



MOTOROLA

Microcontroller Selector Guide

Quarter 3, 2000

<http://www.mcu.motsps.com>

Product information for:

8-Bit	68HC05, 68HC08, and 68HC11
16-Bit	68HC12 and 68HC16
32-Bit	683XX and M•CORE

 **Digital DNA™**
from Motorola

Think you can't afford to use on-chip FLASH memory in your next microcontroller application?

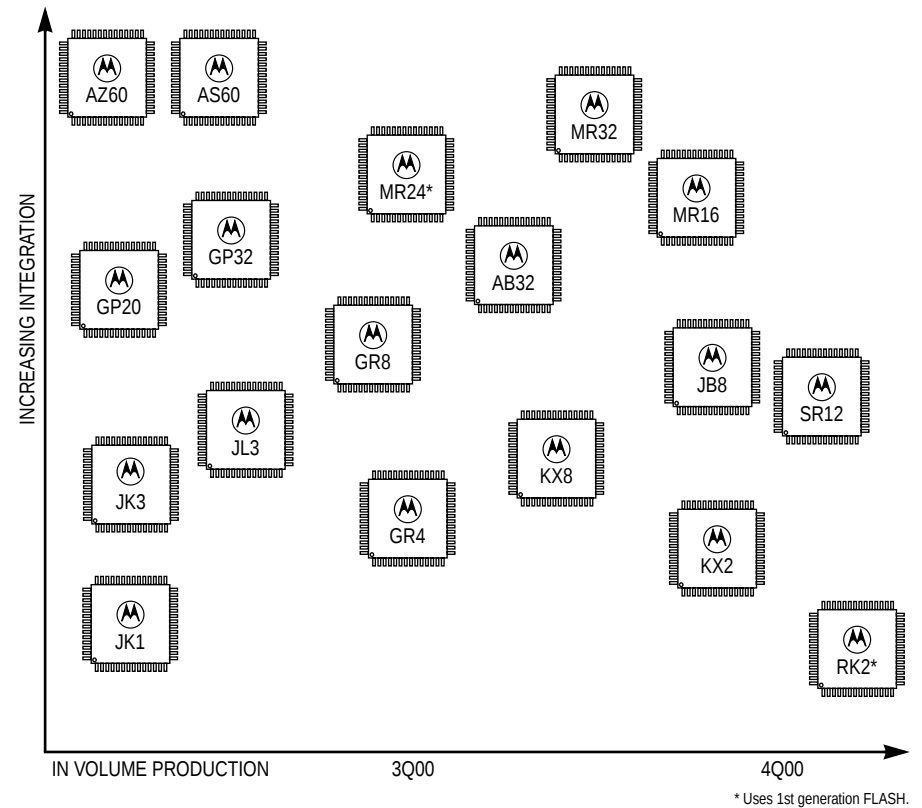
Think again.

Our revolutionary 2nd generation 8-bit FLASH provides in-application reprogramming with 10,000 write/erase cycles and programming speeds 100 times faster than most embedded FLASH — all at prices comparable to or better than industry OTPs.

To find out more about Motorola's 2nd Generation 8-bit FLASH and the 11 new FLASH 68HC908s on our 2000 roadmap, order literature number BR1819/D. Or, visit our website at <http://www.mcu.motps.com>.

- Visit <http://www.pemicro.com/ics08> for FREE windows-based development software, including simulators, assemblers, and debuggers for Motorola's HC08 Family of microcontrollers.
- Visit <http://www.mcu.motps.com> to view Motorola's offering in technical support, including development tools, documentation, new searchable FAQs, and freeware.

68HC908 FLASH Roadmap



68HC05 Family (Sheet 1 of 4)

Device	ROM (Bytes)	RAM (Bytes)	EPROM/ OTP (Bytes)	EEPROM (Bytes)	Timer	I/O	Serial	A/D	PWM	COP	Operating Voltage (V)	Max Bus Frequency (MHz)	Temp.	Package Option	OTP	Avail.	Comments	Documentation
MC68HC05B6	6K	176	—	256	16-Bit 2 IC, 2 OC	32	SCI See comment	8-CH 8-Bit	2-CH 8-Bit	Y	3.3, 5.0	4.0	C, V, M	56 SDIP (B) 52 PLCC (FN) 64 QFP (FU)	705B16 705B32	Now	SCI has synchronous master SPI-like capability	MC68HC05B6/D
MC68HC05B8	7K	176	—	256	16-Bit 2 IC, 2 OC	32	SCI See comment	8-CH 8-Bit	2-CH 8-Bit	Y	3.3, 5.0	4.0	C, V	56 SDIP (B) 52 PLCC (FN) 64 QFP (FU)	705B16 705B32	Now	SCI has synchronous master SPI-like capability	MC68HC05B6/D
MC68HC05B16	15K	352	—	256	16-Bit 2 IC, 2 OC	32	SCI See comment	8-CH 8-Bit	2-CH 8-Bit	Y	3.3, 5.0	4.0	C, V, M	56 SDIP (B) 52 PLCC (FN) 64 QFP (FU)	705B16 705B32	Now	SCI has synchronous master SPI-like capability	MC68HC05B6/D
MC68HC705B16	—	352	15K	256	16-Bit 2 IC, 2 OC	32	SCI See comment	8-CH 8-Bit	2-CH 8-Bit	Y	3.3, 5.0	2.1	C, V, M	52 PLCC (FN) 64 QFP (FU) 52 CLCC (FS)	—	Now	705B32 as OTP for SDIP. SCI has synchronous master SPI-like capability	MC68HC05B6/D
MC68HC05B32	32K	528	—	256	16-Bit 2 IC, 2 OC	32	SCI See comment	8-CH 8-Bit	2-CH 8-Bit	Y	3.3, 5.0	2.1	See comments	56 SDIP (B) 52 PLCC (FN) 64 QFP (FU)	705B32	Now	SCI has synchronous master SPI-like capability. 0 to 70 °C temperature only for SDIP; –40 to +85 °C for PLCC/QFP	MC68HC05B6/D
XC68HC705B32	—	528	32K	256	16-Bit 2 IC, 2 OC	32	SCI See comment	8-CH 8-Bit	2-CH 8-Bit	Y	3.3, 5.0	2.1	C	56 SDIP (B) 52 PLCC (FN) 64 QFP (FU) 52 CLCC (FS)	—	LTD	SCI has synchronous master SPI-like capability	MC68HC05B6/D
MC68HC705BD3	—	256	7.75K	—	MFT	24	I ² C	—	16-CH 8-Bit	Y	5.0	2.1	—	40 DIP (P) 42 SDIP (B)	—	Now	Horizontal & vertical sync signal processor	MC68HC05BD3D/H
MC68HC05BD5	7.75K	256	—	—	MFT	24	I ² C	—	16-CH 8-Bit	Y	5.0	2.1	—	40 DIP (P) 42 SDIP (B)	705BD3	Now	Horizontal & vertical sync signal processor	MC68HC05BD3D/H
MC68HC705BD7	—	384	11.5K	—	MFT	26	MBUS (DDC 1/2 B)	4-CH 8-Bit	16-CH 8-Bit	Y	5.0	2.1	—	40 DIP (P) 42 SDIP (B)	—	Now	Enhanced sync processor plus VESA DDC block	HC705BD7GRS/H
MC68HC05C8A	8K	176	—	—	16-Bit 1 IC, 1 OC	31	SCI SPI	—	—	Y	3.3, 5.0	4.0	C, V, M	40 DIP (P) 42 SDIP (B) 44 PLCC (FN) 44 QFP (FB)	705C8A	Now	KBI (8 pins), 1 high-current pin (20 mA)	HC05C8AGRS/D
MC68HC705C8A	—	304	8K	—	16-Bit 1 IC, 1 OC	31	SCI SPI	—	—	Y	3.3, 5.0	4.0	C, V, M	40 DIP (P) 40 CDIP (S) 42 SDIP (B) 44 PLCC (FN) 44 QFP (FB) 44 CLCC (FS)	—	Now	KBI (8 pins), 1 high-current pin (20 mA), high-speed option (4-MHz bus) available as MC68HSC705C8A	MC68HC705C8A/D
MC68HC05C9A	16K	352	—	—	16-Bit IC, 1 OC	31	SCI SPI	—	—	Y	3.3, 5.0	4.0	C, V, M	40 DIP (P) 42 SDIP (B) 44 PLCC (FN) 44 QFP (FB)	705C9A	Now	KBI (8 pins), 1 high-current pin (20 mA)	HC05C9AGRS/D
MC68HC705C9A	—	352	16K	—	16-Bit 1 IC, 1 OC	31	SCI SPI	—	—	Y	3.3, 5.0	2.1	C	40 DIP (P) 40 CDIP (S) 42 SDIP (B) 44 PLCC (FN) 44 CLCC (FS) 44 QFP (FB)	—	Now	KBI (8 pins), 1 high-current pin (20 mA)	HC705C9AGRS/D
MC68HC05D32	32K	352	—	—	16-Bit 1 IC, 1 OC	31	SCI	—	5-CH 6-Bit	Y	3.3, 5.0	2.1	C	40 DIP (P) 44 PLCC (FN)	705D32A	Now	24 mA port driver	MC68HC05D9/D

68HC05 Family

68HC05 Family (Sheet 2 of 4)

Device	ROM (Bytes)	RAM (Bytes)	EPROM/ OTP (Bytes)	EEPROM (Bytes)	Timer	I/O	Serial	A/D	PWM	COP	Operating Voltage (V)	Max Bus Frequency (MHz)	Temp.	Package Option	OTP	Avail.	Comments	Documentation
XC68HC705F32	—	920	32K	256	16-Bit 4 IC, 4 OC, MFT, RTI	Up to 80	SCI SPI	8-CH 8-Bit	3-CH 8-Bit	Y	3.0, 5.0	2.1	—	100 LQFP (PU) 80 QFP (FU)	—	Now	DTMF, LCD (4 x 40), KBI (8 pins)	MC68HC05F32/D
MC68HC05J1A	1.2K	64	—	—	MFT, RTI	14	—	—	—	Y	2.0, 3.3, 5.0	4.0	C, V	20 DIP (P) 20 SOIC (DW)	705J1A	Now	KBI (4 pins), mask selectable pulldowns, 4 high-current pins (8 mA)	MC68HC05J1A/D MC68HC05J1AAD/D
MC68HC705J1A	—	64	1.2K	—	MFT, RTI	14	—	—	—	Y	3.3, 5.0	4.0	C, V	20 DIP (P) 20 CDIP (S) 20 SOIC (DW) 20 SSOP (SD)	—	Now	KBI (4 pins), programmable pulldowns, 4 high-current pins (8 mA), RC option available as MC68HRC705J1A, high- speed option available as MC68HSC705J1A	MC68HC705J1A/D
MC68HC05J5A	2.5K	128	—	—	16-Bit 1 IC, MFT, RTI	14	—	—	—	Y	2.2, 5.0	2.1	—	20 DIP (P) 20 SOIC (DW) 16 DIP (JP) 16 SOIC (JDW)	705J5A	Now	2 high-current pins (25mA), LVR, RC option available	HC05J5AGRS/H
MC68HC705J5A	—	128	2.5K	—	16-Bit 1 IC, MFT, RTI	14	—	—	—	Y	5.0	2.1	—	20 DIP (P) 20 SOIC (DW) 16 DIP (JP)	—	Q2 '99	2 high-current pins (25mA), LVR, RC option available	HC05J5AGRS/H
MC68HC05JB3	2.5K	144	—	—	16-Bit 1 IC, 1 OC, MFT, RTI	19	USB	—	—	Y	5.0	3.0	—	20 DIP (JP) 20 SOIC (JDW) 28 DIP (P) 28 SOIC (DW)	705JB3	Q2 '99	1.5 mbs USB with 3 end- points, low-voltage reset, keyboard interrupt, 3.3 V bandgap reference	HC05JB3GRS/H
XC68HC705JB3	—	144	2.5K	—	16-Bit 1 IC, 1 OC, MFT, RTI	19	USB	—	—	Y	5.0	3.0	0–40 °C only	20 DIP (JP) 28 DIP (P) 28 SOIC (DW)	—	Q2 '99	1.5 mbs USB with 3 end- points, low-voltage reset, keyboard interrupt, 3.3 V bandgap reference	HC05JB3GRS/H
MC68HC05JB4	3.5K	176	—	—	16-Bit 1 IC, 1 OC, MFT, RTI	19	USB	6-CH 8-Bit	—	Y	5.0	3.0	—	28 DIP (P) 28 SOIC (DW)	705JB4	Now	1.5 mbs USB with 3 end- points, low-voltage reset, keyboard interrupt, 3.3 V bandgap reference	HC05JB4GRS/H
MC68HC705JB4	—	176	3.5K	—	16-Bit 1 IC, 1 OC, MFT, RTI	19	USB	6-CH 8-Bit	—	Y	5.0	3.0	0–40 °C only	28 DIP (P) 28 SOIC (DW) 28 CDIP (S)	—	Now	1.5 mbs USB with 3 end- points, low-voltage reset, keyboard interrupt, 3.3 V bandgap reference	HC05JB4GRS/H
MC68HC05JJ6	6K	224	—	—	16-Bit 1 IC, 1 OC, MFT, RTI	14	SIOP	4-CH 12-Bit	—	Y	3.3, 5.0	2.1	C	20 DIP (P) 20 SOIC (DW)	705JJ7	Now	2 voltage comparators used as single slope A/D, KBI (8 pins), 6 high-current pins (10 mA), mask selectable pulldowns, LVR	HC05JJ6GRS/D
XC68HC705JJ7	—	224	6K+ 64 Bit PEP	—	16-Bit 1 IC, 1 OC, MFT, RT	14	SIOP	4-CH 12-Bit	—	Y	3.3, 5.0	2.1	C	20 DIP (P) 20 SOIC (DW) 20 CDIP (S)	—	Now	2 voltage comparators used as single slope A/D, KBI (8 pins), 6 high-current pins (10 mA), programmable pulldowns, LVR	HC705JJ7GRS/D
MC68HC05JP6	6K	224	—	—	16-Bit 1 IC, 1 OC, MFT, RT	22	SIOP	4-CH 12-Bit	—	Y	3.3, 5.0	2.1	C	28 DIP (P) 28 SOIC (DW)	705JP7	Now	2 voltage comparators used as single slope A/D, KBI (8 pins), 6 high-current pins (10 mA), mask selectable pulldowns, LVR	HC05JJ6GRS/D

68HC05 Family (Sheet 3 of 4)

Device	ROM (Bytes)	RAM (Bytes)	EPROM/OTP (Bytes)	EEPROM (Bytes)	Timer	I/O	Serial	A/D	PWM	COP	Operating Voltage (V)	Max Bus Frequency (MHz)	Temp.	Package Option	OTP	Avail.	Comments	Documentation
XC68HC705JP7	—	224	6K + 64 Bit PEP	—	16-Bit 1 IC, 1 OC, MFT, RTI	22	SIOP	4-CH 12-Bit	—	Y	3.3, 5.0	2.1	C	28 DIP (P) 28 SOIC (DW) 28 CDIP (S)	—	Now	2 voltage comparators used as single slope A/D, KBI (8 pins), 6 high-current pins (10 mA), programmable pulldowns, LVR	HC705JJ7GRS/D
MC68HC05K3	0.9K	64	—	16 PEEP	MFT, RTI	10	—	—	—	Y	3.3, 5.0	2.1	C	16 DIP (P) 16 SOIC (DW) 20 SSOP (SD)	805K3	Now	Personality EEPROM, RTI, KBI	MC68HC05K3/D
XC68HC805K3	—	64	—	920 + 16 PEEP	MFT, RTI	10	—	—	—	Y	3.3, 5.0	2.1	C	16 DIP (P) 16 SOIC (DW)	—	Now	KBI, programmable pull-downs, 4 high-current pins	HC805K3GRS/D
MC68HC705KJ1	—	64	1.2K	—	MFT, RTI	10	—	—	—	Y	3.3, 5.0	4.0	C	16 DIP (P) 16 SOIC (DW) 16 CDIP (S)	—	Now	KBI (4 pins), programmable pulldowns (10 pins), 4 high-current pins (10 mA). RC option available as MC68HRC705KJ1. High-speed standard. 32 kHz low-power version available as MC68HLC705KJ1.	MC68HC705KJ1/D
MC68HC05L5	8K	256	—	—	16-Bit 1 IC, 1 OC, 8-Bit 1 IC, 1 OC, RTI	39	SIOP	—	—	—	3.3, 5.0	2.1	C	80 QFP (FU)	705L16	Now	LCD with 4x39 segments, KBI (8 pins), dual oscillators, 8 high-current pins, programmable pullups, open drain	HC05L5GRS/D
MC68HC05L16	16K	512	—	—	16-Bit 1 IC, 1 OC, 8-Bit 1 IC, 1 OC, RTI	39	SIOP	—	—	—	2.2, 3.3, 5.0	2.1	C	80 QFP (FU)	705L16	Now	LCD with 4x39 segments, KBI (8 pins), dual oscillators, 8 high-current pins, programmable pullups, open drain	HC05L16GRS/D
MC68HC705L16	—	512	16K	—	16-Bit 1 IC, 1 OC, 8-Bit 1 IC, 1 OC, RTI	39	SIOP	—	—	—	3.3, 5.0	2.1	C	80 QFP (FU)	—	Now	LCD with 4x39 segments, KBI (8 pins), dual oscillators, 8 high-current pins, programmable pullups, open drain	HC05L16GRS/D
MC68HC05L25	6K	176	—	—	16-Bit Event, Timebase	20	SPI	2-CH 8-Bit	—	Y	3.3, 5.0	2.1	C	52 LQFP (FU)	705L26	Now	24x4 or 25x3 LCD	HC05L25GRS/D
MC68HC05LJ5	1.2K	64	—	—	MFT, RTI	14	—	—	—	Y	5.0	2.1	—	16 DIP (P)	705J5A	Q2 '99	RC option available	HC05LJ5GRS/H
MC68HC05P4A	4K	176	—	—	16-Bit 1 IC, 1 OC	21	SIOP	—	—	Y	3.3, 5.0	2.1	C, V	28 DIP (P) 28 SOIC (DW)	705P6A	Now	Keyboard interrupt, 2 high-current pins. Not recommended for electrically noisy environments, EMC sensitive. HALT mode not available.	HC05P4AGRS/D
MC68HC05P6	4.5K	176	—	—	16-Bit 1 IC, 1 OC	21	SIOP	4-CH 8-Bit	—	Y	3.3, 5.0	2.1	C, V, M	28 DIP (P) 28 SOIC (DW)	705P6A	Now		MC68HC05P6/D MC68HC05P6AD/D
MC68HC705P6A	—	176	4.5K	—	16-Bit 1 IC, 1 OC	21	SIOP	4-CH 8-Bit	—	Y	3.3, 5.0	2.1	C	28 DIP (P) 28 SOIC (DW) 28 CDIP (S) 28 SSOP (SD)	—	Now	KBI (8 pins), 2 high-current pins (15 mA). Umbrella OTP for P1A, P4A, P6, and P9A	HC705P6AGRS/D
MC68HC05PL4/B	4K	256	—	—	16-Bit 1 IC, 1 OC, 8-Bit	23	—	—	—	Y	2.0, 4.0	2.5	—	28 DIP (P) 28 SOIC (DW)	705PL4/B	Now	DTMF, 6-bit D/A (true D/A not PWM) RC option, KBI	HC05PL4GRS/H

68HC05 Family

68HC05 Family (Sheet 4 of 4)

Device	ROM (Bytes)	RAM (Bytes)	EPROM/OTP (Bytes)	EEPROM (Bytes)	Timer	I/O	Serial	A/D	PWM	COP	Operating Voltage (V)	Max Bus Frequency (MHz)	Temp.	Package Option	OTP	Avail.	Comments	Documentation
MC68HC705PL4/B	—	256	4K	—	16-Bit 1 IC, 1 OC, 8-Bit	23	—	—	—	Y	4.0	2.5	—	28 DIP (P) 28 SOIC (DW) 28 CDIP (S)	—	LTD	DTMF, 6-bit D/A (true D/A not PWM) RC option, KBI	HC05PL4GRS/H
MC68HC05RC9	8K	352	—	—	I. R. Timer	20	—	—	—	Y	2.2, 5.0	2.1	—	28 DIP (P) 28 SOIC (DW) 44 PLCC (FN)	705RC16	Now	Special timer for remote control, supports PLM, FSK protocol. 705RC16 has different pullups	HC05RC18GRS/D
MC68HC05RC18	16K	352	—	—	I. R. Timer	20	—	—	—	Y	2.2, 5.0	2.1	—	28 DIP (P) 28 SOIC (DW) 44 PLCC (FN)	705RC16	Now	Special timer for remote control, supports PLM, FSK protocol. 705RC16 has different pullups	HC05RC18GRS/D
XC68HC705RC16	—	350	16K	—	I. R. Timer	20	—	—	—	Y	3.3, 5.0	2.1	—	28 DIP (P) 28 SOIC (DW)	—	Now	Special timer for remote control, supports PLM, FSK protocol. 705RC16 has different pullups than 05RC9/18	HC705RC16GRS/D
MC68HC05SR3	3.75K	192	—	—	8-Bit	32	—	4-CH 8-Bit	—	—	3.3, 5.0	2.1	—	40 DIP (P) 44 QFP (FB) 42 SDIP (B)	705SR3	Now	LED drive, LVR, KBI	MC68HC05SR3D/H
MC68HC705SR3	—	192	3.75K	—	8-Bit	32	—	4-CH 8-Bit	—	—	3.3, 5.0	2.1	—	40 DIP (P) 40 CDIP (S) 44 QFP (FB) 42 SDIP (B)	—	Now	LED drive, KBI, LVR. OTP For Both HC05SU3A & HC05SR3	MC68HC05SR3D/H
MC68HC05SU3A	3.75K	192	—	—	8-Bit	32	—	—	—	—	5.0	2.1	—	40 DIP (P)	705SR3	Now	Keyboard interrupt LED drive	MC68HC05SU3A/H
MC68HC05X4	4K	176	—	—	16-Bit 1 IC, 1 OC, MFT, RTI	16	CAN	—	—	Y	5.0	2.1	C	28 SOIC (DW)	705X4 (limited)	Now	CAN 2.0A (not B)	MC68HC05X4/D
MC68HC05X32	32K	528	—	256	16-Bit 2 IC, 2 OC	32	SCI CAN	8-CH 8-Bit	2-CH 8-Bit	Y	5.0	2.1	C, M	64 QFP (FU)	705X32	Now	4 MHz bus speed available	MC68HC05X16/D
MC68HC705X32	—	528	32K	256	16-Bit 2 IC, 2 OC	32	SCI CAN	8-CH 8-Bit	2-CH 8-Bit	Y	5.0	4.0	C, V, M	64 QFP (FU)	—	Now	CAN 2.0A (not B)	MC68HC05X16/D

68HC05 Reference Manuals

M68HC05AG/AD

Applications Guide

M68HC05TB/D

Understanding Small Microcontrollers Text Book

68HC08 Family

Device	ROM (Bytes)	RAM (Bytes)	FLASH or OTP (Bytes)	EEPROM (Bytes)	Timer	I/O	Serial	A/D	PWM	COP	Operating Voltage (V)	Max. Bus Freq. (MHz)	Temp.	Package Option	OTP or FLASH	Avail.	Comments	Documentation
MC68HC908AS60	—	2K	60K FLASH	1K	6-CH + 2-CH 16-Bit IC, OC, or PWM	45/50	SCI SPI	15-CH 8-Bit	See Timer	Y	5.0	8.0	C, V, M	52 PLCC (FN) 64 QFP (FU)	—	Now	J1850 (BLDC-D) controller	MC68HC908AS60/D
XC68HC08AZ0	—	1K	—	512	4-CH + 2-CH 16-Bit IC, OC, or PWM	48	SCI SPI	8-CH 8-Bit	See Timer	Y	5.0	8.0	C	100 LQFP (PU)	—	LTD	CAN 2.0A & 2.0B, external address/data bus, chip selects	HC08AZ32TS/D
XC68HC08AZ32	32K	1K	—	512	4-CH + 2-CH 16-Bit IC, OC, or PWM	48	SCI SPI	8-CH 8-Bit	See Timer	Y	5.0	8.0	—	64 QFP (FU)	908AZ60 (limited)	LTD	CAN 2.0A & 2.0B	HC08AZ32TS/D
MC68HC908AZ60	—	2K	60K FLASH	1K	6-CH + 2-CH 16-Bit IC, OC, or PWM	48	SCI SPI	15-CH 8-Bit	See Timer	Y	5.0	8.0	C, V, M	64 QFP (FU)	—	Now	CAN 2.0A & 2.0B	HC908AZ60GRS/D
MC68HC908GP32	—	512	32K FLASH	—	Dual 2-CH 16-Bit IC, OC, or PWM	33	SCI SPI	8-CH 8-Bit	See Timer	Y	3.0, 5.0	8.0	C	40 DIP (P) 44 QFP (FB) 42 SDIP (B)	—	Now	32 kHz PLL, timebase module, low-voltage inhibit with selectable trip points Sample pack part numbers: KMC908GP32CFB, KMC908GP32CP	MC68HC908GP32/H
MC68HC908JL3	—	128	4K FLASH	—	2-CH 16-Bit IC, OC, or PWM	23	—	12-CH 8-Bit	See Timer	Y	3.0, 5.0	8.0	C, M	28 DIP (P) 28 SOIC (DW)	—	Now	RC oscillator option, LVR with selectable trip points, 6 pin LED drive Sample pack part numbers: KMC908JL3CP, KMC908JL3CDW, KMCR908JL3CP, KMCR908JL3CDW	MC68HC908JL3/H
MC68HC908JK1	—	128	1.5 K FLASH	—	2-CH 16-Bit IC, OC, or PWM	15	—	10-CH 8-Bit	See Timer	Y	3.0, 5.0	8.0	C	20 DIP (P) 20 SOIC (DW)	—	Now	RC oscillator option, LVR with selectable trip points, 6 pin LED drive	MC68HC908JL3/H
MC68HC908JK3	—	128	4K FLASH	—	2-CH 16-Bit IC, OC, or PWM	15	—	10-CH 8-Bit	See Timer	Y	3.0, 5.0	8.0	C, M	20 DIP (P) 20 SOIC (DW)	—	Now	RC oscillator option, LVR with selectable trip points, 6 pin LED drive Sample pack part numbers: KMC908JK3CP, KMC908JK3CDW, KMCR908JK3CP, KMCR908JK3CDW	MC68HC908JL3/H
XC68HC08LN56	56K	1280 + 160 LCD	—	—	4-CH 16-Bit IC, OC, or PWM	42	SCI SPI	4-CH 8-Bit	See Timer	Y	3.3, 5.0	8.0	—	144 LQFP (PV)	708LN56 (limited)	LTD	LCD 40 x 32, LVR, 32kHz PLL, timebase module	HC08LN56GRS/D
XC68HC708MP16	—	512	16K OTP	—	4-CH + 2-CH 16-Bit IC, OC, or PWM	44	SCI SPI	10-CH 8-Bit	See Timer + 6-CH 12-Bit	Y	5.0	8.0	C, V, M	64 QFP (FU)	—	See comments	Limited availability. Will be replaced by 68HC908MR24	HC708MP16GRS/D
XC68HC908MR24	—	768	24K FLASH	—	4-CH + 2-CH 16-Bit IC, OC, or PWM	44	SCI SPI	10-CH 10 Bit	See Timer + 6-CH 12-Bit	Y	5.0	8.0	C, V	64 QFP (FU)	—	LTD	PWM for 3 phase motor control. Will replace 68HC708MP16.	HC908MR24GRS/D

68HC08 Reference Manuals

CPU08RM/AD
TIM08RM/AD

CPU Reference Manual
Timer Reference Manual

68HC11 Family (Sheet 1 of 2)

Device	ROM (Bytes)	RAM (Bytes)	EPROM/ OTP (Bytes)	EEPROM (Bytes)	Timer ¹	I/O S.C.	I/O EXP	Serial	A/D	PWM	Operating Voltage (V)	Max Bus Frequency (MHz)	Temp.	Package Options	OTP	Avail.	Comments	Documentation
MC68HC11D0	—	192	—	—	16-Bit, 3/4IC, 4/5OC, RTI, pulse accumulator	—	16	SCI SPI	—	—	3.0, 5.0	3	C, V, M	40 PDIP (P) 44 QFP (FB) 44 PLCC (FN)	711D3	Now	64K external address bus, 3V 2MHz version (MC68L11D0)	MC68HC11D3/D
MC68HC11D3	4K	192	—	—	16-Bit, 3/4IC, 4/5OC, RTI, pulse accumulator	32	16	SCI SPI	—	—	3.0, 5.0	3	C, V, M	40 PDIP (P) 44 QFP (FB) 44 PLCC (FN)	711D3	Now	64K external address bus, 3V 2MHz version (MC68L11D3)	MC68HC11D3/D
MC68HC711D3	—	192	4K	—	16-Bit, 3/4IC, 4/5OC, RTI, pulse accumulator	32	16	SCI SPI	—	—	5	3	C, V, M	40 PDIP (P) 44 QFP (FB) 44 PLCC (FN) 44 CLCC (FS) 40 CDIP (S)	—	Now	64K external address bus, 3MHz available in C temperature range only	MC68HC711D3/D
MC68HC11E0	—	512	—	—	16-Bit, 3/4IC, 4/5OC, RTI, pulse accumulator	—	22	SCI SPI	8-CH 8-Bit	—	3.0, 5.0	3	C, V, M	52 PLCC (FN) 64 QFP (FU) 52 LQFP (PB) 48 DIP (P)	711E9	Now	3V 2MHz version (MC68L11E0)	MC68HC11E/D
MC68HC11E1	—	512	—	512	16-Bit, 3/4IC, 4/5OC, RTI, pulse accumulator	—	22	SCI SPI	8-CH 8-Bit	—	3.0, 5.0	3	C, V, M	52 PLCC (FN) 64 QFP (FU) 52 LQFP (PB) 48 DIP (P)	711E9	Now	3V 2MHz version (MC68L11E1)	MC68HC11E/D
MC68HC811E2	—	256	—	2048	16-Bit, 3IC, 4OC, RTI, pulse accumulator	38	22	SCI SPI	8-CH 8-Bit	—	5	2	C, V, M	52 PLCC (FN) 48 DIP (P)	—	Now	Secure device available (MC68SEC811E2FN), EEPROM block protect	MC68HC11E/D
MC68HC11E20	20K	768	—	512	16-Bit, 3/4IC, 4/5OC, RTI, pulse accumulator	38	22	SCI SPI	8-CH 8-Bit	—	5	3	C, V, M	52 PLCC (FN) 64 QFP (FU)	711E20	Now	Enhanced baud rate for 3MHz operation	MC68HC11E/D
MC68HC711E20	—	768	20K	512	16-Bit, 3/4IC, 4/5OC, RTI, pulse accumulator	38	22	SCI SPI	8-CH 8-Bit	—	5	4	C, V, M	52 PLCC (FN) 52 CLCC (FS) 64 QFP (FU)	—	Now	Enhanced baud rate for 3MHz operation.	MC68HC11E/D
MC68HC11E9	12K	512	—	512	16-Bit, 3/4IC, 4/5OC, RTI, pulse accumulator	38	22	SCI SPI	8-CH 8-Bit	—	3.0, 5.0	3	C, V, M	52 PLCC (FN) 64 QFP (FU) 52 LQFP (FB) 48 DIP (P)	711E9	Now	3V 2MHz version (MC68L11E9).	MC68HC11E/D
MC68HC711E9	—	512	12K	512	16-Bit, 3/4IC, 4/5OC, RTI, pulse accumulator	38	22	SCI SPI	8-CH 8-Bit	—	5.0	3	C, V, M	52 PLCC (FN) 52 CLCC (FS) 64 QFP (FU)	—	Now	EEPROM block protect Secure version (MC68S711E9).	MC68HC11E/D
MC68HC11F1	—	1K	—	512	16-Bit, 3/4IC, 4/5OC, RTI, pulse accumulator	—	30	SCI SPI	8-CH 8-Bit	—	3.0, 5.0	5	C, V, M	68 PLCC (FN) 80 LQFP (PU)	—	Now	64K ext.addr.bus, 4 prog.chip sel, Non-mux address/data bus, 3V 3MHz version (MC68L11F1)	MC68HC11F1/D

1. All 68HC11 MCUs incorporate a COP watchdog timer

68HC11 Family (Sheet 2 of 2)

Device	ROM (Bytes)	RAM (Bytes)	EPROM/ OTP (Bytes)	EEPROM (Bytes)	Timer ¹	I/O S.C.	I/O EXP	Serial	A/D	PWM	Operating Voltage (V)	Max Bus Frequency (MHz)	Temp.	Package Options	OTP	Avail.	Comments	Documentation
MC68HC11K0	—	768	—	—	16-Bit, 3/4IC, 4/5OC, RTI, pulse accumulator	—	37	SCI+ SPI	8-CH 8-Bit	4-CH 8-Bit or 2-CH 16-Bit	3.0, 5.0	2, 3, 4, 5	C, V, M	84 PLCC (FN) 80 QFP (FU)	—	Now	Non-mux bus, extended memory map, 4 chip selects, 3V 3MHz version (MC68L11K0)	MC68HC11K4/D
MC68HC11K1	—	768	—	640	16-Bit, 3/4IC, 4/5OC, RTI, pulse accumulator	—	37	SCI+ SPI	8-CH 8-Bit	4-CH 8-Bit or 2-CH 16-Bit	3.0, 5.0	5	C, V, M	84 PLCC (FN) 80 QFP (FU)	—	Now	Non-mux bus, extended memory map, 4 chip selects, 3V 3MHz version (MC68L11K1)	MC68HC11K4/D
MC68HC11K4	24K	768	—	640	16-Bit, 3/4IC, 4/5OC, RTI, pulse accumulator	62	37	SCI+ SPI	8-CH 8-Bit	4-CH 8-Bit or 2-CH 16-Bit	3.0, 5.0	5	C, V, M	84 PLCC (FN) 80 QFP (FU)	711K4 (limited)	Now	Non-mux bus, extended memory map, 4 chip selects, 3V 3MHz version (MC68L11K4)	MC68HC11K4/D
MC68HC11KS2	32K	1K	—	640	16-Bit, 3/4IC, 4/5OC, RTI, pulse accumulator	51	26	SCI+ SPI	8-CH 8-Bit	4-CH 8-Bit or 2-CH 16-Bit	5	4	C, V, M	68 PLCC (FN) 80 LQFP (PU)	711KS2	Now	4MHz non-mux bus, slow mode feature, security option available	MC68HC11K/D
MC68HC711KS2	—	1K	32K	640	16-Bit, 3/4IC, 4/5OC, RTI, pulse accumulator	51	26	SCI+ SPI	8-CH 8-Bit	4-CH 8-Bit or 2-CH 16-Bit	5	4	C, V, M	68 PLCC (FN) 80 LQFP (PU) 68 CLCC (FS)	—	Now	4MHz non-mux bus, slow mode feature, security option available	MC68HC11K/D
MC68HC11KW1	—	768	—	640	16-Bit, 3/4IC, 4/5OC, RTI, pulse accumulator	—	55	SCI+ SPI	10-CH 10-Bit	4-CH 8-Bit or 2-CH 16-Bit	5	4	C	100 LQFP (PU)	—	Now	4MHz non-mux bus, 2 extra timers, 4 chip selects extended, memory map up to 1Mbyte	MC68HC11KW1/D
MC68HC11P1	—	1K	—	640	16-Bit, 3/4IC, 4/5OC, RTI, pulse accumulator	62	37	Triple SCI SPI	8-CH 8-Bit	4-CH 8-Bit or 2-CH 16-Bit	5	4	C	84 PLCC (FN)	711P2 (limited)	Now	64K external address bus, MI-bus interface, PLL clock circuitry	MC68HC11P2/D
MC68HC11P2	32K	1K	—	640	16-Bit, 3/4IC, 4/5OC, RTI, pulse accumulator	62	37	Triple SCI SPI	8-CH 8-Bit	4-CH 8-Bit or 2-CH 16-Bit	5	4	C	84 PLCC (FN)	711P2 (limited)	Now	64K external address bus, MI-bus interface, PLL clock circuitry	MC68HC11P2/D

1. All 68HC11 MCUs incorporate a COP watchdog timer

68HC11 Reference Manual

68HC11 Reference Manual

M68HC11RM/AD

68HC12 Family

68HC12 Family

Device	ROM (Bytes)	RAM (Bytes)	EEPROM (Bytes)	FLASH (Bytes)	Timer ¹	I/O	Serial	A/D	PWM	Operating Voltage (V)	Max Bus Frequency (MHz)	Temp.	Package Options	Avail.	Comments	Documentation
XC68HC12A0	—	1K	—	—	8-CH 16-Bit IC or OC RTI, pulse accumulator	Up to 61	Dual SCI SPI	8-CH 8-Bit	—	3.3, 5	8	C	112 LQFP (PV)	Now	Same as 68HC812A4 without EEPROM. Non-muxed bus, 7 programmable chip selects, KBI (24 pins), PLL, BDM, 5Mbyte external memory, 3.0–3.6V 5MHz version (XC68C12A0)	MC68HC812A4/D
XC68HC812A4	—	1K	4K	—	8-CH 16-Bit IC or OC RTI, pulse accumulator	Up to 91	Dual SCI SPI	8-CH 8-Bit	—	3.3, 5	8 5	C	112 LQFP (PV)	Now	Non-muxed bus, 7 programmable chip selects, KBI (24 pins), PLL, BDM, 5Mbyte external memory, 3.0–3.6V 5MHz version (XC68C812A4).	MC68HC812A4/D
XC68HC912B32	—	1K	768	32K	8-CH 16-Bit IC or OC RTI, pulse accumulator	Up to 63	SCI, SPI J1850	8-CH 10-Bit	4-CH 8-Bit or 2-CH 16-Bit	5	8	C	80 QFP (FU)	Now	J1850, muxed bus, BDM	MC68HC912B32/D
PC68HC912BC32	—	1K	768	32K	8-CH 16-Bit IC or OC RTI, pulse accumulator	Up to 63	SCI, SPI CAN	8-CH 10-Bit	4-CH 8-Bit or 2-CH 16-Bit	5	8	C	80 QFP (FU)	LTD	MSCAN CAN 2.0A and 2.0B, BDM	MC68HC912BC32TS/D
XC68HC12BE32	32K	1K	768	—	8-CH 16-Bit IC or OC RTI, pulse accumulator	Up to 63	SCI, SPI J1850	8-CH 10-Bit	4-CH 8-Bit or 2-CH 16-Bit	5	8	C	80 QFP (FU)	Now	BDM, enhanced timer	MC68HC912B32/D
XC68HC912D60	—	2K	1K	60K	8-CH 16-Bit IC or OC RTI, pulse accumulator	Up to 68 i/o and 18 i	Dual SCI SPI, CAN	8-CH or 16-CH 10-Bit	4-CH 8-Bit or 2-CH 16-Bit	5	8	C, V, M	80 QFP (FU) 112 LQFP (PV)	Now	BDM, enhanced timer, PLL. Sample pack: KXC912D60CFU8 (QFP) KXC912D60CPU8 (LQFP)	MC68HC912D60/D
XC68HC912DG128	—	8K	2K	128K	8-CH 16-Bit IC or OC RTI, pulse accumulator	Up to 68 i/o and 18 i	Dual SCI SPI, CAN	8-CH or 16-CH 10-Bit	4-CH 8-Bit or 2-CH 16-Bit	5	8	C, V, M	112 LQFP (PV)	Now	BDM, enhanced timer, PLL. Sample pack: KXC912DG128CPU8 (LQFP)	MC68HC912DG128/D

1. All 68HC12 MCUs incorporate a COP watchdog timer

68HC12 Reference Manual

68HC12 Reference Manual CPU12RM/AD

68HC16 Family

Device	ROM (Bytes)	RAM (Bytes)	FLASH (Bytes)	Device Integration	Timer	Serial	Analog	Operating Voltage (V)	Operating Frequency (MHz)	Temp.	Package Options	FLASH	Avail.	Comments	Documentation
MC68HC16R1	48K	2K	—	SCIM2	CTM7	Dual SCI, SPI	8-CH 10-Bit	5.0	16	C,V,M	132 PQFP(FC)	HC916R1	Now		MC68HC16R1PP/D (MC68HC16R1/916R1UM/AD on web only)
MC68HC916R1	—	2K	48K+2K	SCIM2	CTM7	Dual SCI, SPI	8-CH 10-Bit	5.0	16	C	132 PQFP(FC)	—	Now		MC68HC16R1PP/D (MC68HC16R1/916R1UM/AD on web only)
68HC916X1 (XCM916X1)	—	2K	48K+2K	SCIM	GPT	SCI, queued SPI	6-CH 10-Bit	5.0	16	C	120 QFP(TH)	—	Now		MC68HC916X1TS/D
MC68HC16Y1	48K	2K	—	SCIM	GPT, TPU	Dual SCI, SPI	8-CH 10-Bit	5.0	16	C,V,M	160 QFP(FT)	HC916Y1	Now		MC68HC16Y1UM/AD
68HC916Y1 (XCM916Y1)	—	2K+2K	48K+2K	SCIM	GPT, TPU	Dual SCI, SPI	8-CH 10-Bit	5.0	16	C	160 QFP(FT)	—	Now		MC68HC16Y1UM/AD
MC68HC16Y3	96K	4K	—	SCIM2	GPT, TPU2	Dual SCI, queued SPI	8-CH 10-Bit	5.0	16	C,V,M	160 QFP(FT)	HC916Y3	Now		MC68HC16Y3PP/D (MC68HC16Y3/916Y3UM/AD on web only)
MC68HC916Y3	—	4K	96K+4K	SCIM2	GPT, TPU2	Dual SCI, queued SPI	8-CH 10-Bit	5.0	16	C	160 QFP(FT)	—	Now		MC68HC916Y3PP/D (MC68HC16Y3/916Y3UM/AD on web only)
MC68HC16Z1	—	1K	—	SIM	GPT	SCI, queued SPI	8-CH 10-Bit	5.0	16, 20, 25	C,V,M	132 PQFP(FC) 144 LQFP(PV)	—	Now	2.7V–3.6V 16MHz version (MC68CK16Z1)	MC68HC16ZUM/AD
MC68HC16Z3	8K	4K	—	SIM	GPT	SCI, queued SPI	8-CH 10-Bit	5.0	16, 20, 25	C,V,M	132 PQFP(FC)	—	Now		MC68HC16ZUM/AD
MC68HC16Z4	—	1K	—	SIML	GPT	Dual SCI, SPI	8-CH 10-Bit	5.0	16	C	144 LQFP(PV)	—	Now	2.7V–3.6V 16MHz version (MC68CK16Z4)	MC68HC16ZUM/AD

68HC16 Reference Manuals

CPU16RM/AD	68HC16 CPU Reference Manual
SIMRM/AD	System Integration Module Reference Manual
TPURM/AD	TPU Reference Manual
GPTRM/AD	General-Purpose Timer Reference Manual
QSMRM/AD	Queued Serial Module Reference Manual
ADCRM/AD	Analog-to-Digital Reference Manual
CTMRM/D	Configurable Timer Reference Manual
MCCIRM/AD	Multi-Channel Communication Interface Reference Manual
SCIMRM/AD	Single-Chip Integration Module Reference Manual

683XX Family

Device	ROM (Bytes)	RAM (Bytes)	FLASH (Bytes)	Device Integration	Timer	Serial	A/D	Operating Voltage (V)	Operating Frequency (MHz)	Temp.	Package Options	Avail.	Comments	Documentation
MC68331	—	—	—	SIM	GPT	SCI, queued SPI	—	5.0	16, 20, 25	C,V,M	132 PQFP 144 LQFP	Now	2.7V–3.6V 16MHz version (MC68CK331)	MC68331UM/AD MC68CK331EC16/D
MC68332	—	2K	—	SIM	TPU	SCI, queued SPI	—	5.0	16, 20, 25	C,V,M	132 PQFP 144 LQFP	Now	3.0V–3.6V 16MHz version (MC68LK332)	MC68332UM/AD MC68LK332EC16/D
MC68336	—	4K+3.5K	—	SIM	TPU CTM4	SCI, queued SPI	Queued 16-CH 10-Bit	5.0	20, 25	V,M	160 QFP	Now		MC68336/376PP/D MC68336/376UM/AD
MC68376	8K	4K+3.5K	—	SIM	TPU CTM4	TOUCAN, SCI, queued SPI	Queued 16-CH 10-Bit	5.0	20, 25	V,M	160 QFP	Now		MC68336/376PP/D MC68336/376UM/AD

683xx Reference Manuals

CPU32RM/AD	683xx CPU32 Reference Manual
SIMRM/AD	System Integration Module Reference Manual
TPURM/AD	TPU Reference Manual
GPTRM/AD	General-Purpose Timer Reference Manual
QSMRM/AD	Queued Serial Module Reference Manual
ADCRM/AD	Analog-to-Digital Reference Manual
CTMRM/D	Configurable Timer Reference Manual

M•CORE Family

Device	ROM (Bytes)	RAM (Bytes)	FLASH (Bytes)	Timer	PWM	Serial	A/D	Operating Voltage (V)	Operating Frequency (MHz)	Temp.	Package Options	Avail.	Comments	Documentation
MMC2001 (XMC2001)	256K	32K	—	Time-of-day, periodic interrupt timer, COP	6-CH 10-Bit	Dual UART Interval SPI	—	1.8–3.6	33	C	144 LQFP	Samples Now	ROM includes debugger, peripheral device drivers, and a monitor; external bus interface with 22 address/16 data and 4 chip selects, OnCE debug module, KBI (16 pins) Sample part number: KMMC2001HCPV33B	MMC2001RM/D MCORERM/AD
MMC2075 (XMC2075)	96K	6K	—	Time-of-day, COP, dual 16-bit capture/compare	—	UART SPI	—	1.8–3.6	10	C	144 MAPBGA	Samples Now	PLL clock, 32 source interrupt controller, interrupt timer, external bus interface with 22 address/16 data and 4 chip selects, OnCE debug module, KBI (8 pins), melody generator Sample part number: KXMC2075HCVF10	BR1824/D MMC2080/2075/D MMC2080UM/D MCORERM/AD

— Definitions —

ADC — Analog-to-Digital Converter
BDM — Background Debug Mode
C — -40°C to +85°C Operating Temperature Range
CAN — Controller Area Network
CDIP — Ceramic Dual In-Line Package
CLCC — Ceramic Leaded Chip Carrier
COP — Computer Operating Properly (Watchdog Timer)
CTM — Configurable Timer Module (Various Hardware Options)
DIP — Dual In-line Package
DTMF — Dual-Tone Multi-Frequency
EBI — External Bus Interface
GPT — General-Purpose Timer Module (4 IC, 5 OC, 2 PWM)
IC — Input Capture
I²C — Inter-Integrated Circuit
i/o — Bidirectional Input and Output Port Pins
i — Input-Only Port Pins
ICG — Internal Clock Generator
ISPI — Interval Serial Peripheral Interface
KBI — Keyboard Interrupt
LCD — Liquid Crystal Display
LTD — Limited Availability
LQFP — Low-Profile Quad Flat Pack
LVI — Low-Voltage Inhibit
LVR — Low-Voltage Reset
M — -40°C to +125°C Operating Temperature Range
MAPBGA — Mold Array Process Ball Grid Array
MC — Fully Qualified Production
MCCI — Multi-Channel Communication Interface (2 SCI, SPI)
MFT — Multi Function Timer
MUX — Multiplexed
o — Output-Only Port Pins
OC — Output Compare
PBGA — Plastic Ball Grid Array
PC — Pre-Qualification, Engineering Samples Only
PEEP — Personality EEPROM
PEP — Personality EPROM
PLCC — Plastic Leaded Chip Carrier
PLL — Phase-Locked Loop
PQFP — Plastic Quad Flat Pack
PWM — Pulse-Width Modulation

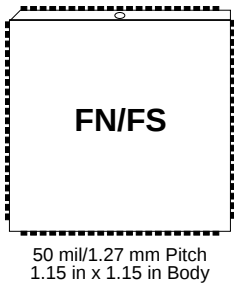
QADC — Queued Analog-to-Digital Converter (10-Bit)
QFP — Quad Flat Pack
QSM — Queued Serial Module (SCI + QSPI)
QSPI — Queued SPI
RTI — Real-Time Interrupt
SCI — Serial Communication Interface
SCI+ — Enhanced SCI
SCIM — Single-Chip Integration Module
SDIP — Shrink Dual In-line Package
SIM — System Integration Module
SIML — Low-Power System Integration Module
SIOP — Simple Serial I/O Port
SPI — Serial Peripheral Interface
SPI+ — Enhanced SPI
SRAM — Standby RAM Module
SSOP — Shrink Small Outline Package
TPU — Time processor Unit (16 Programmable Channels)
TPURAM — Standby RAM Module with TPU Emulation Capability
UART — Universal Asynchronous Receiver/Transmitter
USB — Universal Serial Bus
V — -40°C to +105°C Operating Temperature Range
XC — Initial Production Qualification, Not Fully Characterized

— Package Designators —

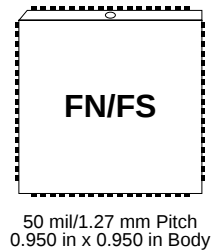
B — Shrink DIP (70 mil spacing)
DW — Small Outline (Wide-Body SOIC)
FA — 7 x 7 mm Quad Flat Pack (QFP)
FB — 10 x 10 mm Quad Flat Pack (QFP)
FE — CQFP (windowed) — Samples Only
FN — Plastic Quad (PLCC)
FS — CLCC (windowed) — Samples Only
FT — 28 x 28 mm Quad Flat Pack (QFP)
FU — 14 x 14 mm Quad Flat Pack (QFP)
FZ — CQFP (windowed) — Samples Only
K — Cersdip (windowed) — Samples Only
L — Ceramic Sidebrazed
P — Dual in-Line Plastic
PU — 14 x 14 mm Low-Profile Quad Flat Pack (LQFP)
PV — 20 x 20 mm Low-Profile Quad Flat Pack (LQFP)
S — Cerdip (windowed) — Samples Only
VF — 1.6 mm Thick MAPBGA
ZP — Plastic Ball Grid Array (PBGA)

Package Options (Actual Size) Sheet 1 of 2

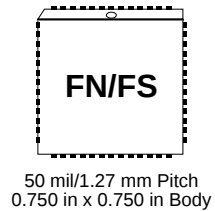
84-Lead PLCC/CLCC



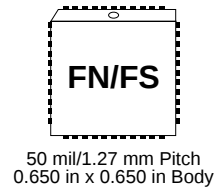
68-Lead PLCC/CLCC



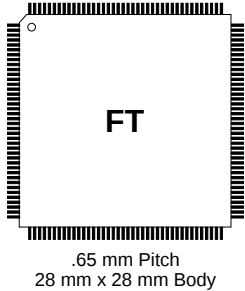
52-Lead PLCC/CLCC



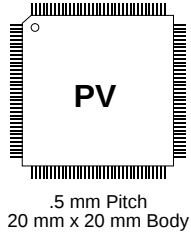
44-Lead PLCC/CLCC



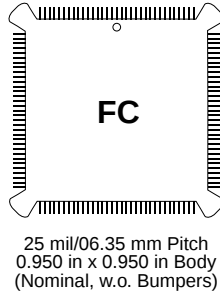
160-Lead QFP



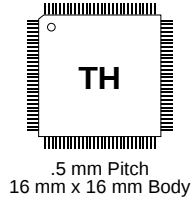
144-Lead LQFP



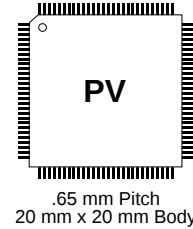
132-Lead PQFP



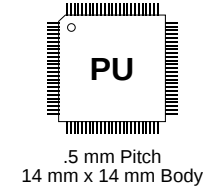
120-Lead QFP/LQFP



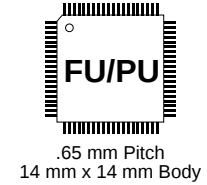
112-Lead LQFP



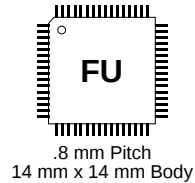
100-Lead LQFP



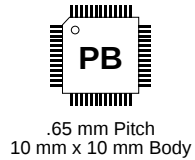
80-Lead QFP/LQFP



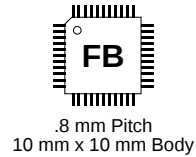
64-Lead QFP



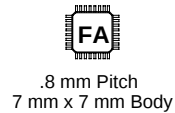
52-Lead QFP



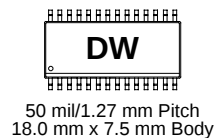
44-Lead QFP



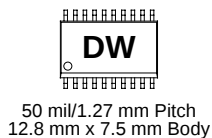
32-Lead QFP



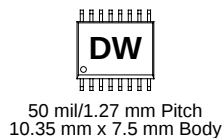
28-Lead SOIC



20-Lead SOIC



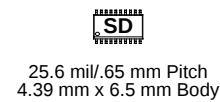
16-Lead SOIC



28-Lead SSOP



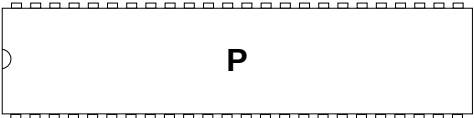
20-Lead SSOP



Package Options (Actual Size)

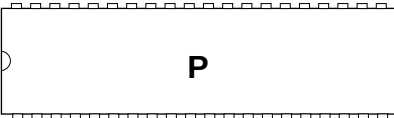
Sheet 2 of 2

48-Pin Plastic DIP



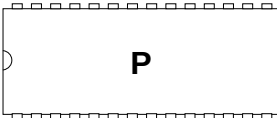
100 mil/2.54 mm Pitch
2.45 in x .55 in Body
(100 mil x 600 mil pin centers)

40-Pin Plastic DIP



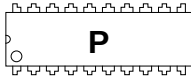
100 mil/2.54 mm Pitch
2.05 in x .55 in Body
(100 mil x 600 mil pin centers)

28-Pin DIP



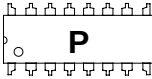
100 mil/2.54 mm Pitch
1.45 in x .55 in Body
(100 mil x 600 mil pin centers)

20-Pin Plastic DIP



100 mil/2.54 mm Pitch
.97 in x .29 in Body
(100 mil x 300 mil pin centers)

16-Pin Plastic DIP



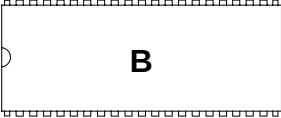
100 mil/2.54 mm Pitch
.75 in x .25 in Body
(100 mil x 300 mil pin centers)

56-Pin Plastic SDIP



70 mil/1.778 mm Pitch
2.05 in x .55 in Body
(70 mil x 600 mil pin centers)

42-Pin Plastic SDIP



70 mil/1.778 mm Pitch
1.45 in x .55 in Body
(70 mil x 600 mil pin centers)

144-Ball Grid Array (BGA)

VF



.8 mm Ball Pitch
12 mm x 12 mm x 1.6 mm

Motorola reserves the right to make changes without further notice to any products herein. Motorola makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Motorola assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters which may be provided in Motorola data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Motorola does not convey any license under its patent rights nor the rights of others. Motorola products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Motorola product could create a situation where personal injury or death may occur. Should Buyer purchase or use Motorola products for any such unintended or unauthorized application, Buyer shall indemnify and hold Motorola and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Motorola was negligent regarding the design or manufacture of the part. Motorola and  are registered trademarks of Motorola, Inc. Motorola, Inc. is an Equal Opportunity/Affirmative Action Employer.

How to reach us:

USA/EUROPE/Locations Not Listed: Motorola Literature Distribution, P.O. Box 5405, Denver, Colorado 80217, 1-800-441-2447 or 1-303-675-2140. Technical Information Center, 1-800-521-6274

JAPAN: Motorola Japan Ltd.; SPS, Technical Information Center, 3-20-1, Minami-Azabu, Minato-ku, Tokyo 106-8573 Japan. 81-3-3440-8573

ASIA/PACIFIC: Motorola Semiconductors H.K. Ltd.; Silicon Harbour Centre, 2 Dai King Street, Tai Po Industrial Estate, Tai Po, N.T., Hong Kong. 852-26668334

HOME PAGE: <http://motorola.com/semiconductors/>



MOTOROLA

© Motorola, Inc., 2000

SG186/D