



## SynCMOS MCU Selection Guide

Series	Part No.	VCC	Speed (MHz)	FLASH (KByte)	RAM (Byte)	EEPROM	I/O Pins	PACKAGE	SPI	IIC	UART	ISP&ICP	WDT	OPA & CMP	PCA (bit)	USB	ADC (ch , bit)	KBI (ch)	IRC	ICE	Machine Cycle	PWM (ch , bit)	PWM-Motor (ch , bit)	PWR Down WakeUp	Function
SM59A	SM59A16U1	2.2~5.5	25	64	256+6K	Y	38	V	1	1	2	ISP/ICP Y(3)	2	16	2.0	8 , 10	8	*Y	Y	1T/2T	4 , 16	8 , 14	1/2/3/4/5/7	DMA(ADC), MDU	
SM59R	SM59R04A2	3.0/5	25	16	256+1K	Y	36~44	P/J/Q/V	1	1	2	ISP/ICP Y	-	16	-	8 , 10	8	Y	Y	1T/2T	4 , 10/16	-	1/2/3/4/5	MDU	
	SM59R05A5	3.0/5	25	20	256+2K	Y	38~46	P/J/Q/V	1	1	2	ISP/ICP Y	2	16	-	8 , 10	8	Y	Y	1T/2T	4 , 10/16	-	1/2/3/4/5/6	RTC/MDU	
	SM59R09A5	3.0/5	25	36	256+2K	Y	38~46	P/J/Q/V	1	1	2	ISP/ICP Y	2	16	-	8 , 10	8	Y	Y	1T/2T	4 , 10/16	-	1/2/3/4/5/6	RTC/MDU	
	SM59R16A5	3.0/5	25	64	256+2K	Y	38~46	P/J/Q/V	1	1	2	ISP/ICP Y	2	16	-	8 , 10	8	Y	Y	1T/2T	4 , 10/16	-	1/2/3/4/5/6	RTC/MDU	
	SM59R05G6	2.7~5.5	25	20	256+1K	Y	38~46	P/J/Q/V	1	1	1	ISP/ICP Y	-	16	-	-	-	Y	Y	1T/2T	4 , 10/16	-	1/2/3/5	-	
	SM59R09G6	2.7~5.5	25	36	256+1K	Y	38~46	P/J/Q/V	1	1	1	ISP/ICP Y	-	16	-	-	-	Y	Y	1T/2T	4 , 10/16	-	1/2/3/5	-	
	SM59R16G6	2.7~5.5	25	64	256+1K	Y	38~46	P/J/Q/V	1	1	1	ISP/ICP Y	-	16	-	-	-	Y	Y	1T/2T	4 , 10/16	-	1/2/3/5	-	
SM59R02G1	2.7~5.5	25	8	256	Y	38/42	P/J/Q/V	-	-	1	ISP Y	-	16	-	-	-	Y	Y	1T/2T	4 , 16	-	1/2/3/7/8	-		
SM39A	SM39A16M1	1.8~5.5	25	16	256+1K	Y	26/30	S/V	1	1	1	ISP/ICP Y(3)	3CMP	16	-	8 , 10	-	*Y	Y	1T~8T	4 , 16	8 , 14	1/2/3/5/7	MDU, High Drive&Sink	
SM39R	SM39R04G1	2.7~5.5	25	4	256	Y	8/12	M/N(14)/O	-	1	1	ISP/ICP Y	-	-	-	-	-	Y	Y	1T~8T	-	-	1/2/3/5	-	
	SM39R4051	2.7~5.5	25	4	256	Y	18	20(N/S)	-	1	1	ISP/ICP Y	-	-	-	-	-	Y	Y	1T~8T	-	-	1/2/3/5	-	
	SM39R08A2	2.7~5.5	25	8	256	Y	26	S/K/G	1	1	1	ISP/ICP Y	2	16	-	8 , 10	4	*Y	Y	1T~8T	2 , 10/16	-	1/2/3/4/5	-	
	SM39R16A2	2.7~5.5	25	16	256	Y	26	S/K/G	1	1	1	ISP/ICP Y	2	16	-	8 , 10	4	*Y	Y	1T~8T	2 , 10/16	-	1/2/3/4/5	-	
	SM39R08A3	1.8~5.5	25	9	512	Y	12~18	N/S/G/O	1	1	1	ISP/ICP Y(3)	2CMP	16	-	7 , 10	4	*Y	Y	1T~8T	4 , 10/16	-	1/2/3/4/5/7	High Drive&Sink	
	SM39R16A3	1.8~5.5	25	16	512	Y	8~18	N/S/G/O/M	1	1	1	ISP/ICP Y(3)	2CMP	16	-	7 , 10	4	*Y	Y	1T~8T	4 , 10/16	-	1/2/3/4/5/7	High Drive&Sink	
	SM39R08A5	1.8~5.5	25	8	256	Y	8	M	-	1	1	ICP Y(3)	1CMP	-	-	8 , 10	-	*Y	Y	1T~8T	4 , 10	-	1/2/3/5/7	High Drive&Sink	
SM39R16A6	1.8~5.5	25	16	256+1K	Y	22/26/30	S/V	1	1	1	ISP/ICP Y(3)	-	16	-	8 , 10	-	*Y	Y	1T~8T	4 , 14/16	-	1/2/3/5/7	MDU, High Drive&Sink		
SM59	SM5964A	3.3	25	64	256+768(1)	-	32/36	P/J/Q	-	(TWSI)	1	ISP	-	-	-	-	-	-	-	12T	2 , 5/8	-	2/9	VESA DDC/CI	
	SM5964	5	40	64	256+768	-	32/36	P/J/Q	-	-	1	ISP Y(2)	-	-	-	-	-	-	-	12T	5 , 5/8	-	9	SPWM	
	SM5953	2.4~5.5	24/40	15	256	Y	32	P/J/Q	-	-	1	ISP Y(2)	-	-	-	-	-	-	-	6/12T	-	-	9	-	
	SM5964B	2.4~5.5	24/40	64	256+768	Y	32/36	P/J/Q	-	(TWSI)	1	ISP Y(2)	-	-	-	-	-	-	-	6/12T	2 , 5/8	-	2/9	-	
	SM5958	2.4~5.5	24/40	32	256+768	Y	32/36	P/J/Q	-	(TWSI)	1	ISP Y(2)	-	-	-	-	-	-	-	6/12T	2 , 5/8	-	2/9	-	
SM89	SM894051	3.3/5	25	4	128	-	15	20(P/S)	-	-	1	-	Y(2)	-	-	-	-	-	-	12T	-	-	9	LED Driving	
	SM8952A	3.3/5	40	8	256	-	32/36	P/J/Q	-	-	1	-	Y(2)	-	-	-	-	-	-	12T	-	-	9	-	
	SM8952B	2.4~5.5	24/40	8	256	-	32	P/J/Q	-	-	1	-	Y(2)	-	-	-	-	-	-	6/12T	-	-	9	-	
	SM8954A	3.3/5	40	16	256+768(1)	-	32/36	P/J/Q	-	-	1	-	Y	-	-	-	-	-	-	12T	5 , 5/8	-	9	-	
	SM8958A	3.3/5	40	32	256+768(1)	-	32/36	P/J/Q	-	-	1	-	Y	-	-	-	-	-	-	12T	5 , 5/8	-	9	-	
	SM89516A	3.3/5	40	64	256+768(1)	-	32/36	P/J/Q	-	-	1	-	Y	-	-	-	-	-	-	12T	5 , 5/8	-	9	-	
	SM8954B	2.4~5.5	24/40	16	256+768	-	32/36	P/J/Q	-	(TWSI)	1	-	Y(2)	-	-	-	-	-	-	6/12T	2 , 5/8	-	2/9	-	
	SM8958B	2.4~5.5	24/40	32	256+768	-	32/36	P/J/Q	-	(TWSI)	1	-	Y(2)	-	-	-	-	-	-	6/12T	2 , 5/8	-	2/9	-	
SM89516B	2.4~5.5	24/40	64	256+768	-	32/36	P/J/Q	-	(TWSI)	1	-	Y(2)	-	-	-	-	-	-	6/12T	2 , 5/8	-	2/9	-		

(1) Expanding RAM is default disable  
 (2) WDT Clock from External X'tal  
 WDT Clock from Internal 250KHz (without (2) )  
 (3) WDT Clock from Internal 25KHz and support period interrupt  
 IIC =TWSI =Two-Wire Series Interface  
 EX\_INT=External Interrupt Wake-Up  
 IRC: Internal Oscillator (\* apply UART)  
 Power Down Wake up →1.RST, 2.INT, 3.WDT, 4.KBI , 5.LVI , 6.RTC , 7. WDT(INT), 8.LVR, 9.Reset

ADC = Analog and Digital Converter (類比數位轉換器)  
 KBI=Keyboard Interface=EEl (擴充外部中斷)  
 RTC = Real Time Clock (時鐘裝置)  
 MDU=Multiplication-Division unit (硬件乘除法器)  
 PCA=Programmable Counter Array (16bit Timer 2)  
 =capture · compare · clock out · 16bit PWM  
 PWM-M=PWM for Motor Control

SM59R16A5ihhkl  
 i: process ( L: 3.3V C: 5V W:2.7~5.5 U:1.8~5.5)  
 hh: Max Speed (Before SM59RxxG6) or Pin Count (After SM39R & SM59RxxG6)  
 k: package type { J:44(PLCC) M:10(MSOP-118mil) N:10/14/16/20/24/28(PDIP-300mil) O:14/16(SOP-150mil)  
 P:40(PDIP) Q:44(QFP) U:64(LQFP) V:48/32(LQFP) W:64(TQFP) S:20/24/28(SOP-300mil)  
 K:24/28(Skinny PDIP-300mil) G:20/24/28(SSOP-150mil)  
 L:PB Free (No text is Non-PB Free, "P" is PB Free)