MCS 251
microcontrollers

Product	ROM/ EPROM (Bytes)	Register RAM (Bytes)	Timer/ Counters	Serial Port	Analog Input Channels	I/O Pins	Speed (MHz)	Process	Package	Security	Temp.	Key Features
87C251SA	8K	1K	3	1	0	32	16	CHMOS	P,N,TN,TP	L3	C, E	High Performance MCS251 Architecture, PCA, H/W WDT
87C251SB	16K	1K	3	1	0	32	16	CHMOS	P,N,TN,TP	L3	C, E	High Performance MCS251 Architecture, PCA, H/W WDT
87C251SP	8K	512	3	1	0	32	16	CHMOS	P,N,TN,TP	L3	C, E	High Performance MCS251 Architecture, PCA, H/W WDT
87C251SQ	16K	512	3	1	0	32	16	CHMOS	P,N,TN,TP	L3	C, E	High Performance MCS251 Architecture, PCA, H/W WDT
83C251SA 87C251SA, ROM	8K	1K	3	1	0	32	16	CHMOS	P,N,TN,TP	L3	C, E	High Performance MCS251 Architecture, PCA, H/W WDT
83C251SB 87C251SB, ROM	16K	1K	3	1	0	32	16	CHMOS	P,N,TN,TP	L3	C, E	High Performance MCS251 Architecture, PCA, H/W WDT
83C251SP 87C251SP, ROM	8K	512	3	1	0	32	16	CHMOS	P,N,TN,TP	L3	C, E	High Performance MCS251 Architecture, PCA, H/W WDT
83C251SQ 87C251SQ, ROM	16K	512	3	1	0	32	16	CHMOS	P,N,TN,TP	L3	C, E	High Performance MCS251 Architecture, PCA, H/W WDT
80C251SB	ROMless	1K	3	1	0	32	16	CHMOS	P,N,TN,TP	L3	C, E	High Performance MCS251 Architecture, PCA, H/W WDT
80C251SQ	ROMless	512	3	1	0	32	16	CHMOS	P,N,TN,TP	L3	C, E	High Performance MCS251 Architecture, PCA, H/W WDT

MCS 151
microcontrollers

Product	ROM/ EPROM (Bytes)	Register RAM (Bytes)	Timer/ Counters	Serial Port	Analog Input Channels	I/O Pins	Speed (MHz)	Process	Package	Security	Temp.	Key Features
87C151SA	8K	256	3	1	0	32	16	CHMOS	P,N,TN,TP	L3	C, E	High Performance MCS151 Architecture, PCA, H/W WDT
87C151SB	16K	256	3	1	0	32	16	CHMOS	P,N,TN,TP	L3	C, E	High Performance MCS151 Architecture, PCA, H/W WDT
87C151SP	8K	256	3	1	0	32	16	CHMOS	P,N,TN,TP	L3	C, E	High Performance MCS151 Architecture, PCA, H/W WDT
87C151SQ	16K	256	3	1	0	32	16	CHMOS	P,N,TN,TP	L3	C, E	High Performance MCS151 Architecture, PCA, H/W WDT
83C151SA 87C151SA, ROM	8K	256	3	1	0	32	16	CHMOS	P,N,TN,TP	L3	C, E	High Performance MCS151 Architecture, PCA, H/W WDT
83C151SB 87C151SB, ROM	16K	256	3	1	0	32	16	CHMOS	P,N,TN,TP	L3	C, E	High Performance MCS151 Architecture, PCA, H/W WDT
83C151SP 87C151SP, ROM	8K	256	3	1	0	32	16	CHMOS	P,N,TN,TP	L3	C, E	High Performance MCS151 Architecture, PCA, H/W WDT
83C151SQ 87C151SQ, ROM	16K	256	3	1	0	32	16	CHMOS	P,N,TN,TP	L3	C, E	High Performance MCS151 Architecture, PCA, H/W WDT
80C151SB	ROMless	256	3	1	0	32	16	CHMOS	P,N,TN,TP	L3	C, E	High Performance MCS151 Architecture, PCA, H/W WDT
80C151SQ	ROMless	256	3	1	0	32	16	CHMOS	P,N,TN,TP	L3	C, E	High Performance MCS151 Architecture, PCA, H/W WDT

MCS 51
classic family

Product	ROM/ EPROM (Bytes)	Register RAM (Bytes)	Timer/ Counters	Serial Port	Analog Input Channels	I/O Pins	Speed (MHz)	Process	Package	Security	Temp.	Key Features
80C31BH	ROMless	128	2	1	0	32	12,16,24	CHMOS	N, P, S	N/A	C, E, A, M	Power Save Modes
80C51BH	4K ROM	128	2	1	0	32	12,16,24	CHMOS	N, P, S	P	C, E, A, M	Power Save Modes
87C51	4K EPROM/OTP	128	2	1	0	32	12,16,24,33	CHMOS	D, N, P, S	L3	C, E, A, M	Three-Level Memory Lock
80C32	ROMless	256	3	1	0	32	12,16,24,33	CHMOS	N, P, S	N/A	C, E, A	Up-Down Timer/Counter
80C52	8K ROM	256	3	1	0	32	12,16,24,33	CHMOS	N, P, S	L1	C, E, A	Up-Down Timer/Counter
87C52	8K EPROM/OTP	256	3	1	0	32	12,16,24,33	CHMOS	D, N, P, S	L3	C, E, A	Up-Down Timer/Counter
80C54	16K ROM	256	3	1	0	32	12,16,24,33	CHMOS	N, P, S	L1	C, E, A	Up-Down Timer/Counter
87C54	16K EPROM/OTP	256	3	1	0	32	12,16,24,33	CHMOS	D, N, P, S	L3	C, E, A	Up-Down Timer/Counter
80C58 87C58, ROM	32K ROM	256	3	1	0	32	12,16,24,33	CHMOS	N, P, S	L1	C, E	Up-Down Timer/Counter
87C58	32K EPROM/OTP	256	3	1	0	32	12,16,24,33	CHMOS	D, N, P, S	L3	C, E	Up-Down Timer/Counter
80C51FA	ROMless	256	3	1	0	32	12,16,24,33	CHMOS	N, P, S	N/A	C, E, A	Programmable Counter Array (PCA), Programmable Clock-Out
83C51FA	8K ROM	256	3	1	0	32	12,16,24,33	CHMOS	N, P, S	L1	C, E, A	Programmable Counter Array (PCA), Programmable Clock-Out
87C51FA	8K EPROM/OTP	256	3	1	0	32	12,16,24,33	CHMOS	D, N, P, S	L3	C, E, A	Programmable Counter Array (PCA), Programmable Clock-Out
83C51FB 87C51FB, ROM	16K ROM	256	3	1	0	32	12,16,24,33	CHMOS	N, P, S	L1	C, E, A	Programmable Counter Array (PCA), Programmable Clock-Out
87C51FB	16K EPROM/OTP	256	3	1	0	32	12,16,24,33	CHMOS	D, N, P, S	L3	C, E, A, M	Programmable Counter Array (PCA), Programmable Clock-Out
83C51FC 87C51FC, ROM	32K ROM	256	3	1	0	32	12,16,24,33	CHMOS	N, P, S	L1	C, E, A, M	Programmable Counter Array (PCA), Programmable Clock-Out
87C51FC	32K EPROM/OTP	256	3	1	0	32	12,16,24,33	CHMOS	D, N, P, S	L3	C, E, A, M	Programmable Counter Array (PCA), Programmable Clock-Out

MCS 51
expanded RAM family

Product	ROM/ EPROM (Bytes)	Register RAM (Bytes)	Timer/ Counters	Serial Port	Analog Input Channels	I/O Pins	Speed (MHz)	Process	Package	Security	Temp.	Key Features
**80C51RA	ROMless	512	3	1	0	32	12,16,20,24	CHMOS	N, P, S	N/A	C, E	Expanded RAM, Programmable Clock-Out, H/W WDT
*83C51RA 87C51RA, ROM	8K ROM	512	3	1	0	32	12,16,20,24	CHMOS	N, P, S	L1	C, E	Expanded RAM, Programmable Clock-Out, H/W WDT
**87C51RA	8K OTP	512	3	1	0	32	12,16,20,24	CHMOS	N, P, S	L3	C, E	Expanded RAM, Programmable Clock-Out, H/W WDT
**83C51RB 87C51RB, ROM	16K ROM	512	3	1	0	32	12,16,20,24	CHMOS	N, P, S	L1	C, E	Expanded RAM, Programmable Clock-Out, H/W WDT
**87C51RB	16K OTP	512	3	1	0	32	12,16,20,24	CHMOS	N, P, S	L3	C, E	Expanded RAM, Programmable Clock-Out, H/W WDT
**83C51RC 87C51RC, ROM	32K ROM	512	3	1	0	32	12,16,20,24	CHMOS	N, P, S	L1	C, E	Expanded RAM, Programmable Clock-Out, H/W WDT
**87C51RC	32K OTP	512	3	1	0	32	12,16,20,24	CHMOS	N, P, S	L3	C, E	Expanded RAM, Programmable Clock-Out, H/W WDT

MCS 51
low-voltage family

Product	ROM/ EPROM (Bytes)	Register RAM (Bytes)	Timer/ Counters	Serial Port	Analog Input Channels	I/O Pins	Speed (MHz)	Process	Package	Security	Temp.	Key Features
**80L52 87L52, ROM	8K ROM	256	3	1	0	32	12,16,20*	CHMOS	N, S	L1	C, E	Low-Voltage, Up-Down Timer/Counter
**87L52	8K OTP	256	3	1	0	32	12,16,20*	CHMOS	N, S	L3	C, E	Low-Voltage, Up-Down Timer/Counter
**80L54 87L54, ROM	16K ROM	256	3	1	0	32	12,16,20*	CHMOS	N, S	L1	C, E	Low-Voltage, Up-Down Timer/Counter
**87L54	16K OTP	256	3	1	0	32	12,16,20*	CHMOS	N, S	L3	C, E	Low-Voltage, Up-Down Timer/Counter
**80L58 87L58, ROM	32K ROM	256	3	1	0	32	12,16,20*	CHMOS	N, S	L1	C, E	Low-Voltage, Up-Down Timer/Counter
**87L58	32K OTP	256	3	1	0	32	12,16,20*	CHMOS	N, S	L3	C, E	Low-Voltage, Up-Down Timer/Counter
**80L51FA	ROMless	256	3	1	0	32	12,16,20*	CHMOS	N, S	N/A	C, E	Low-Voltage, Programmable Counter Array (PCA), Programmable Clock-Out
**83L51FA 87L51FA, ROM	8K ROM	256	3	1	0	32	12,16,20*	CHMOS	N, S	L1	C, E	Low-Voltage, Programmable Counter Array (PCA), Programmable Clock-Out
**87L51FA	8K OTP	256	3	1	0	32	12,16,20*	CHMOS	N, S	L3	C, E	Low-Voltage, Programmable Counter Array (PCA), Programmable Clock-Out
**83L51FB 87L51FB, ROM	16K ROM	256	3	1	0	32	12,16,20*	CHMOS	N, S	L1	C, E	Low-Voltage, Programmable Counter Array (PCA), Programmable Clock-Out
**87L51FB	16K OTP	256	3	1	0	32	12,16,20*	CHMOS	N, S	L3	C, E	Low-Voltage, Programmable Counter Array (PCA), Programmable Clock-Out
**83L51FC 87L51FC, ROM	32K ROM	256	3	1	0	32	12,16,20*	CHMOS	N, S	L1	C, E	Low-Voltage, Programmable Counter Array (PCA), Programmable Clock-Out
**87L51FC	32K OTP	256	3	1	0	32	12,16,20*	CHMOS	N, S	L3	C, E	Low-Voltage, Programmable Counter Array (PCA), Programmable Clock-Out

MCS 51
application specific family

Product	ROM/ EPROM (Bytes)	Register RAM (Bytes)	Timer/ Counters	Serial Port	Analog Input Channels	I/O Pins	Speed (MHz)	Process	Package	Security	Temp.	Key Features
**83C51KB	4K ROM	128	1	0	0	32	6	CHMOS	P	N/A	C	Integrated resonator, DedicatedScan IN/OUT Pins
80C51GB	ROMless	256	3	1+SEP	8	48	12,16	CHMOS	N1	N/A	C, E	8-Channel 8-Bit A/D, 2 PCA, 6 I/O Ports
83C51GB 87C51GB, ROM	8K ROM	256	3	1+SEP	8	48	12,16	CHMOS	N1	L1	C, E	8-Channel 8-Bit A/D, 2 PCA, 6 I/O Ports
87C51GB	8K OTP	256	3	1+SEP	8	48	12,16	CHMOS	N1	L3	C, E	8-Channel 8-Bit A/D, 2 PCA, 6 I/O Ports
80C152JA	ROMless	256	2	1	0	40	12,16.5	CHMOS	P1, N1	N/A	C, E	Multi-Protocol Serial Communication, Power Save Modes
83C152JA	8K ROM	256	2	1	0	40	12,16.5	CHMOS	P1, N1	No	C, E	Multi-Protocol Serial Communication, Power Save Modes
80C152JB	ROMless	256	2	1	0	56	12,16.5	CHMOS	N1	N/A	C, E	Multi-Protocol Serial Communication, Power Save Modes
80C152JC	ROMless	256	2	1	0	40	12,16.5	CHMOS	P1, N1	N/A	C, E	Multi-Protocol Serial Communication, Power Save Modes
83C152JC	8K ROM	256	2	1	0	40	12,16.5	CHMOS	P1, N1	N/A	C, E	Multi-Protocol Serial Communication, Power Save Modes
80C152JD	ROMless	256	2	1	0	56	12,16.5	CHMOS	N1	N/A	C, E	Multi-Protocol Serial Communication, Power Save Modes
80C51SLAH	ROMless	256	2	1	4	24	16	CHMOS	Ku, Sb	N/A	C	Keyboard Controller, Power Save Modes
81C51SLAH	16K *ROM	256	2	1	4	24	16	CHMOS	Ku, Sb, X	No	C	Keyboard Controller, Power Save Modes
83C51SLAH 87C51SLAH, ROM	16K ROM	256	2	1	4	24	16	CHMOS	Ku, Sb	No	C	Keyboard Controller, Power Save Modes
87C51SLAH	16K OTP	256	2	1	4	24	16	CHMOS	Ku, Sb	No	C	Keyboard Controller, Power Save Modes
80C51SLAL	ROMless	256	2	1	4	24	16	CHMOS	Sb	N/A	C	Low-Voltage, 4 Channel 8-Bit A/D, Power Save Modes
81C51SLAL	16K *ROM	256	2	1	4	24	16	CHMOS	Sb, X	No	C	Low-Voltage, 4 Channel 8-Bit A/D, Power Save Modes
83C51SLAL 87C51SLAL, ROM	16K ROM	256	2	1	4	24	16	CHMOS	Sb	No	C	Low-Voltage, 4 Channel 8-Bit A/D, Power Save Modes
87C51SLAL	16K OTP	256	2	1	4	24	16	CHMOS	Sb	No	C	Low-Voltage, 4 Channel 8-Bit A/D, Power Save Modes

PACKAGE OPTIONS:

D = 40LDCerDIP,
Ku = 100LD QFP (Quad Flat Pack)
N = 44LD PLCC N1 = 68LD PLCC
P = 40LD PDIP P1 = 48LD PDIP
S = 44LD QFP (Quad Flat Pack)
Sb = 100LD SQFP (Shrink Quad Flat Pack)
X = SmartDie™: Product
P = 40 Lead Plastic Dual Inline Package at commercial temp
N = 44 Lead Plastic Lead Chip Carrier at commercial temp
TN = 44 Lead Plastic Lead Chip Carrier at express temp
TP = 40 Lead Plastic Dual Inline Package at express temp

* Intel SmartDie™: Products are functionally equivalent die-level silicon versions of standard Intel products. All SmartDie Products are tested to meet commercial specifications to ensure the same quality and reliability levels of packaged products. SmartDie Products offer the user a cost-effective packaging alternative for those demanding small, form factor applications.

ROM/EPROM (bytes):
*ROM = SystemSoft Standard BIOSB

TEMPERATURE RANGES:

C = Commercial (0 to 70 degrees C)
E = Extended (-40 to 85 degrees C)
A = Automotive (-40 to 125 degrees C). To receive more information on Intel's Automotive Products, call (800) 548-4725 and ask for document #272452-01, " The Winning Formula Automotive Brochure."
M = Military (-55 to 125 degrees C) Intel 's Military and Special Products offer industrial-strength semiconductors optimized for wide temperature range and tough applications and environments. For a list of these products, call (800) 548-4725 and ask for document #271153 " Military and Special Products Portfolio."
Speed (MHz):*= commercial temperature range only
Security:
L1 = 1 Lock Bit
L2 = 2 Lock Bits
L3 = 3 Lock Bits
P = Protection
** = NEW PRODUCT

NOMENCLATURE:

83C51xx/83L51xx = Mask ROM
80C5x/80LSx = Mask ROM
87C51xx,ROM/87L51xx,ROM = FPROM
87C5x,ROM/87L5x,ROM = FPROM
87Cx51,ROM = Factory Program ROM

Where available, order Factory Programmed ROM (FPROM)