OKI Semiconductor
80C51 Family Microcontrollers

Microcontroller Family

	Parameters	MSM80C31/51 Series			MSM80/83C154 Series	
		MSM80C31F	MSM80C51F	MSM80C31F-1	MSM80C154S [1]	MSM83C154S [2]
Operating Conditions	Power Supply (V)	2.5 ~ 6.0 / 4.0 ~ 6.0		4.75 ~ 5.25	2.7 ~ 6.0 / 4.5 ~ 5.5 / 4.75 ~ 5.25	
	Clock (MHz)	0.5 ~ 3.0 / 0.5 ~ 12.0		0.5 ~ 16	0 ~ 12 / 0 ~ 16 / 0 ~ 24	
	Active Current (max)	7.5 mA / 20 mA		23 mA	20 mA / 23 mA / 29 mA	
	Idle Current (max)	2.2 mA /5 mA		6 mA	5.9 mA / 6.4 mA / 7.5 mA	
	Power Down Current	50 µA max	50 µA max	50 µA max	50 µA max	
	Ambient Temp (°C)	-40 to +85	-40 to +85	-20 to +70	-40 to +85 / -40 to +85 / -20 to +70	
	Min. Instruction Cycle	4 µs / 1 µs	4 µs / 1 µs	0.75 µs	1 µs / 0.75 µs / 0.5 µs	
Memory	Internal ROM Size	–	4K x 8	–	–	16K x 8
	ROM (max)	64K x 8	64K x 8	64K x 8	64K x 8	64K x 8
	Internal RAM Size	128 x 8	128 x 8	128 x 8	256 x 8	256 x 8
	RAM (max)	64K x 8	64K x 8	64K x 8	64K x 8	64K x 8
	I/O Ports	8-bit x 4	8-bit x 4	8-bit x 4	8-bit x 4	8-bit x 4
IRQ	Internal Interrupt	3	3	3	4	4
	External Interrupt	2	2	2	2	2
Func.	16-Bit Timer	2	2	2	3	3
	Serial I/O	UART / SYNC	UART / SYNC	UART / SYNC	UART / SYNC	UART / SYNC
	Package Options	40/DIP, 44/QFP, 44/PLCC			40/DIP, 44/QFP, 44/PLCC, 44/TQFP	
	Piggy Back Version	MSM85C154VS			MSM85C154VS / MSM85C154HVS	
	Development System	EASE80C51mkII			EASE80C51mkII	

[1] This is preliminary data, with product availability in November 1994.

Microcontroller Cross Reference

Part #, Package	Matra Part#	Siemens Part#		Phillips Part#		Intel Part #	
MSM80C31FRS 40/DIP	P80C31 IP80C31	SAB8031A-P [1] SAB8031A-12-P-T40/85		SC80C31BCCN40 PCB80C31BH2-12P	SC80C31BACN40	P8031AH [1] TP8031AH [1]	P80C31BH P80C31BH-2
MSM80C31FRS-1 40/DIP	P80C31-1 IP80C31-1	SAB8031A-16-P[1]		PCB80C31BH3-16P SC80C31BCGN40	PCF80C31BH3-16P SC80C31BAGN40	P80C31BH-1	
MSM80C31FJS 44/PLCC	S80C31 IS80C31	SAB8031A-N [1]		PCB80C31BH2-12WP SC80C31BCCA44	SC80C31BACA44	N8031AH [1] TN8031AH [1]	N80C31BH N80C31BH-2
MSM80C31FJS-1 44/PLCC	S80C31-1 IS80C31-1	SAB8031A-16-N [1]		PCB80C31BH3-16WP SC80C31BCGA44	PCF80C31BH3-16WP SC80C31BAGA44	N80C31BH-1	
MSM80C31FVGS-V1K 44/QFP	F80C31 IF80C31	–		PCB80C31BH2-12H SC80C31BCCB44	SC80C31BACB44	S80C31BH S80C31BH-2	
MSM80C31FVGS-V1K-1 44/QFP	F80C31-1 IF80C31-1	–		PCB80C31BH3-16H SC80C31BCGB44	PCF80C31BH3-16H SC80C31BAGB44	S80C31BH-1	
MSM80C154SRS 40/DIP	P80C32 P80C32-1 IP80C32 IP80C32-1 P80C154 P80C154-1 IP80C154	SAB8032B-P [1] SAB80C32-P SAB8032B-P-T40/85 [1] SAB80C32-P-T40/85	SAB8032B-16-P [1] SAB8032B-16-P SAB8032B-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 S80C32-1 IS80C32 IS80C32-1 S80C154 S80C154-1 IS80C154 IS80C154-1	SAB8032B-N [1] SAB80C32-N SAB8032B-N-T40/85 [1] SAB80C32-N-T40/85	SAB8032B-16-N [1] SAB8032B-16-N SAB8032B-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]

OKI Semiconductor
80Cxx Family Microprocessors and Peripherals

Microcontroller Cross Reference

Part #, Package	Matra Part#		Siemens Part#	Phillips Part#	Intel Part #	
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.

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
MSM83C54-2	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	–