

SELECTION GUIDE

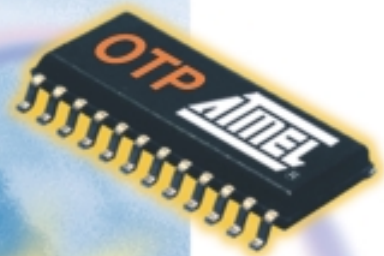
FLASH

OTP

ROM

ROMLESS

APPLICATION SPECIFIC



	Program Memory (KB)	EEPROM (KB)	RAM (Bytes)	I/O Pins	UART	Timers	Other Features	Vcc (V)	(5V/ 3V) Max Speed (MHz)	Packages
ISP FLASH										
AT89S51	4		128	32	1	2	WDT	4.0 - 5.5	33	PDIP40, PLCC44, TQFP44
AT89LS51	4		128	32	1	2	WDT	2.7 - 5.5	16	PDIP40, PLCC44, TQFP44
AT89S52	8		256	32	1	3	WDT	4.0 - 5.5	33	PDIP40, PLCC44, TQFP44
AT89LS52	8		256	32	1	3	WDT	2.7 - 5.5	33	PDIP40, PLCC44, TQFP44
AT89S8252	8	2	256	32	1	3	WDT	3.0 - 6.0	12	PDIP40, PLCC44, TQFP44
AT89S53	12		256	32	1	3	WDT	3.0 - 6.0	24	PDIP40, PLCC44, TQFP44
T89C5115	16	2	512	20	1	3+PCA	WDT, A/D	4.5 - 5.5	40	SOIC28, PLCC28, VQFP32, SOIC24*
T89C5115	16	2	512	20	1	3+PCA	WDT, A/D	2.7 - 3.6	24	SOIC28, PLCC28, VQFP32, SOIC24*
T89C51RB2	16		1280	32	1	3+PCA	WDT, SPI, BRG, KBD	4.5 - 5.5	40	PDIP40, PLCC44, VQFP44
T89C51RB2	16		1280	32	1	3+PCA	WDT, SPI, BRG, KBD	2.7 - 3.3	30	PDIP40, PLCC44, VQFP44
T89C51RC2	32		1280	32	1	3+PCA	WDT, SPI, BRG, KBD	4.5 - 5.5	40	PDIP40, PLCC44, VQFP44
T89C51RC2	32		1280	32	1	3+PCA	WDT, SPI, BRG, KBD	2.7 - 3.3	30	PDIP40, PLCC44, VQFP44
T89C51IC2	32		1280	34	1	3+PCA	WDT, SPI, I2C, RTC, BRG, KBD	4.5 - 5.5	40	PLCC44, VQFP44
T89C51IC2	32		1280	34	1	3+PCA	WDT, SPI, I2C, RTC, BRG, KBD	2.7 - 3.3	30	PLCC44, VQFP44
T89C51AC2	32	2	1280	34	1	3+PCA	WDT, A/D	4.5 - 5.5	40	PLCC44, VQFP44, CA-BGA64*
T89C51AC2	32	2	1280	34	1	3+PCA	WDT, A/D	2.7 - 3.6	20	PLCC44, VQFP44, CA-BGA64*
T89C51RD2	64	2	1280	32/48	1	3+PCA	WDT	4.5 - 5.5	40	PDIP40, PLCC44, VQFP 44, PLCC68, VQFP64
T89C51RD2	64	2	1280	32/48	1	3+PCA	WDT	2.7 - 3.6	25	PDIP40, PLCC44, VQFP 44, PLCC68, VQFP64
FLASH										
AT89C1051U	1		64	14	1	2		2.7 - 6.0	24/12	PDIP20, SOIC 20
AT89C2051	2		128	14	1	2		2.7 - 6.0	24/12	PDIP20, SOIC 20
AT89C4051	4		128	14	1	2		2.7 - 6.0	24/12	PDIP20, SOIC 20
AT89C51	4		128	32	1	2		4.0 - 6.0	33	PDIP40, PLCC44, TQFP44
AT89LV51	4		128	32	1	2		2.7 - 6.0	16	PDIP40, PLCC44, TQFP44
AT89C52	8		256	32	1	3		4.0 - 6.0	33	PDIP40, PLCC44, TQFP44
AT89LV52	8		256	32	1	3		2.7 - 6.0	16	PDIP40, PLCC44, TQFP44
AT89C55WD	20		256	32	1	3	WDT	4.0 - 5.5	33	PDIP40, PLCC44, TQFP44
AT89LV55WD	20		256	32	1	3	WDT	2.7 - 5.5	12	PDIP40, PLCC44, TQFP44
AT89LV55	20		256	32	1	3		2.7 - 5.5	12	PDIP40, PLCC44, TQFP44
AT89C51RC	32		512	32	1	3	WDT	4.0 - 5.5	33	PDIP40, PLCC44, TQFP44
AT89LV51RC	32		512	32	1	3	WDT	2.7 - 5.5	12	PDIP40, PLCC44, TQFP44
OTP										
T87C5111	4		256	21	1	2+PCA	WDT, A/D, RC Osc., Prog. I/O, SPI	4.5 - 5.5	66	SSOP24, SOIC24, DIL24
T87C5111	4		256	21	1	2+PCA	WDT, A/D, RC Osc., Prog. I/O, SPI	2.7 - 5.5	40	SSOP24, SOIC24, DIL24
T87C5112	8		256	40	1	2+PCA	WDT, A/D, RC Osc., Prog. I/O, SPI	4.5 - 5.5	66	LQFP48, PLCC52
T87C5112	8		256	40	1	2+PCA	WDT, A/D, RC Osc., Prog. I/O, SPI	2.7 - 5.5	40	LQFP48, PLCC52
TS87C52X2	8		256	32	1	3		4.5 - 5.5	60	PDIP40, PLCC44, VQFP44
TS87C52X2	8		256	32	1	3		2.7 - 5.5	40	PDIP40, PLCC44, VQFP44
AT87C5103	12		512	19		2+PCA	SPI	2.7 - 5.5	16	SSOP16, SOIC24
TS87C54X2	16		256	32	1	3	WDT	4.5 - 5.5	60	PDIP40, PLCC44, VQFP44
TS87C54X2	16		256	32	1	3	WDT	2.7 - 5.5	40	PDIP40, PLCC44, VQFP44
TS87C51U2	16		256	32	2	3	WDT, BRG	4.5 - 5.5	60	PDIP40, PLCC44, VQFP44
TS87C51U2	16		256	32	2	3	WDT, BRG	2.7 - 5.5	40	PDIP40, PLCC44, VQFP44
T87C5101	16		512	22	1	3		4.5 - 5.5	66	SOIC24, SOIC28, SSOP24, PDIL24
T87C5101	16		512	22	1	3		2.7 - 5.5	40	SOIC24, SOIC28, SSOP24, PDIL24
TS87C51RB2	16		512	32	1	3+PCA	WDT	4.5 - 5.5	60	PDIP40, PLCC44, VQFP44
TS87C51RB2	16		512	32	1	3+PCA	WDT	2.7 - 5.5	40	PDIP40, PLCC44, VQFP44
AT87F55WD	20		256	32	1	3	WDT	4.0 - 5.5	33	PDIP40, PLCC44, TQFP44
TS87C58X2	32		256	32	1	3	WDT	4.5 - 5.5	60	PDIP40, PLCC44, VQFP44
TS87C58X2	32		256	32	1	3	WDT	2.7 - 5.5	40	PDIP40, PLCC44, VQFP44

* Check for availability

	Program Memory (KB)	EEPROM (KB)	RAM (Bytes)	I/O Pins	UART	Timers	Other Features	Vcc (V)	Max Speed (MHz)	Packages
OTP (continued)										
AT87F51RC	32	512	32	1	3		WDT	3.0 - 5.5	33	PDIP40, PLCC44, TQFP44
TS87C51RC2	32	512	32	1	3+PCA		WDT	4.5 - 5.5	60	PDIP40, PLCC44, VQFP44
TS87C51RC2	32	512	32	1	3+PCA		WDT	2.7 - 5.5	40	PDIP40, PLCC44, VQFP44
TSC87251G2D	32	1024	32	1	3+EWC		C251 Core, SPI, I ² C	4.5 - 5.5	24	PDIP40, PLCC44, VQFP44
TSC87251G2D	32	1024	32	1	3+EWC		C251 Core, SPI, I ² C	2.7 - 5.5	16	PDIP40, PLCC44, VQFP44
TS87C51RD2	64	1024	32/48	1	3+PCA		WDT	4.5 - 5.5	60	PDIP40, PLCC44, VQFP44, PLCC68, VQFP64
TS87C51RD2	64	1024	32/48	1	3+PCA		WDT	2.7 - 5.5	40	PDIP40, PLCC44, VQFP44, PLCC68, VQFP64
ROM										
T83C5111	4	256	21	1	2+PCA		WDT, A/D	4.5 - 5.5	66	SSOP24, SOIC24, DIL24
T83C5111	4	256	21	1	2+PCA		WDT, A/D	2.7 - 5.5	40	SSOP24, SOIC24, DIL24
T83C5112	8	256	40	1	2+PCA		WDT, A/D	4.5 - 5.5	66	LQFP48, PLCC52
T83C5112	8	256	40	1	2+PCA		WDT, A/D	2.7 - 5.5	40	LQFP48, PLCC52
TS80C52X2	8	256	32	1	3			4.5 - 5.5	60	PDIL40, PLC44, VQFP44
TS80C52X2	8	256	32	1	3			2.7 - 5.5	40	PDIL40, PLC44, VQFP44
T83C5102	8	512	22	1	3			4.5 - 5.5	66	SOIC24, SOIC28, SSOP24, PDIL24
T83C5102	8	512	22	1	3			2.7 - 5.5	40	SOIC24, SOIC28, SSOP24, PDIL24
AT83C5103	12	512	19		2+PCA		SPI	2.7 - 5.5	16	SSOP16, SOIC24
TS80C54X2	16	256	32	1	3		WDT	4.5 - 5.5	60	PDIL40, PLC44, VQFP44
TS80C54X2	16	256	32	1	3		WDT	2.7 - 5.5	40	PDIL40, PLC44, VQFP44
TS83C51U2	16	256	32	2	3		WDT, BRG	4.5 - 5.5	60	PDIP40, PLC44, VQFP44
TS83C51U2	16	256	32	2	3		WDT, BRG	2.7 - 5.5	40	PDIP40, PLC44, VQFP44
T83C5101	16	512	22	1	3			4.5 - 5.5	66	SOIC24, SOIC28, SSOP24, PDIL24
T83C5101	16	512	22	1	3			2.7 - 5.5	40	SOIC24, SOIC28, SSOP24, PDIL24
TS83C51RB2	16	512	32	1	3+PCA		WDT	4.5 - 5.5	60	PDIP40, PLCC44, VQFP44
TS83C51RB2	16	512	32	1	3+PCA		WDT	2.7 - 5.5	40	PDIP40, PLCC44, VQFP44
T83C51RB2	16	1280	32	1	3+PCA		WDT, SPI, BRG, KBD	4.5 - 5.5	40	PDIP40, PLCC44, VQFP44
T83C51RB2	16	1280	32	1	3+PCA		WDT, SPI, BRG, KBD	2.7 - 3.6	30	PDIP40, PLCC44, VQFP44
T83C51IB2	16	1280	34	1	3+PCA		WDT, SPI, I ² C, RTC, BRG, KBD	4.5 - 5.5	40	PLCC44, VQFP44
T83C51IB2	16	1280	34	1	3+PCA		WDT, SPI, I ² C, RTC, BRG, KBD	2.7 - 3.6	30	PLCC44, VQFP44
TSC83251G1D	16	1024	32	1	3+EWC		C251 Core, SPI, I ² C	4.5 - 5.5	24	PDIL40, PLC44, VQFP44
TSC83251G1D	16	1024	32	1	3+EWC		C251 Core, SPI, I ² C	2.7 - 5.5	12	PDIL40, PLC44, VQFP44
TS80C58X2	32	256	32	1	3		WDT	4.5 - 5.5	60	PDIL40, PLC44, VQFP44
TS80C58X2	32	256	32	1	3		WDT	2.7 - 5.5	40	PDIL40, PLC44, VQFP44
TS83C51RC2	32	512	32	1	3+PCA		WDT	4.5 - 5.5	60	PDIP40, PLCC44, VQFP44
TS83C51RC2	32	512	32	1	3+PCA		WDT	2.7 - 5.5	40	PDIP40, PLCC44, VQFP44
T83C51RC2	32	1280	32	1	3+PCA		WDT, SPI, BRG, KBD	4.5 - 5.5	40	PDIP40, PLCC44, VQFP44
T83C51RC2	32	1280	32	1	3+PCA		WDT, SPI, BRG, KBD	2.7 - 3.6	30	PDIP40, PLCC44, VQFP44
T83C51C2	32	1280	34	1	3+PCA		WDT, SPI, I ² C, RTC, BRG, KBD	4.5 - 5.5	40	PLCC44, VQFP44
T83C51C2	32	1280	34	1	3+PCA		WDT, SPI, I ² C, RTC, BRG, KBD	2.7 - 3.6	30	PLCC44, VQFP44
TSC83251G2D	32	1024	32	1	3+EWC		C251 Core, SPI, I ² C	4.5 - 5.5	24	PDIL40, PLC44, VQFP44
TSC83251G2D	32	1024	32	1	3+EWC		C251 Core, SPI, I ² C	2.7 - 5.5	16	PDIL40, PLC44, VQFP44
TS83C51RD2	64	1024	32/48	1	3+PCA		WDT	4.5 - 5.5	60	PDIP40, PLCC44, VQFP44, PLCC68, VQFP64
TS83C51RD2	64	1024	32/48	1	3+PCA		WDT	2.7 - 5.5	40	PDIP40, PLCC44, VQFP44, PLCC68, VQFP64
ROMLESS										
TS80C31X2		128	32	1	2			4.5 - 5.5	60	PDIL40, PLCC44, VQFP44
TS80C31X2		128	32	1	2			2.7 - 5.5	40	PDIL40, PLCC44, VQFP44
TS80C32X2		256	32	1	3			4.5 - 5.5	60	PDIL40, PLCC44, VQFP44
TS80C32X2		256	32	1	3			2.7 - 5.5	40	PDIL40, PLCC44, VQFP44
TS80C51U2		256	32	2	3		WDT, BRG	4.5 - 5.5	60	PDIL40, PLCC44, VQFP44
TS80C51U2		256	32	2	3		WDT, BRG	2.7 - 5.5	40	PDIL40, PLCC44, VQFP44
T80C5112		256	40	1	2+PCA		WDT, SPI	4.5 - 5.5	66	LQFP48, PLCC52
T80C5112		256	40	1	2+PCA		WDT, SPI	2.7 - 5.5	40	LQFP48, PLCC52

* Check for availability

ROMLESS (continued)	Program Memory (KB)	EEPROM (KB)	RAM (Bytes)	I/O Pins	UART	Timers	Other Features	Vcc (V)	Max Speed (MHz)	Packages
TS80C51RA2	512	32	1	3+PCA			WDT	4.5 - 5.5	60	PDIL40, PLCC44, VQFP44
TS80C51RA2	512	32	1	3+PCA			WDT	2.7 - 5.5	40	PDIL40, PLCC44, VQFP44
TS80C51RD2	1024	32/48	1	3+PCA			WDT	4.5 - 5.5	60	PDIL40, PLC44, VQFP44, PLCC68, VQFP64
TS80C51RD2	1024	32/48	1	3+PCA			WDT	2.7 - 5.5	40	PDIL40, PLC44, VQFP44, PLCC68, VQFP64
TSC80251G2D	1024	32	1	3+EWC			C251 Core, SPI, I ² C, WDT	4.5 - 5.5	24	PDIL40, PLCC44, VQFP44
TSC80251G2D	1024	32	1	3+EWC			C251 Core, SPI, I ² C, WDT	2.7 - 5.5	16	PDIL40, PLCC44, VQFP44
T80C51ID2	1280	32/34	1	3+PCA			WDT, SPI, BRG, KBD	4.5 - 5.5	40	PDIL40, PLCC44, VQFP44
T80C51ID2	1280	32/34	1	3+PCA			WDT, SPI, BRG, KBD	2.7 - 3.6	20	PDIL40, PLCC44, VQFP44

ATMEL APPLICATION SPECIFIC C51

	FLASH	CRAM	ROM	Bootloader	EEPROM (KB)	RAM (Bytes)	I/O Pins	UART	Timers	Other Features	Vcc (V)	(5V/3V) Max Speed (MHz)	Packages
MP3 Decoder													
AT89C51SND1A	64			4	2304	44	1	2		MP3 Decoder, I ² C, MMC ADC, USB, SPI, I2S	2.7 - 3.6	20	TQFP80, DIE
AT83SND1Axxx			64		2304	44	1	2		MP3 Decoder, I ² C, MMC ADC, USB, SPI, I2S	2.7 - 3.6	20	TQFP80, DIE
Data Acquisition													
AT89S4D12	4				128	256	5			SPI	3.0 - 3.6	12	PLCC28, SO28, PLCC32
Card Reader													
T83C5121		16			512	14/30	1	2		ISO7816, DC/DC, WTD	2.85 - 5.5	16	SSOP24, PLCC52, LQFP48*
T85C5121		16	16		512	14/30	1	2		ISO7816, DC/DC, WTD	2.85 - 5.5	16	SSOP24, PLCC52, LQFP48*
T89C5121	16		16		512	14/30	1	2		ISO7816, DC/DC, WTD	2.85 - 5.5	16	SSOP24, LQFP48*
CAN Multiplexing													
T89C51CC02	16		2	2	512	20	1	3+PCA		A/D, CAN 4 Chan., WTD	2.7 - 5.5	40/24	SOIC24*, SOIC28 PLCC28, VQFP32
T89C51CC01	32		2	2	1280	34	1	3+PCA		A/D, CAN 15 Chan., WTD	2.7 - 5.5	40/20	VQFP44, PLCC44, CA-BGA64*

* Check for availability

A/D: Analog-to-Digital Converter, **BRG:** Baud Rate Generator, **CRAM:** Code RAM, **I²C:** Inter IC Communication, **KBD:** Keyboard, **MMC:** Multi-Media Card, **RC Osc.:** Resistor Capacity Oscillator, **RTC:** Real Time Clock, **SPI:** Serial Peripherals Interface, **USB:** Universal Serial Bus, **WDT:** Watchdog Timer.

Corporate Headquarters

2325 Orchard Parkway
San Jose, CA 95131, USA
TEL.: (1)(408) 441-0311
FAX.: (1)(408) 487-2600

Europe

Atmel Sarl
Route des Arsenaux 41
Casa Postale 80
CH-1705 Fribourg
Switzerland
TEL.: (41) 26-426-5555
FAX.: (41) 26-426-5500

Asia

Atmel Asia, Ltd.
Room 1219
Chinachem Golden Plaza
77 Mody Road Tsimshatsui
East Kowloon
Hong Kong
TEL.: (852) 2721-9778
FAX.: (852) 2722-1369

Japan

Atmel Japan K.K.
9F, Tonetsu Shinkawa Bldg.
1-24-8 Shinkawa
Chuo-ku, Tokyo 104-0033
Japan
TEL.: (81) 3-3523-3551
FAX.: (81) 3-3523-7581

Atmel Nantes

La Chantrerie
BP 70602
44306 Nantes Cedex 3
France
TEL.: (33) 2 40 18 18 18
FAX.: (33) 2 40 18 19 60

e-mail

literature@atmel.com

Web Site

http://www.atmel.com

© Atmel Corporation 2002.

Atmel Corporation makes no warranty for the use of its products, other than those expressly contained in the Company's standard warranty which is detailed in Atmel's Terms and Conditions located on the Company's web site. The Company assumes no responsibility for any errors which may appear in this document, reserves the right to change devices or specifications detailed herein at any time without notice, and does not make any commitment to update the information contained herein. No licenses to patents or other intellectual property of Atmel are granted by the Company in connection with the sale of Atmel products, expressly or by implication. Atmel's products are not authorized for use as critical components in life support devices or systems. ATMEL® is the registered trademark of Atmel. Other terms and product names may be the trademarks of others.

4001B-8051-01/02/25M