

OKI Semiconductor 80C51 Family Microcontrollers

Microcontroller Family

Parameters		Intel Series					MSM80/83C154 Series		
		MSM80C48	MSM80C35	MSM80C49	MSM80C39	MSM80C50	MSM80C40	MSM80C154S	MSM83C154S
Operating Conditions	Power Supply (V)	2.5 ~ 6.0 / 3.0 ~ 6.0 / 3.5 ~ 6.0 / 4.5 ~ 6.0				2.5 ~ 6.0 / 3.0 ~ 6.0 / 3.5 ~ 6.0		2.7 ~ 6.0 / 4.5 ~ 5.5 / 4.75 ~ 5.25	
	Clock (MHz)	0 ~ 1.5 / 0 ~ 3 / 0 ~ 6 / 0 ~ 11				0 ~ 1.5 / 0 ~ 3 / 0 ~ 6		0 ~ 12 / 0 ~ 16 / 0 ~ 24	
	Active Current (max)	10mA Typ. (11MHz, 5V)				6mA Typ. (6MHz, 5V)		20 mA / 23 mA / 29 mA	
	Idle Current (max)	10µA				10µA		5.9 mA / 6.4 mA / 7.5 mA	
	Power Down Current	10µA				10µA		50 µA max	
	Ambient Temp (° C)	-40 ~ +85						-40 ~ +85 / -40 ~ +85 / -20 ~ +70	
Min. Instruction Cycle		1.36us(at 11MHz)			2.5us(at 6MHz)		1 µs / 0.75 µs / 0.5 µs		
Memory	Internal ROM Size	1K x 8	-	2K x 8	-	4K x 8	-	16K x 8	
	ROM (max)	4K x 8	4K x 8	4K x 8	4K x 8	4K x 8	4K x 8	64K x 8	
	Internal RAM Size	64 x 8	64 x 8	128 x 8	128 x 8	256 x 8	256 x 8	256 x 8	
	RAM (max)	256 x 8	320 x 8	256 x 8	384 x 8	256 x 8	512 x 8	64K x 8	
I/O Ports		24	24	24	24	24	24	8-bit x 4	
IRQ	Internal Interrupt	1	1	1	1	1	1	4	
	External Interrupt	1	1	1	1	1	1	2	
Func.	16-Bit Timer	1 8-Bit	1 8-Bit	1 8-Bit	1 8-Bit	1 8-Bit	1 8-Bit	3 16-Bit	
	Serial I/O	—	—	—	—	—	—	UART / SYNC	
Package Options		40DIP/44QFP	40DIP/44QFP	40DIP/44QFP	40DIP/44QFP	40DIP/44QFP	40DIP/44QFP	40/DIP, 44/QFP, 44/PLCC, 44/TQFP	
Piggy Back Version		—	—	—	—	—	—	MSM85C154VS / MSM85C154HVS	
Development System		EASE80C49	EASE80C49	EASE80C49	EASE80C49	EASE80C49	EASE80C49	EASE80C51mkII	

Microcontroller Cross Reference

Part #, Package	Matra Part#		Siemens Part#		Phillips Part#		Intel Part #	
MSM80C154SRS 40/DIP	P80C32 IP80C32 P80C154 IP80C154	P80C32-1 IP80C32-1 P80C154-1 IP80C154-1	SAB8032B-P ^[1] SAB80C32-P SAB8032B-P-T40/85 ^[1] SAB80C32-P-T40/85	SAB8032B-16-P ^[1] SAB80C32-16-P SAB80C32-16-P-T40/85	MAB8032AH-2P ^[1] MAF8032AH-2P ^[1] SCN8032HCCN40 ^[1] SCN8032HACN40 ^[1]	SCN8032HCFN40 ^[1] SCN8032HAFN40 ^[1] P80C32EBPN P80C32EFPN	P8032AH ^[1] TP8032AH ^[1] P80C32 TP80C32	TP80C51FA-2 ^[2] P80C32-1 P80C51FA-1 ^[2]
MSM80C154SJS 44/PLCC	S80C32 IS80C32 S80C154 IS80C154	S80C32-1 IS80C32-1 S80C154-1 IS80C154-1	SAB8032B-N ^[1] SAB80C32-N SAB8032B-N-T40/85 ^[1] SAB80C32-N-T40/85	SAB8032B-16-N ^[1] SAB80C32-16-N SAB80C32-16-N-T40/85	MAB8032AH-2WP ^[1] MAF8032AH-2WP ^[1] SCN8032HCCA44 ^[1] SCN8032HACA44 ^[1]	SCN8032HCFA44 ^[1] SCN8032HAFA44 ^[1] P80C32EBAA P80C32EFAA	N8032AH ^[1] TN8032AH ^[1] N80C32 TN80C32 TN80C51FA-2 ^[2]	N80C32-1 TN80C32-1 N80C51FA-1 ^[2] TN80C51FA-1 ^[2]
MSM80C154SGS-2K 44/QFP	F80C32 IF80C32 F80C154 IF80C154	F80C32-1 IF80C32-1 F80C154-1 IF80C154-1	—	—	P80C32EBBB P80C32EFBB	—	S80C32 TS80C32 S80C51FA ^[2] TS80C51FA ^[2] TS80C51FA-2 ^[2]	S80C32-1 TS80C32-1 S80C51FA-1 ^[2] TS80C51FA-1 ^[2]
MSM85C154VS ^[3]	C80C154P16	—	—	—	—	—	—	—

[1] NMOS. [2] Except PCA. [3] Piggyback version.

OKI Semiconductor

80Cxx Family Microprocessors and Peripherals

80Cxx Microprocessors [1]

Part Number	Description	Pins / Package	Supply Current (Max)	Intel Equivalent
MSM80C85AH	8-bit microprocessor, 5 MHz, low-power	40 / DIP, 44 / FLAT, 44 / PLCC	22 mA	8085AH
MSM80C88A	8-bit microprocessor, 5 MHz	40 / DIP, 56 / FLAT, 40 / PLCC	55 mA	8088
MSM80C88A-2	8-bit microprocessor, 8 MHz	40 / DIP, 56 / FLAT, 40 / PLCC	80 mA	8088-2
MSM80C88A-10	8-bit microprocessor, 10 MHz	40 / DIP, 56 / FLAT, 40 / PLCC	100 mA	-
MSM80C86A	16-bit microprocessor, 5 MHz	40 / DIP, 56 / FLAT, 44 / PLCC	55 mA	8086
MSM80C86A-2	16-bit microprocessor, 8 MHz	40 / DIP, 56 / FLAT, 44 / PLCC	80 mA	8086-2
MSM80C86A-10	16-bit microprocessor, 10 MHz	40 / DIP, 56 / FLAT, 44 / PLCC	100 mA	-

[1] All products are 5 V.

Microprocessor Peripherals [1]

Part Number	Description	Pins / Package	Supply Current (Max)	Intel Equivalent
MSM81C55-5	2048-bit STRAM with I/O and timer	44 / DIP, 44 / FLAT, 44 / QFP 44 / PLCC	5 mA	8155
MSM82C12	8-bit I/O port	24 / DIP, 24 / FLAT	1 mA	8212
MSM82C37A-5 MSM82C37B-5	Programmable DMA controller	44 / FLAT, 44 / PLCC	10 mA	8237A
MSM82C43	I/O port expander	24 / DIP, 24 / FLAT	1 mA	8243
MSM82C51A-2	Programmable communications interface	28 / DIP, 32 / FLAT, 28 / PLCC	5 mA	8251A
MSM82C53-2	Programmable interval timer	24 / DIP, 32 / FLAT, 28 / PLCC	8 mA	8253
MSM82C54-2	Programmable counter	24 / DIP, 32 / FLAT, 28 / PLCC	10 mA	8254
MSM82C55A-2	Programmable peripheral interface	40 / DIP, 44 / FLAT, 44 / PLCC	8 mA	8255
MSM82C59A-2	Programmable interrupt controller	28 / DIP, 32 / FLAT, 28 / PLCC	5 mA	8259A-2
MSM82C84A-2	Clock generator and driver (8 MHz)	18 / DIP, 24 / FLAT, 20 / PLCC	16 mA	8284-A
MSM82C88-2	Bus controller	20 / DIP, 24 / FLAT, 20 / PLCC	10 mA	8288

[1] All products are 5 V.

Microprocessor Cross Reference

OKI Part#	Description	Intel	NEC	Toshiba	National	Harris	Mitsubishi
OKI CMOS to Competitor CMOS							
MSM80C88A-10	8-bit microprocessor (10 MHz)	-	μPD70108	-	-	80C88	-
MSM80C86A-10	16-bit microprocessor (10 MHz)	-	μPD70166	-	-	80C86	-
OKI CMOS to Competitor NMOS							
MSM80C85AH	8-bit microprocessor (5 MHz)	8085AH	μPD8085A	TMP8085A	AM8085A	-	M5L8085A
MSM80C88A-10	8-bit microprocessor (10 MHz)	8088	μPD8088	-	AM8088	MBL8088	M5L8088
MSM80C86A-10	16-bit microprocessor (10 MHz)	8086	μPD8086	-	AM8086	MBL8086	M5L8086

Peripheral NMOS Cross Reference

OKI Part#	Description	Intel	NEC	Toshiba	National	Harris	Mitsubishi
MSM82C51A-2	USART (38 ~ 64K baud)	-	μPD71051	TMP82C51A-2/-10	-	82C52	M5M82C51
MSM82C53-2	Programmable interval timer (8 MHz)	-	μPD71054	-	-	82C54	M5M82C54
MSM82C54-2	Programmable interval timer (10 MHz)	-	-	TMP82C54-2	-	-	-
MSM82C55A-2	Programmable peripheral interface	-	μPD71055	TMP82C55A-2/-10	-	82C55	M5M82C55
MSM82C59A-2	Programmable interrupt controller	-	μPD71059	TMP82C59A	-	82C59	M5M82C59
MSM82C84A-2	Clock generator and driver (8 MHz out)	-	μPD71084	-	-	82C84	-
MSM82C88-2	System bus controller	-	μPD71088	-	-	82C88	-