:2.4V~3.6V E:4.5V~5.5V	4KB	256B	25MHz ¹	2	NA	UART ²	NA	YES ⁶	YES	3.5KB Max	SOP8 / 16 / 20			
		18 / 14 / 6			NA	NA		3.5KB Max ⁷							
MG86FL/E508	L:2.4V~3.6V E:4.5V~5.5V	8KB	256B	25MHz ¹	2 + RTC	8-Bit, 8-CH	UART ³ , SPI ⁴ , STWI ⁵	1	YES ⁶	YES	3.5KB Max	SOP20 / 28			
		26 / 18			NA	4-CH		7.5KB Max ⁷							

¹ 24MHz and 22.118MHz as internal RC oscillator, used 24MHz / 2 = 12MHz as default. Frequency deviation: at 25°C, under ±1%; at -20°C~50°C, under ±2%; at -40°C~85°C, under ±4%.

² Enhanced UART; support auto repeat and swap function;

³ Support SPI Master Mode;

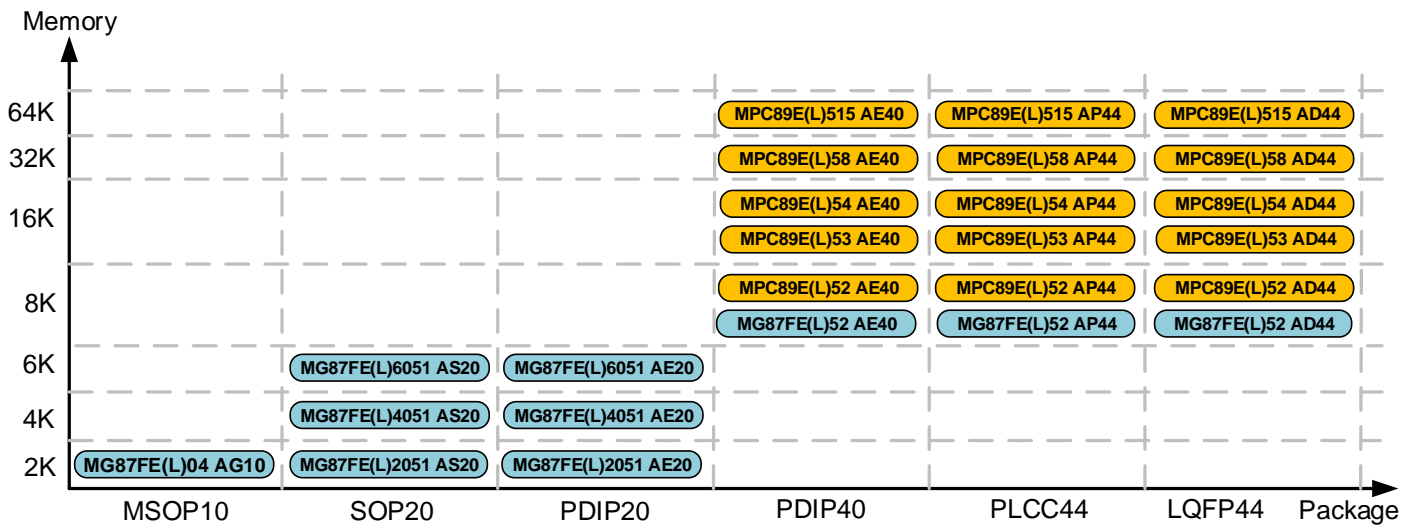
⁴ Master Mode only;

⁵ START/STOP detection flag;

⁶ Support Watch Mode.

⁷ Support S/W setting;

12T 8051 Single Voltage MCU MPC89 / MG87F Series



• 87 Series (12T / 6T)

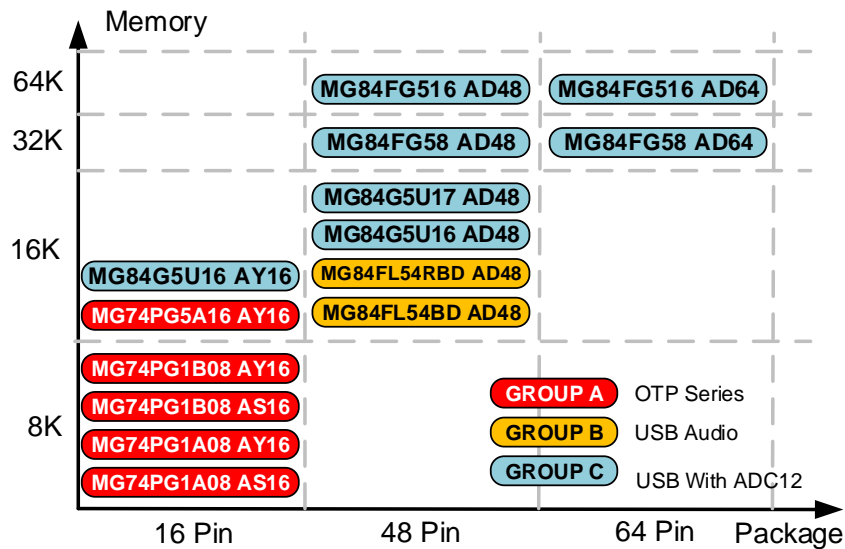
Item	Operating Voltage	Flash ROM	Max Operation Frequency	Timer (16-BIT)	ACMP	Communication	PCA	WDT	Code Protection	ISP	Package Type
		Data RAM		IO			PWM			IAP	
MG87FL/E52 [*]	L:2.4V~3.6V E:4.5V~5.5V	8KB	48MHz @ 12T 24MHz @ 6T	3	NA	UART	NA	YES	YES	3.5KB Max	PDIP40, PLCC44, LQFP44
		256B		32 / 36			NA			S/W setting	
MG87FL/E2051 [*]	L:2.4V~3.6V E:4.5V~5.5V	2KB	48MHz @ 12T 24MHz @ 6T	2	1	UART	NA	YES	YES	3.5KB Max	PDIP20, SOP20
		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	UART	NA	YES	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	UART	NA	YES	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	UART	NA	YES	YES	1.5KB	MSOP10
		256B		7			1-CH			S/W setting	

* 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.

• 89 Series (12T / 6T)

Item	Operating Voltage	Flash ROM	Max Operation Frequency	Timer (16-BIT)	ACMP	Communication	PCA	WDT	Code Protection	ISP	Package Type
		Data RAM		IO			PWM			IAP	
MPC89L/E52	L:2.4V~3.6V E:4.5V~5.5V	8KB	48MHz @ 12T 24MHz @ 6T	3	NA	UART	NA	YES	YES	4KB Max	PDIP40, PLCC44, LQFP44
		256B+256B		32 / 36			NA			6KB Max	
MPC89L/E53	L:2.4V~3.6V E:4.5V~5.5V	15KB	48MHz @ 12T 24MHz @ 6T	3	NA	UART	NA	YES	YES	4KB Max	PDIP40, PLCC44, LQFP44
		256B+256B		32 / 36			NA			NA	
MPC89L/E54	L:2.4V~3.6V E:4.5V~5.5V	16KB	48MHz @ 12T 24MHz @ 6T	3	NA	UART	NA	YES	YES	4KB Max	PDIP40, PLCC44, LQFP44
		256B+1024B		32 / 36			NA			46KB Max	
MPC89L/E58	L:2.4V~3.6V E:4.5V~5.5V	32KB	48MHz @ 12T 24MHz @ 6T	3	NA	UART	NA	YES	YES	4KB Max	PDIP40, PLCC44, LQFP44
		256B+1024B		32 / 36			NA			30KB Max	
MPC89L/E515	L:2.4V~3.6V E:4.5V~5.5V	63KB	48MHz @ 12T 24MHz @ 6T	3	NA	UART	NA	YES	YES	4KB Max	PDIP40, PLCC44, LQFP44
		256B+1024B		32 / 36			NA			NA	

8051 USB MCU



• 84 Series (USB FS)

Item	Operating Voltage	Flash ROM Data RAM	Max Operation Frequency	Timer (16-BIT)		ADC ACMP	Communication	PCA PWM	WDT	End Points	ISP		Package Type
				IO	IO						IAP	IAP	
MG84FL54BD	2.7V~3.6V	16KB 256B+576B	24MHz	3	36	NA	USB, UART, TWI(I ² C), SPI	NA	NA	4	4KB Max 15KB Max	LQFP48	
MG84FL54RBD	2.7V~3.6V	16KB 256B	24MHz	3	31	NA	USB, UART, TWI(I ² C), SPI	NA	NA	6	4KB Max 15KB Max	LQFP48	
MG84FG58 ¹	2.0V~5.5V	32KB 256B+4096B	32MHz ²	4	41 / 55	12-Bit, 8-CH	USB, UARTx2, TWI(I ² C), SPI	1 6-CH	YES ⁴	11	4KB Max 63.5KB Max ⁵	LQFP48 LQFP64	
MG84FG516 ¹	2.0V~5.5V	64KB 256B+4096B	32MHz ²	4	41 / 55	12-Bit, 8-CH	USB, UARTx2, TWI(I ² C), SPI	1 6-CH	YES ⁴	11	4KB Max 63.5KB Max ⁵	LQFP48 LQFP64	
**MG84G5U17 ¹	1.8V~5.5V	16KB 256B+768B	25MHz ²	4	42	12-Bit, 8-CH	USB, UART ³ x2, TWI(I ² C), STWI, LIN, 7816, SPI/QPI/OPI, CRC,DMA, MDU	1 8-CH	YES ⁴	5	7.5KB Max 15.5KB Max ⁵	LQFP48	

** Under Development

¹ Support OCD ICE; ² Used internal RC oscillator 12MHz as default. Frequency deviation: at 25°C, under ±1%; at -40°C~85°C, under ±2%; at USB activated, under ±0.25%;

³ Support SPI Master Mode; ⁴ Support Watch Mode; ⁵ Support S/W setting.

• 74 Series (USB FS OTP)

Item	Operating Voltage	OTP ROM Data RAM	Max Operation Frequency	Timer (16-BIT)		ADC ACMP	Communication	PCA PWM	Endpoint	DFU		Package Type
				IO	IO					IAP	IAP	
MG74PG1A08	1.8V~5.5V	8KB(OTP) 256B	12MHz ¹	2	11/13	NA	USB, PS2, UART, STWI ³ , SPI ⁴	YES 2-CH	EP0(I/O), EP1(I), EP2(I/O)	NA NA	NA	DICE, SOP16, QFN16
MG74PG1B08	1.8V~5.5V	8KB(OTP) 256B	12MHz ¹	2	11/13	NA	USB, PS2, UART, STWI ³ , SPI ⁴	YES 2-CH	EP0(I/O), EP1(I), EP2(I/O), EP3(I)	NA NA	NA	DICE, SOP16, QFN16
MG74PG5A16	1.8V~5.5V	16KB(OTP) 1024B	12MHz ¹	2	11/13	NA	USB F/S Host ² , UART, TWI(I ² C), STWI ³ , SPI ⁴	YES 2-CH	Firmware Definable	NA NA	NA	DICE, SOP16

¹ Built-in internal RC oscillator 12MHz as default. Frequency deviation: at 25°C, under ±1%; at -40°C~85°C, under ±4%, USB online mode under ±0.25%

² USB Full Speed Host Like; ³ START/STOP detection flag; ⁴ Master Mode only.

• 64 Series (USB LS/6502 MTP)

Item	Operating Voltage	Flash ROM Data RAM	Max Operation Frequency	Timer (8-BIT)		ADC ACMP	Communication	PCA PWM	Endpoint	DFU		Package Type
				IO	IO					IAP	IAP	
MG64F237	2.7V~5.5V	8KB(MTP) 256B	6MHz ¹	2	34/36	NA	USB, PS2, SPI	NA 8-Bit *2	EP0(I/O), EP1(I), EP2(I/O)	YES 8KB	NA	DICE, SSOP16, LQFP48

¹ Built-in internal RC oscillator 6MHz as default. Frequency deviation: at 25°C, under ±1%; at -20°C~50°C, under ±2%; at -40°C~85°C, under ±4%

USB Bridge

Item	Operating Voltage	USB Speed	Function	Communication	Driver	Package Type
MA104	3.0V~5.5V	Low Speed ¹	USB HID Terminal, Support: Keyboard, Mouse, Consumer Control, Vendor Define Data Driver Free	UART(19200 bps)	Free	SSOP16
MA111	3.0V~5.5V	Full Speed ²	USB HID to Serial Bridge	UART, SPI Master, TWI(I ² C) Master, GPIO	Free	SOP16, QFN16
MA112	3.0V~5.5V	Full Speed ²	USB to UART Data Bridge MS Windows Driver Supported	Virtual COM (TXDRXD)	OS	SOP16, QFN16

¹ Built-in internal RC oscillator 6MHz as default. Frequency deviation: at 25°C, under ±1%; at -40°C~85°C, under ±4%.

² Built-in internal RC oscillator 12MHz as default. Frequency deviation: at 25°C, under ±1%; at -40°C~85°C, under ±4%, USB online mode under ±0.25%.

6502 LCD MCU

Item	Operating Voltage	SEG x COM	Program Memory Size(B)	Data Memory Size(B)	I/O	Stop Mode Current (uA)	Halt Mode Current (uA)	Bias	Fcpu (RC)	Audio Output	RTC	Package Type
MG65x5xx series												
MG65L513	1.8V~3.6V	29 x 4	8K(MASK)	128	9/22	1	8uA	1/3	4MHz	IR	Yes	DICE
MG65M513	1.8V~3.6V	29 x 4	8K(MTP)	128	9/22	1	8uA	1/3	4MHz	IR	Yes	DICE, LQFP48

*1 Built-in internal RC oscillator 32MHz as default. Frequency deviation: at 25°C, under ±1%; at -20°C~50°C, under ±2%; at -40°C~85°C, under ±4%

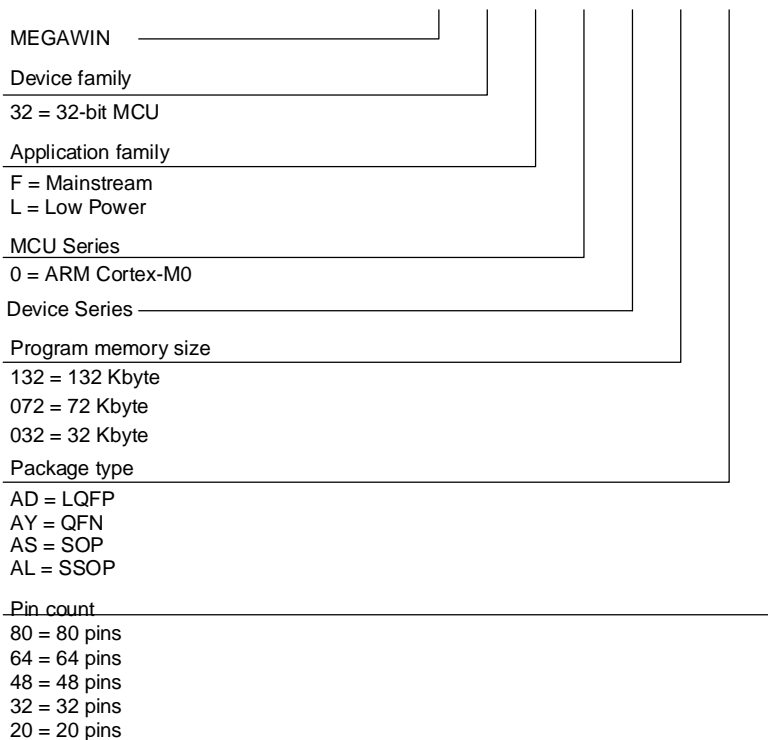
PACKAGE TYPE

Code	DESCRIPTION	Code	DESCRIPTION	Code	DESCRIPTION
AB	COB	AC	LQFP	AD	LQFP
AE	PDIP	AF	PQFP	AG	MSOP
AL	SSOP	AM	TQFP	AP	PLCC
AS	SOP	AT	TSSOP	AY	QFN
HS	SOP	AK	TOxxx	AN	DFN
AR	SOT	AI	Ink die	AH	DICE
AW	Wafer				

Order Information

Please contact the Megawin sales for available options (memory size, package, ...) and more information about this device.

MG 32 F 0 2A xxx yy zz



台湾总公司

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