SG175/D
REV 13

MOTOROLA

Networking and Computing Systems Group

Networking Systems Division (NSD)

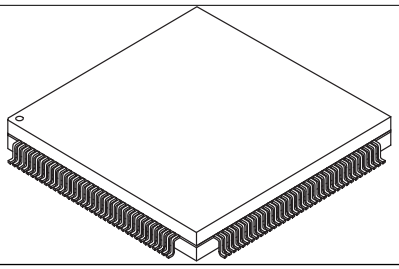
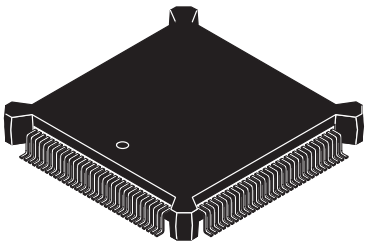
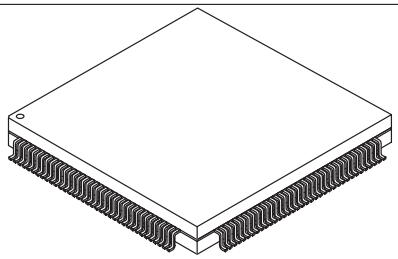
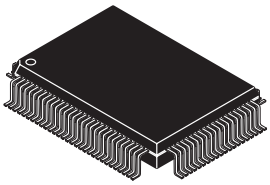
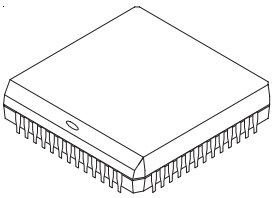
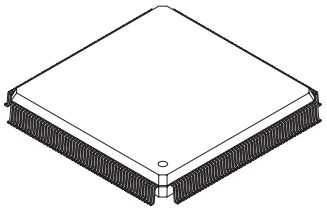
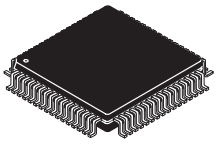
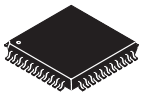
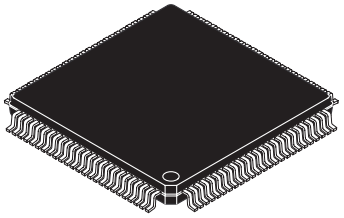
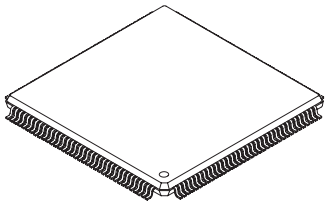
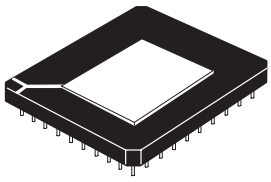
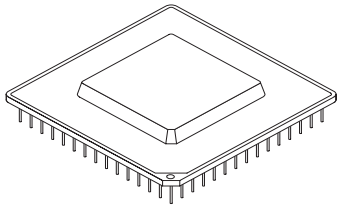
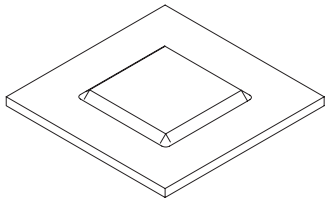
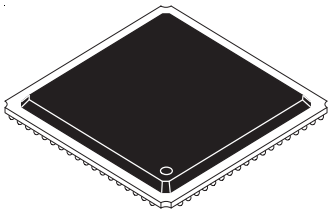
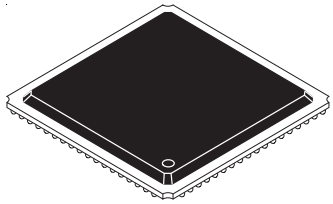
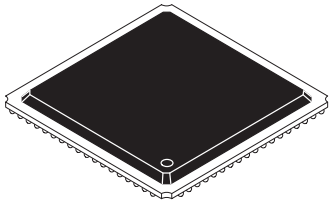
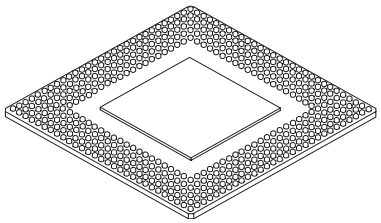
Personal Computing Systems Division (PCSD)

Product Information

3rd QUARTER 1999

PowerPC™ Microprocessors
Integrated PowerPC Microprocessors
Networking & Communications 68K Processors
68K/ColdFire® Microprocessors
Integrated 68K/ColdFire Microprocessors
Timing Solutions
Networking Systems Memory

Digital DNA™
From Motorola

		
EM = Plastic Quad (Gull Wing)	**FC = Plastic Quad (Gull Wing)**	**FE = Ceramic Quad (Gull Wing)**
		
FG = Plastic Quad Flat Pack (PQFP)	**FN = Plastic Quad Pack (PLCC)**	**FT = Plastic Flat Pack (28 x 28 mm)**
		
FU = Plastic Quad Flat Pack (14x14 mm)	**PB = LQFP (10mm x 10mm) Plastic**	**PU = Thin Quad Flat Pack 100-lead (Plastic)**
		
PV = TQFP (20x20 mm) 144-lead (Plastic)	**RC = Pin Grid Array, Gold Lead Finish**	**RP = Plastic Pin Grid Array**
		
RX = CBGA without Lid	**ZC = Plastic Ball Grid Array, 256 Lead**	**ZP = Ball Grid Array, 357 Lead**
		
ZT= Ball Grid Array, 256 Lead	**ZU = Tape Ball Grid Array, 352 Lead**	

100, 600, and 700 Series PowerPC Processors & Chipsets

Standard temp: 0° to +105°C Tj (junction temperature)

Device No.	Package	Speeds	Apps Modr	Rev	Process	Voltage Core	Voltage IO/tol.	SOQ	MPQ	POQ	Description
105											
XPC105A	304-Lead RX	66	C	D=2.4	HiP 1.0	3.3±5%	3.3/5.0	1	1	55	60x to PCI bridge, L2 cache controller, memory controller with support for DRAM, SDRAM, ROM, and flash ROM. Not recommended for new designs.
106											
MPC106A	304-Lead RX	66	C	G=4.0	HiP 1.4	3.3±5%	3.3/5.0	1	1	55	60x to PCI bridge, multiple-processor support, L2 cache controller, memory controller with support for EDO/FPM, DRAM, SDRAM, ROM, and flash ROM.
MPC106A	304-Lead RX	83	D	G=4.0	HiP 1.4	3.3±5%	3.3/5.0	1	1	55	
MPC106A	304-Lead RX	66, 83	T	G=4.0	HiP 1.4	3.3±5%	3.3/5.0	0	4	55	
EC603e											
KMPE603E	240-Lead FE	100, 133	L	N=4.1	HiP 1.3	3.3±5%	3.3/5.0	2	2	2	32-bit PowerPC superscalar MPU (3 instructions per cycle) with dual 16k instruction and data caches, 32- and 64-bit external data bus, 2.5- or 3.3-volt core and 3.3-volt I/O.
MPE603E	240-Lead FE	100, 133	L	N=4.1	HiP 1.3	3.3±5%	3.3/5.0	0	24	24	
MPE603E	255-Lead RX	100, 133	L	N=4.1	HiP 1.3	3.3±5%	3.3/5.0	1	1	60	
KXPE603P	240-Lead FE	166, 200	L	E=2.1.1	HiP 2.0	2.5±5%	3.3/5.0	2	2	2	
XPE603P	240-Lead FE	166, 200	L	E=2.1.1	HiP 2.0	2.5±5%	3.3/5.0	0	24	24	
MPE603R	255-Lead RX	200, 266, 300	L	C=2.1	HiP 3.0	2.5±5%	3.3/5.0	1	1	60	
603e											
KMPC603E	240-Lead FE	100, 133	L	N=4.1	HiP 1.3	3.3±5%	3.3/5.0	2	2	2	32-bit PowerPC superscalar MPU (3 instructions per cycle) with dual 16k instruction and data caches, single/double precision IEEE FPU, 32- and 64-bit external data bus, 2.5- or 3.3-volt core and 3.3-volt I/O.
MPC603E	240-Lead FE	100, 133	L	N=4.1	HiP 1.3	3.3±5%	3.3/5.0	0	24	24	
MPC603E	240-Lead FE	100, 133	T	N=4.1	HiP 1.3	3.3±5%	3.3/5.0	0	64	24	
MPC603E	255-Lead RX	100, 133	L	N=4.1	HiP 1.3	3.3±5%	3.3/5.0	1	1	60	
MPC603E	255-Lead RX	100, 133	T	N=4.1	HiP 1.3	3.3±5%	3.3/5.0	0	60	60	
KXPC603P	240-Lead FE	166, 200	L	E=2.1.1	HiP 2.0	2.5±5%	3.3/5.0	2	2	2	
XPC603P	240-Lead FE	166, 200	L	E=2.1.1	HiP 2.0	2.5±5%	3.3/5.0	0	24	24	
XPC603P	240-Lead FE	166, 200	T	E=2.1.1	HiP 2.0	2.5±5%	3.3/5.0	0	24	24	
MPC603R	255-Lead RX	200, 266, 300	L	C=2.1	HiP 3.0	2.5±5%	3.3/5.0	1	1	60	
MPC603R	255-Lead RX	200, 266	T	C=2.1	HiP 3.0	2.5±5%	3.3/5.0	1	1	60	
740/750											
XPC740A	255-Lead RX	200, 233, 266	L	E=2.2	HiP 3.0	2.6±0.1	3.3	1	1	60	32-bit PowerPC superscalar MPU (3 instructions per cycle) with dual 32k instruction and data caches, single/double precision IEEE FPU, and 64-bit external data bus. The 750 also has external L2 cache interface (up to 1 meg) with integrated controller and cache tags.
XPC750A	360-Lead RX	200, 233, 266	L	E=2.2	HiP 3.0	2.6±0.1	3.3	1	1	44	
MPC740A	255-Lead RX	200, 266	T	H=3.1	HiP 3.0	2.6±0.1	3.3	0	60	60	
MPC750A	360-Lead RX	200, 266	T	H=3.1	HiP 3.0	2.6±0.1	3.3	0	44	44	
XPC740P	255-Lead RX	300, 333	L	E=1.2	HiP 3.5	1.9±0.1	3.3	1	1	60	
XPC750P	360-Lead RX	300, 333	L	E=1.2	HiP 3.5	1.9±0.1	3.3	1	1	44	
XPC750P	360-Lead RX	400	P	E=1.2	HiP 3.5	2.05±0.05	3.3	1	1	44	
XPC750P	360-Lead RX	366	R	E=1.2	HiP 3.5	2.05±0.05	3.3	1	1	44	

KMPC/KXPC = Sample

Apps mods: T = -40°C to 105°C Tj; P = 65°C; R = 105°C

MPC801, 850 and 860 Integrated PowerPC Communications Processors

Standard temp: 0° to +95°C Tj (junction temperature)

Device No.	Package	Speeds	Rev	Device Name	Temp* (-40 to +95 Tj)	SOQ	MPQ	POQ	BRICK	Description
XPC801	ZT	25, 40		Low-Cost Integrated PowerPC MPU	—	0	60	300		Low cost general purpose Embedded PowerPC MPU. The MPC801 is not recommended for new designs.
XPC850	ZT	33, 50			CZT	0	60	300		
XPC850DC	ZT	33, 50, 66	A		CZT 50	0	60	300		
XPC850DE	ZT	33, 50, 66	A		CZT 50	0	60	300		
XPC850DH	ZT	33, 50, 66	A		CZT 50	0	60	300		
XPC850SE	ZT	33, 50, 66	A		—	0	60	300		
XPC850SR	ZT	33, 50, 66	A		CZT 50	0	60	300		
						For sample order - KXPC801, KXPC850, KXPC850DC, KXPC850DE, KXPC850DH, KXPC850SE, KXPC850SR				
XPC860	ZP	33, 50, 66	C1	PowerQUICC™ PowerPC MPU	CZP 33, 50	0	44	220		PowerQUICC family with embedded PowerPC superscalar MPU with dual 4k I-cache and D-cache with MMUs integrated with CPM (Communication Processing Module) of earlier generation 68360 QUICC™ plus DSP capability. Rev. Col. PCN issued 22 June 1998.
XPC860DC	ZP	33, 50, 66	C1		CZP 33, 50	0	44	220		
XPC860DE	ZP	33, 50, 66	C1		CZP 33, 50	0	44	220		
XPC860DH	ZP	33, 50, 66	C1		CZP 33, 50	0	44	220		
XPC860EN	ZP	33, 50, 66	C1		CZP 33, 50	0	44	220		
XPC860MH	ZP	33, 50, 66	C1		CZP 33, 50	0	44	220		
XPC860SR	ZP	33, 50, 66	C1		CZP 33, 50	0	44	220		
XPC860T	ZP	33, 50	B.3/B.5		CZP 33, 50	0	44	220		
XPC860DT	ZP	50	B.3/B.5		CZP 50	0	44	220		
						For sample order—KXPC860, KXPC860EN, KXPC860DC, KXPC860DE, KXPC860DH, KXPC860MH, KXPC86SR, KXPC860T.				

EN = Ethernet; DC = Dual Channel; DE = Dual Ethernet; DH = two channel w/HDLC; DT = two SCCs w/10/100; MH = Four Channel w/HDLC; SE = Single Ethernet; SR = Four Channel w/Ethernet, multi-HDLC, ATM; T = 10/100 Four Channel w/HDLC.

MPC850/MPC860 Processor Derivatives

Device	850	850DC	850DE	850DH	850SE	850SR	860	860DC	860DE	860DH	860EN	860MH	860SR	860T	860DT
Serial Communciations Controllers (SCCs)	1	2	2	2	1	2	4	2	2	2	4	4	4	4	2
Ethernet	Yes	SCC1	Yes	Yes	Yes	Yes	—	SCC1	Yes	Yes	Yes	Yes	Yes	10/100	10/100
ATM	—	—	—	—	—	Yes	—	—	—	—	—	—	Yes	—	—
USB	Yes	Yes	Yes	Yes	—	Yes	—	—	—	—	—	—	—	—	—
MHDLC	—	—	—	Yes	—	Yes	—	—	—	Yes	—	Yes	Yes	Yes	Yes
PCMCIA	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2

MPC821 and 823 Integrated PowerPC Microprocessors for Portable Systems

Device No.	Package	Speeds	Rev	Device Name	Temp	SOQ	MPQ	POQ	Description
XPC821	ZP ZP	25 50, 66	B3 B3	Portable System MPU	CZP 25 —	0 0	44 44	220 220	PowerPC MPU for personal systems.
						For sample order - SPAK821			
XPC823	ZT ZC	66, 75, 81 66, 75, 81	A A	Portable System MPU	CZT 66, 75, 81 CZT 66, 75, 81	2 2	60 84	300 420	PowerPC MPU for mobile computing.
						For sample order—SPAK823			

MPC8240 Integrated PowerPC Processors **Standard temp: 0° to +105°C Tj (junction temperature)**

Device No.	Package	Speeds	Apps Modr	Rev	Process	Voltage Core	Voltage IO/tol.	SOQ	MPQ	POQ	Description
8240 XPC8240 XPC8240 KXPC8240	 352-Lead ZU 352-Lead ZU 352-Lead ZU	 200, 266 200, 266 200, 266	 P L L	 C=111 C=111 C=111	 HiP 3.0 HiP 3.0 HiP 3.0	 2.5 ± 5% 2.5 ± 5% 2.5 ± 5%	 3.3/5.0 3.3/5.0 3.3/5.0	 0 0 2	 24 24 2	 24 24 2	32-bit superscalar PowerPC processor core with integrated peripheral logic. Supports up to 100 MHz 64-bit memory interface and 32-bit PCI interface up to 66 MHz.
KXPC = Sample			Apps mods: L = 105°C Tj; P=70°C Tj								

68K Integrated Communications Processors

Device No.	Package	Speeds	Rev	Device Name	Temp* (-40 to +85°C)	SOQ	MPQ	POQ	Brick	Description
MC68302 MC68302V	132-Lead RC 132-Lead FC 144-Lead PV 144-Lead PV	16, 20, 25 16, 20, 25 16, 20, 25, 33 16 @ 3.3V	C C C C	Integrated Multiprotocol Processor (IMP)	CRC16, 20 CFC16, 20 CPV16 CPV16V	0 0 0 0	14 36 60 60	14 144 300 300	 180 300 300	68000 core with three high-performance multiprotocol serial channels also on-chip DMA, RAM, timers, I/O, chip select, and wait state interrupt controller.
						For FC, PV sample order—SPAK302FCXXC, SPAK302PVXXC				
XC68EN302	144-Lead PV	20, 25	B	Integrated Multiprotocol Processor with Ethernet Controller	CPV20	0	60	300	300	Full 68302, plus separate IEEC 802.3 ethernet MAC channel and full DRAM controller
						For PV sample order—SPAKEN302PVXXB				
XC68LC302 XC68LC302V	100-Lead PU	16, 20, 25 @ 5V 16, 20 @ 3.3V	B B	Low-Cost Integrated Multiprotocol Processor	CPU16, 20 CPU16V	0	84	420	420	Static EC000 Core Processor with two high-performance multiprotocol serial channels; also on-chip DMA, RAM, timers, I/O, chip selects, and wait state interrupt controller.
						For PU sample order—SPAKLC302PUXXB				
MC68QH302	144-Lead PV	16, 20, 25	C	Quad-HDLC Integrated Multiprotocol Processor		0	60	300	300	68302 derivative with support for up to four HDLC transparent channels. Pin compatible with 68302.
						For PV sample order---SPAKQH302PVXXC				
MC68360 MC68360V MC68EN360 MC68EN360V	240-Lead EM 357-Lead ZP 241-Lead RC 240-Lead EM 357-Lead ZP 240-Lead EM 357-Lead ZP 241-Lead RC 240-Lead EM 357-Lead ZP	25,33 @ 5.0V 25 @ 3.3V 25, 33 @ 5.0V 25 @ 3.3V	K K K L L K K K L L	QUICC™ QUad Integrated Communications Controller	CEM25 CZP25 CRC25 CEM25 CZP25 CRC25	0 0 0 0 0 0 0 0 0 0	24 44 10 24 44 24 44 10 24 44	120 220 10 120 220 120 220 10 120 220		CPU32 + core with System Integration Module (SIM) and four high-performance SCCs support numerous protocols. Two SCCs support Ethernet on "EN" version.
						For EM sample order—SPAK360EMXXK, SPAKEN360EMXXK, SPAK360EM25VL, SPAKEN360EM25VL For ZP sample order—SPAK360ZPXXK, SPAKEN360ZPXXK, SPAK360ZP25VL, SPAKEN360ZP25VL				
MC68MH360 MC68MH360V	240-Lead EM 357-Lead ZP 241-Lead RC 240-Lead EM 357-Lead ZP	25,33@5.0V 25@3.3V	K K K L L	Multichannel HDLC Controller	CEM25 CZP25 CRC25	0 0 0 0 0	24 44 10 24 44	120 220 10 120 220		One-chip integrated microprocessor and peripheral combination with four SCCs, two serial management controllers (SMCs) and one serial peripheral interface (SPI).
						For MH sample order—SPAKMH360EMXXK, SPAKMH360EMXXVL, SPAKMH360RLXXK, SPAKMH360ZPXXK, SPAKMH360ZPXXVL				
MC68606	84-Lead FN	12, 16	C		CFN12, 16	1	1	15		Implements CCITT Q.920/Q.921 link access procedure (LAPB) specified at ISO level 2 for both signaling and data applications in an ISDN.
MC68824	84-Lead FN	10, 12, 16	H	Token Bus Controller (TBC)		1	1	15		Implements IEEE 802.4 Token Bus Media Access Control which GM MAP specifies in layer 2. Manages access to media, fault recovery, and frame formatting. Runs at speeds down to 10 Kb/s.
Note: *Extended temperature devices with minimum order requirements. All package/speed combinations may not be valid - consult factory to verify.										

68K Networking & Communications Support Devices

Device No.	Package	Speeds	Rev	Device Name	Description
MC68184	40-Lead PL			Broadband I/F Controller (BIC)	Macrocell implementation of the digital portion of the IEEE 802.4 Broadband Physical layer. 1, 5, 10 Mb/s serial speed. Contact ASIC Division, Chandler, AZ (602) 821-4597.
MC68194	52-Lead FJ			Carrierband Modem (CBM)	A bipolar implementation of the IEEE 802.4 Carrierband Physical layer. 1, 5, 10 Mb/s serial speed. Contact IC Logic Division, Mesa AZ (602) 962-3005.

68K Stand-Alone CPUs

Device No.	Package	Speeds	Rev	Device Name	Temp** (-40 to +85°C)	SOQ	MPQ	POQ	BRICK	Description
MC68EC000	68-Lead FN 64-Lead FU	8, 10, 12, 16, 20 8, 10, 12, 16, 20		8-/16-/32-Bit HCMOS Embedded MPU		0 0	18 84	1008 252	420	Low-cost embedded control MPU with 8-/16-bit selectable data bus.
						For FN, FU sample order—SPAKEC000FNXX, SPAKEC000FUXX				
MC68HC000	68-Lead FN, 68-Lead RC	8, 10, 12, 16, 20 8, 10, 12, 16		HCMOS 16-/32-Bit MPU	CFN8, 10, 12, 16 CRC8, 10, 12, 16	5 0 0	5 78 21	160 780 210		Completely pin and timing MC68000-compatibility with a tenth of the power dissipation.
						For FC, FN, P, RC sample order—SPAKHC000FCXX, SPAKHC000FNXX, SPAKHC000PXX, SPAKH000RCXX*				
MC68HC001	68-Lead FN, 68-Lead RC	8, 10, 12, 16, 8, 10, 12, 16		Staticlly Switchable 8-/16-Bit Data Bus	CFN8, 10 CRC8	0 0	18 21	1008 210		Functionally compatible with MC68000 and MC68008.
						For FN, RC sample order—SPAKHC001FNXX, SPAKHC001RCXX*				
MC68SEC000	64-Lead FU, 68-Lead PB	10, 16, 20 10, 16, 20		8-/16-/32-Bit Static HCMOS Embedded MPU	CFN8, 10 CRC8	0 1	84 1	252 1		Static version of the MC68EC000.
						For FU sample order—SPAKSEC000FUXX				
MC68020	114-Lead RC 132-Lead FE* 114-Lead RP 132-Lead FC	12*, 16, 20, 25, 33 16, 20, 25, 33 16, 20, 25 16, 20, 25, 33	E E E E	32-Bit MPU	CRC16, 20, 25 CRP16 CFC16, 25	1 0 1 0	1 36 1 36	14 180 13 144	 180	Complete 32-bit MPU. 5-Gbyte linear address space. Coprocessor interface. Instruction cache. Dynamic bus sizing. Excellent MPU for graphics control. On-chip cache speeds drawing algorithms. Bit field support for pixel manipulation.
						For FC, FE sample order—SPAK020FCXXE, SPAK020FEXXE				
MC68EC020	100-Lead FG 100-Lead RP	16, 25 16, 25		32-Bit Embedded MPU	CFG16 CRP25	0 1	66 1	264 13	330	32-bit data bus MPU with 24-bit address bus. Instruction cache. Dynamic bus sizing. Coprocessor interface. Low-cost packaging.
						For FG sample order—SPAKEC020FGXX				
MC68030	128-Lead RC 124-Lead RP 132-Lead FE	16,20,25,33,40,50 16,20,25,33 16,20,25,33	C C C	Enhanced 32-Bit MPU	CRC25,33 CRP16,20,25,33	1 1 0	1 1 36	14 14 180		Complete 32-bit MPU with on-chip instruction and data caches, internal parallel buses, enhanced bus controller, and on-chip MMU.
						For FE sample order—SPAK030FEXXC				
MC68EC030	124-Lead RP 132-Lead FE	25, 40 25, 40	C C	Embedded MPU	CRP25	1 1	1 36	14 180		32-bit MPU for embedded applications. On-chip instruction and data cache provide high-speed access for control routines and data. Utilizes low-cost DRAM bus interface.
						For FE, PV sample order—SPAKEC030FEXXC, SPAKEC030PVXXC				
MC68040	179-Lead RC 184-Lead FE	25, 33, 40 25, 33, 40		32-Bit MPU MMU FPU		1 0	1 24	10 96		Complete 32-bit MPU with on-chip instruction/data caches (4k bytes each). On-chip MMU. Full IEEE floating point, multiprocessing support with full M68000 Family compatibility.
						For FE sample order—SPAK040FEXX				
MC68EC040	179-Lead RC 184-Lead FE	20, 25, 33, 40 20, 25, 33, 40		Embedded 32-Bit High Performance Processor		1 0	1 24	10 96	120	High-performance 32-bit MPU with on-chip instruction and data cache provides high-speed access for control routines and data. Utilizes low-cost DRAM bus interface.
						For sample order—SPAK68EC040RCXX, SPAKEC040FEXX, SPAKEC040FSXX				
MC68LC040	179-Lead RC 184-Lead FE	20, 25, 33, 40 20, 25, 33, 40		High Performance 32-Bit Processor		1 0	1 24	10 96	120	68040-compatible integer unit and MMU. Ideal solution for cost-sensitive computer or sophisticated embedded applications.
						For FE sample order—SPAKLC040FEXX				
MC68040V	179-Lead RC 184-Lead FE	25, 33,40 @ 3.3 V 25,33 @ 3.3 V		32-Bit MPU MMU, Low-Voltage		1 0	1 24	0 96		Low-voltage complete 32-bit MPU with on-chip instruction/data caches (4k bytes each). On-chip MMU. Multiprocessing support.
						For FE sample order—SPAKEC040VFEXX, SPAKEC040VRCXX				
MC68060	206-Lead RC	50		Superscalar 32-Bit Processor		0	1	10		RISC hybrid superscalar MPU with full M68000 Family compatibility. Includes dual integer units, on-chip instruction/data caches (8K bytes each), on-chip MMU, and full IEEE compliant FPU.
MC68EC060	206-Lead RC 304-Lead ZU	50, 66, 75 50, 66, 75		Superscalar 32-Bit Processor		0 1	1 27	10 27		RISC hybrid superscalar MPU with full M68000 Family compatibility. Includes dual integer units, on-chip instruction/data caches (8K bytes each). Ideal for high-performance embedded control applications.
MC68LC060	206-Lead RC	50, 66, 75		Superscalar 32-Bit Processor		0	1	10		RISC hybrid superscalar MPU with full M68000 Family compatibility. Includes dual integer units, on-chip instruction/data caches (8K bytes each) and on-chip MMU.
MC68882	68-Lead RC 68-Lead FN	16,20,25,33,40,50 16,20,25,33,40	A A	Enhanced Floating-Point Coprocessor (EFPCP)	CRC16,20,25,33 CFN16,20,25,33	1 1	1 1	21 18		Pin-to-pin timing and software compatibility with MC68881. Dual ported registers and increased pipelining allows 2-4 × performance of MC68881.

68K General-Purpose Integrated Processors

Device No.	Package	Speeds	Rev	Device Name	Temp** (-40 to +85°C)**	SOQ	MPQ	POQ	BRICK	Description
MC68306	132-Lead FC 144-Lead PV	16,20 16,20	B	Integrated EC000 Processor	CFC16	0 0	36 60	144 600	300	68000 CPU, 68681 DUART, DRAM control all in one chip.
						For FC, PV sample order—SPAK306FCXXB, SPAK306PVXXB				
XC68307* XC68307V*	100-Lead FG 100-Lead PU 100-Lead FG 100-Lead PU	16 16 8, 16 @ 3.3 V 8, 16 @ 3.3 V		Integrated Multiple Bus Processor	CFG16	0 0 0 0	66 84 66 84	264 420 264 420		Static EC000 Core Processor, UART, M-Bus Dual Timers, 8051 interface, dynamic 68000 bus.
						For FG, PU sample order—SPAK307FGXX, SPAK307FGXXV, SPAK307PUXX, SPAK307PUXXV				
MC68340 MC68340V	144-Lead FE* 144-Lead PV 144-Lead FT 144-Lead FE* 144-Lead PV	16, 25 16, 25 16, 25 16 @ 3.3V 16 @ 3.3V	E E E E E	Integrated Processor with DMA	CFE16, CFE25 CPV16, CPV25 CFT16, CFT25	0 0 0 0 0	24 60 24 24 60	96 60 96 96 60	120 300 120	CPU32 core processor for data movement applications. Two channel DMA, two serial channels, two timers, chip selects, wait-state generation, and glue logic. MC68340V is the 3.3 volt version of the MC68340.
						For FE, FT, and PV sample order—SPAK340FEXXE, SPAK340FTXXVE, SPAK340PVXXVE				

* Not recommended for new designs. ** *Extended temperature devices with minimum order requirements.*

ColdFire Processors

Device No.	Package	Speeds	Rev	Device Name	Temp** (-40 to +85°C)**	SOQ	MPQ	POQ	BRICK	Description
MCF5102	144-Lead PV	16, 20, 25, 33	B	Embedded 68K/ColdFire MPU		0	60	240		ColdFire microprocessor designed for cost-sensitive embedded control applications. In addition to executing ColdFire code, this first family member is designed with additional capabilities that allow it to execute existing M680x0 code. Processor includes on-chip instruction/data caches (2K/1K respectively).
						For PV sample order—SPAK5102PVXXB				
XCF5202	100-Lead PU	16, 25, 33	A	Embedded 68K/ColdFire MPU	CPU25A	0	84	420		ColdFire microprocessor designed for cost-sensitive embedded control applications. This member features a 2K unified cache.
						For PU sample order—SPAK5202PUXXA				
MCF5204	100-Lead PU	16, 25, 33	A	Embedded Integrated 68K/ColdFire MPU	CPU25A	0	84	84		ColdFire microprocessor designed for cost-sensitive embedded control applications with UART, 2 timers.
						For PU sample order—SPAK5204PUXXA				
MCF5206	160-Lead FT	16, 25, 33		Embedded Integrated 68K/ColdFire MPU	CFT16 CFT25	0	24	120		ColdFire microprocessor designed for cost-sensitive embedded control applications with UART, 2 timers, DRAM controller.
						For FT sample order—SPAK5206FTXX				
XCF5206e	160-Lead FT	40, 54		Embedded Integrated 68K/ColdFire MPU	CFT40	24	24	120		Enhanced, pin-compatible version of 5206 with larger caches and SRAM, 2 UARTs, 2 timers, DMA, MAC, HW Divide. 3.3V with 5V-tolerant I/O.
						For sample order - SPAK5206EFTXX, SPAK5206ECFT40				
XCF5307	208-Lead FT	66, 90		Embedded Integrated 68K/ColdFire MPU	CFT66	0	24	120		ColdFire Version 3 microprocessor with Multiply-Accumulate (MAC) unit, SDRAM Controller, DMA Controller, 2 UARTs, and 2 timers.
						For FT sample order - SPAK5307FTXX				

* Not recommended for new designs. ** *Extended temperature devices with minimum order requirements.*

End-of-Life Devices

Device	Last Buy	Last Ship	Replacement
MPC604R	1/21/00	7/21/00	MPC740, MPC750, PowerPC G4
MC68349 MC68330 MC68330V	6/30/99 6/30/99 6/30/99	4/30/00 4/30/00 4/30/00	MCF5206e, MCF5307 MCF5206e, MCF5307 MCF5206e, MCF5307

Timing Solutions

Device No.	Description	Output Level	Max. Output to Output Skew*	Max. Output (MHz)	Q Output	Q' Output	Packages	Status
MC88915FN55	Low Skew CMOS PLL Clock Driver	CMOS	0.5	13.75, 27.5, 55	7	1	28 PLCC	NOW
MC88915FN70	Low Skew CMOS PLL Clock Driver	CMOS	0.5	17.5, 35, 70	7	1	28 PLCC	NOW
MC88915T	Low Skew CMOS PLL Clock Drivers, 3-State	CMOS	0.5	33, 66, 133, 160	7	1	28 PLCC	NOW
MC88916	Low Skew CMOS PLL Clock Driver With Processor Reset	CMOS	0.5	20, 40, 80	5	1	20 SOIC	NOW
MC88920	Low Skew CMOS PLL Clock Driver With Power Down/Up	CMOS	0.5	12.5, 25, 50	5	1	20 SOIC	NOW
MC88921	Low Skew CMOS PLL Clock Driver With Power Down/Up	CMOS	0.5	80	2	1	20 SOIC	NOW
MC88LV915T	Low Voltage Low Skew CMOS PLL Clock Driver 3-State	LVCMOS	0.5	100	7	1	28 PLCC	NOW
MC88LV926	Low Skew CMOS PLL 68060 Clock Driver	LVCMOS	0.5	66	4	1	20 SOIC	NOW
MPC903/904/905	1:6 PCI Clock Generator/Fanout Buffer	LVCMOS	0.4	66	6	—	16 SOIC	NOW
MPC930/931	Low Voltage PLL Clock Driver	LVCMOS	0.5	125	5	—	32 LQFP	NOW
MPC932	Low Voltage PLL Clock Driver	LVCMOS	0.6	120	6	—	32 LQFP	NOW
MPC940L	Low Voltage 1:18 Clock Distribution Chip	LVCMOS	0.25	200	18	—	32 LQFP	NOW
MPC941L	Low Voltage 1:27 Clock Distribution Chip	LVCMOS	0.25	200	27	—	52 LQFP	4Q99
MPC947	Low Voltage 1:9 Clock Distribution Chip	LVCMOS	0.5	100	9	—	32 LQFP	NOW
MPC948	Low Voltage 1:12 PECL To CMOS Clock Driver	LVCMOS	0.35	150	12	—	32 LQFP	NOW
MPC948L	Low Voltage 1:12 PECL To CMOS Clock Driver	LVCMOS	0.35	150	12	—	32 LQFP	NOW
MPC949	Low Voltage 1:15 PECL To CMOS Clock Driver	LVCMOS	0.35	150	15	—	52 LQFP	NOW
MPC950/951	Low Voltage PLL Clock Driver	LVCMOS	0.35	200	9	—	32 TQFP	NOW
MPC952	Low Voltage PLL Clock Driver	LVCMOS	0.35	180	11	—	32 TQFP	NOW
MPC953	Low Skew PLL Zero Delay Buffer	LVCMOS	0.15	120	9	—	32 LQFP	NOW
MPC954	1:10 SDRAM Zero Delay Buffer	LVCMOS	.20	100	10	—	24 TSSOP	3Q99
MPC972/973	Low Voltage PLL Clock Driver	LVCMOS	0.35	180	14	—	52 TQFP	NOW
MPC974	Low Voltage PLL Clock Driver	LVCMOS	0.35	125	15	—	52 LQFP	NOW
MPC980	Dual 3.3V Clock Generator	LVCMOS	0.5	66	10	—	52 LQFP	NOW
MPC990/991	Low Voltage PLL Clock Driver	ECL/PECL	0.1	400	diff 14/pairs	—	52 TQFP	NOW
MPC992	Low Voltage PECL PLL Clock Driver	ECL/PECL	0.1	100	diff 7/pairs	—	32 LQFP	NOW
MPC993	Dynamic Switch PLL Clock Driver	LVPECL	.10	240	diff 5/pairs	—	32 TQFP	NOW
MPC996	Low Voltage PLL	ECLPECL	—	350	12	—	32 TQFP	3Q99
MPC9109	1:18 LVCMOS Fanout Buffer	LVCMOS	.20	100	18	—	32 TQFP	NOW
MPC9120	1:10 LVCMOS Fanout Buffer — Bx Intel Mobile	LVCMOS	.25	100	10	—	28 SSOP	Planned
MPC9121	PC Clock Generator — Bx Intel Mobile	—	—	—	—	—	—	NOW
MPC9140	1:18 LVCMOS Fanout Buffer — Bx Intel Desktop	LVCMOS	.25	100	18	—	48 SSOP	NOW
MC12429	High Frequency PLL Clock Generator	LVPECL	—	400	diff 1/pair	—	28 PLCC	NOW
MC12430	High Frequency PLL Clock Generator	LVPECL	—	800	diff 1/pair	—	28 PLCC	NOW
MC12439	High Frequency PLL Clock Generator	LVPECL	—	800	diff 1/pair	—	28 PLCC	NOW
MPC911	Low Voltage 1:9 Differential ECL/HSTL to HSTL Clock Driver	HSTL	0.05	200	9	9	28 PLCC	NOW
MPC9100	Low voltage Dual PLL Clock Driver	LVCMOS	—	14, 31, 45	3	—	32 LQFP	NOW
XC100EP111	Low Voltage 1:10 Diff ECL/PECL/HSTL Clock Driver	LVPECL	0.035	1500	diff 10/pairs	—	32 LQFP	MC 9/99
XC100EP210	Low Voltage 1:5 Diff ECL/PECL Clock Driver	LVPECL	0.035	1500	diff 5/pairs	—	32 LQFP	MC 9/99
PC100EP221	Low Voltage 1:20 Diff ECL/PECL Clock Driver	LVPECL	0.05	1500	diff 20/pairs	—	52 LQFP	Planned
PC100EP223	Low Voltage 1:22 Diff PECL/HSTL Clock Driver	LVPECL	0.05	250	diff 22/pairs	—	64 LQFP	MC 9/99

Late Write RAMs (Synchronous)

Category	Organization	V_{DD}	Device No.	Pin Count	Package	Speeds	Prod. Status	Description
8M	512K x 18	2.5V - 3.3V	MCM63L918A	119	(FC) FC-PBGA	3.8 / 4.0 / 4.2 / 4.5 ns Latency	Now	Register/Latch. Extended HSTL I/Os
			MCM63R918	119	(RS) FC-CBGA (FC) FC-PBGA	3.0 / 3.3 / 3.7 / 4.0 / 4.4 / 5.0 ns	Now	Register/Register. HSTL I/Os
			MCM63R918A	119	(FC) FC-PBGA	3.0 / 3.3 / 3.7 / 4.0 / 4.4 ns	Now	Register/Register. Extended HSTL I/Os
	256K x 36	2.5V - 3.3V	MCM63L836A	119	(FC) FC-PBGA	3.8 / 4.0 / 4.2 / 4.5 ns Latency	Now	Register/Latch. Extended HSTL I/Os
			MCM63R836	119	(RS) FC-CBGA (FC) FC-PBGA	3.0 / 3.3 / 3.7 / 4.0 / 4.4 / 5.0 ns	Now	Register/Register. HSTL I/Os
			MCM63R836A	119	(FC) FC-PBGA	3.0 / 3.3 / 3.7 / 4.0 / 4.4 ns	Now	Register/Register. Extended HSTL I/Os
4M	256K x 18	2.5V - 3.3V	MCM63R818	119	(FC) FC-PBGA	3.0 / 3.3 / 3.7 / 4.0 ns	Now	Register/Register. HSTL I/Os
		3.3V	MCM69R819A	119	(ZP) PBGA	5.0 / 6.0 / 7.0 ns	Now	Register/Register. LVTTL I/Os. Not rec. for new designs.
			MCM69L819A	119	(ZP) PBGA	8.5 / 9.0 / 9.5 ns Latency	Now	Register/Latch. LVTTL I/Os. Not rec. for new designs.
			MCM69R818C	119	(ZP) PBGA	4.0 / 4.4 / 5.0 / 6.0 / 7.0 ns	Now	Register/Register. HSTL I/Os. Process shrink.
			MCM69L818C	119	(ZP) PBGA	5.5 / 6.5 / 7.5 / 8.5 ns Latency	Contact Factory	Register/Latch. HSTL I/Os. Not recommended for new designs.
			MCM69R820C	119	(ZP) PBGA	4.0 / 4.4 / 5.0 / 6.0 / 7.0 ns	Now	Register/Register. Process shrink. 2.5 V I/Os.
	128K x 36	2.5V - 3.3V	MCM63R736	119	(FC) FC-PBGA	3.0 / 3.3 / 3.7 / 4.0 ns	Now	Register/Register. HSTL I/Os
		3.3V	MCM69R737A	119	(ZP) PBGA	5.0 / 6.0 / 7.0 ns	Now	Register/Register. LVTTL I/Os. Not rec. for new designs.
			MCM69L737A	119	(ZP) PBGA	8.5 / 9.0 / 9.5 ns Latency	Now	Register/Latch. LVTTL I/Os. Not rec. for new designs.
			MCM69R736C	119	(ZP) PBGA	4.0 / 4.4 / 5.0 / 6.0 / 7.0 ns	Now	Register/Register. HSTL I/Os. Process shrink.
			MCM69L736C	119	(ZP) PBGA	5.5 / 6.5 / 7.5 / 8.5 ns Latency	Contact Factory	Register/Latch. HSTL I/Os. Not recommended for new designs.
			MCM69R738C	119	(ZP) PBGA	4.0 / 4.4 / 5.0 / 6.0 / 7.0 ns	Now	Register/Register. Process shrink. 2.5 V I/Os.
1M	64K x 18	3.3V	MCM69R618	119	(ZP) PBGA	4.4 / 5.0 / 6.0 / 7.0 ns	Now	Register/Register. HSTL I/Os. Not rec. for new designs.
	32K x 36	3.3V	MCM69R536	119	(ZP) PBGA	4.4 / 5.0 / 6.0 / 7.0 ns	Now	Register/Register. HSTL I/Os. Not rec. for new designs.

Double Data Rate (DDR) RAMs

8M	512K x 18	2.5V	MCM64E918	153	(FC) FC-PBGA	3.0 / 3.3 / 4.0 / 4.4 ns	Now	Data Rate 2x clock rate.
	256K x 36	2.5V	MCM64E836	153	(FC) FC-PBGA	3.0 / 3.3 / 4.0 / 4.4 ns	Now	Data Rate 2x clock rate.

BurstRAMs (Synchronous)

Category	Organization	V_{DD}	Device No.	Pin Count	Package	Speeds	Prod. Status	Description
8M	512K x 18	3.3V	MCM63B919	100 119	(TQ) TQFP (ZP) PBGA	7.0 / 8.0 / 8.5 ns Latency	1Q00	2.5 V/3.3 V I/O flow–through or pipelined (225 / 200 / 166 MHz).
	256K x 36	3.3V	MCM63B837	100 119	(TQ) TQFP (ZP) PBGA	7.0 / 8.0 / 8.5 ns Latency	1Q00	2.5 V/3.3 V I/O flow–through or pipelined (225 / 200 / 166 MHz).
4M	256K x 18	3.3V	MCM69P819	100 119	(TQ) TQFP (ZP) PBGA	166 / 150 / 133 MHz	Now	2.5 V/3.3 V I/O pipelined.
			MCM69F819	100 119	(TQ) TQFP (ZP) PBGA	7.5 / 8.0 / 8.5 / 11.0 ns	Now	2.5 V/3.3 V I/O flow–through.
			MCM63B819A	100 119	(TQ) TQFP (ZP) PBGA	6.5 / 7.0 / 8.0 ns Latency	4Q99	2.5 V/3.3 V I/O flow–through or pipelined (250 / 225 / 200 MHz).
		2.5V	MCM64B819A	100 119	(TQ) TQFP (ZP) PBGA	6.5 / 7.0 / 8.0 ns Latency	4Q99	2.5 V I/O flow–through or pipelined (250 / 225 / 200 MHz).
		1.8V	MCM65B819A	100 119	(TQ) TQFP (ZP) PBGA	6.5 / 7.0 / 8.0 ns Latency	4Q99	1.8 V I/O flow–through or pipelined (250 / 225 / 200 MHz).

(4M continued on next page)

BurstRAMs (Synchronous) (Continued)

Category	Organization	V_{DD}	Device No.	Pin Count	Package	Speeds	Prod. Status	Description
4M (continued from previous page)	128K x 36	3.3V	MCM69P737	100 119	(TQ) TQFP (ZP) PBGA	200 / 183 / 166 / 150 / 133 MHz	Now	2.5 V/3.3 V I/O pipelined.
			MCM69F737	100 119	(TQ) TQFP (ZP) PBGA	7.5 / 8.0 / 8.5 / 11 ns	Now	2.5 V/3.3 V I/O flow–through.
			MCM63B737A	100 119	(TQ) TQFP (ZP) PBGA	6.5 / 7.0 / 8.0 ns Latency	4Q99	2.5 V/3.3 V I/O flow–through or pipelined (250 / 225 / 200 MHz).
		2.5V	MCM64B737A	100 119	(TQ) TQFP (ZP) PBGA	6.5 / 7.0 / 8.0 ns Latency	4Q99	2.5 V I/O flow–through or pipelined (250 / 225 / 200 MHz).
		1.8V	MCM65B737A	100 119	(TQ) TQFP (ZP) PBGA	6.5 / 7.0 / 8.0 ns Latency	4Q99	1.8 V I/O flow–through or pipelined (250 / 225 / 200 MHz).
	128K x 32	3.3V	MCM63P733A	100	(TQ) TQFP	150 / 133 / 117 / 100 / 90 MHz	Now	2.5 V/3.3 V I/O pipelined.
			MCM63F733A	100	(TQ) TQFP	8.5 / 9.0 / 10.0 / 11.0 ns	Now	2.5 V/3.3 V I/O flow–through.
			SCM63F733A	100	(TQ) TQFP	10.0 / 11.0 ns	Now	2.5 V/3.3 V I/O flow–through, – 40° to + 85°C.
			MCM63B733A	100	(TQ) TQFP	6.5 / 7.0 / 8.0 ns Latency	4Q99	2.5 V/3.3 V I/O flow–through or pipelined (250 / 225 / 200 MHz).
		2.5V	MCM64B733A	100	(TQ) TQFP	6.5 / 7.0 / 8.0 ns Latency	4Q99	2.5 V I/O flow–through or pipelined (250 / 225 / 200 MHz).
		1.8V	MCM65B733A	100	(TQ) TQFP	6.5 / 7.0 / 8.0 ns Latency	4Q99	1.8 V I/O flow–through or pipelined (250 / 225 / 200 MHz).
1M	64K x 18	3.3V	MCM69F618C	100	(TQ) TQFP	7.5 / 8.0 / 8.5 / 9.0 /10.0 / 12.0 ns	Now	Flow–through BurstRAM, 5 V tolerant on all pins.
			MCM69P618C	100	(TQ) TQFP	133 / 125 / 100 / 83 / 75 MHz	Now	Pipelined BurstRAM, 5 V tolerant on all pins.
		5V	MCM67B618A	52	(FN) PLCC	8.5 / 9.0 / 10.0 / 12.0 ns	Now	Flow–through BurstRAM for Pentium, MIPS.
			MCM67M618A	52	(FN) PLCC	9.0 / 10.0 / 12.0 ns	Now	Flow–through BurstRAM for PowerPC.
	32K x 36	3.3V	MCM69F536C	100	(TQ) TQFP	7.5 / 8.0 / 8.5 / 9.0 /10.0 / 12.0 ns	Now	Flow–through BurstRAM, 5 V tolerant on all pins.
			MCM69P536C	100	(TQ) TQFP	133 / 125 / 100 / 83 / 75 MHz	Now	Pipelined BurstRAM, 5 V tolerant on all pins.

ZBT™ (Zero Bus Turnaround™) RAMs (Synchronous)

Category	Organization	V_{DD}	Device No.	Pin Count	Package	Speeds	Prod. Status	Description
8M	512K x 18	3.3V	MCM63Z918	100 119	(TQ) TQFP (ZP) PBGA	7.0 / 8.0 / 8.5 ns Latency	1Q00	Pipelined or flow–through with back–to–back read/write write/read cycles. Sampling 4Q99.
			MCM63Z916	100 119	(TQ) TQFP (ZP) PBGA	10.0 / 11.0 / 15.0 ns Latency	1Q00	Pipelined or flow–through with back–to–back read/write write/read cycles. Sampling 4Q99.
		2.5V	MCM64Z918	100 119	(TQ) TQFP (ZP) PBGA	7.0 / 8.0 / 8.5 ns Latency	1Q00	Pipelined or flow–through with back–to–back read/write write/read cycles. Sampling 4Q99.
			MCM64Z916	100 119	(TQ) TQFP (ZP) PBGA	10.0 / 11.0 / 15.0 ns Latency	1Q00	Pipelined or flow–through with back–to–back read/write write/read cycles. Sampling 4Q99.
	256K x 36	3.3V	MCM63Z836	100 119	(TQ) TQFP (ZP) PBGA	7.0 / 8.0 / 8.5 ns Latency	1Q00	Pipelined or flow–through with back–to–back read/write write/read cycles. Sampling 4Q99.
			MCM63Z834	100 119	(TQ) TQFP (ZP) PBGA	10.0 / 11.0 / 15.0 ns Latency	1Q00	Pipelined or flow–through with back–to–back read/write write/read cycles. Sampling 4Q99.
		2.5V	MCM64Z836	100 119	(TQ) TQFP (ZP) PBGA	7.0 / 8.0 / 8.5 ns Latency	1Q00	Pipelined or flow–through with back–to–back read/write write/read cycles. Sampling 4Q99.
			MCM64Z834	100 119	(TQ) TQFP (ZP) PBGA	10.0 / 11.0 / 15.0 ns Latency	1Q00	Pipelined or flow–through with back–to–back read/write write/read cycles. Sampling 4Q99.
4M	256K x 18	3.3V	MCM63Z818	100	(TQ) TQFP	143 / 133 / 100 MHz	Now	Pipelined with back–to–back read/write write/read cycles.
			MCM63Z819	100	(TQ) TQFP	10.0 / 11.0 / 15.0 ns	Now	Flow–through with back–to–back read/write write/read cycles.
	128K x 36	3.3V	MCM63Z736	100	(TQ) TQFP	143 / 133 / 100 MHz	Now	Pipelined with back–to–back read/write write/read cycles.
			MCM63Z737	100	(TQ) TQFP	10.0 / 11.0 / 15.0 ns	Now	Flow–through with back–to–back read/write write/read cycles.

CAMs (Content Addressable Memory)

CAMs	16K x 64	3.3V	MCM69C432	100	(TQ) TQFP	180 ns Match Time	Now	Content addressable memory for communication applications. 16K connections.
	4K x 64	3.3V	MCM69C232	100	(TQ) TQFP	160 ns Match Time	Now	Content addressable memory for communication applications. 4K connections.

Tag RAMs

Tag RAMs	64K x 18	3.3V	MCM69T618	100	(TQ) TQFP	5 ns	Now	100 MHz Data/Tag RAM. For MIPS R5000, Pentium Pro, and graphics accelerators applications. Not recommended for new designs.

Integrated Cache Solutions

Integrated Cache Solutions	32K x 72	3.3V	MPC2605	241	(ZP) PBGA	83 / 66 MHz	Now	Integrated L2 cache for PowerPC processors.One component for 256KB, two for 512KB, and four for 1MB L2 cache solution.

ZBT™ (Zero Bus Turnaround™) RAMs (Synchronous) (Continued)

Separate and Dual I/O Devices

Category	Organization	V_{DD}	Device No.	Pin Count	Package	Speeds	Prod. Status	Description
4M	512K x 9	5V	MCM67Q909	86	(ZP) PBGA	10.0 / 12.0 ns	Now	General synchronous separate I/O with write pass through. 3.3 V output levels. Not recommended for new designs.
	128K x 36	3.3V	MCM63D736	176	(TQ) TQFP	100 / 133 MHz	1Q00	Dual address, Dual I/O NetRAM pipelined per port chip enable.
1M	128K x 9	5V	MCM67Q709A	86	(ZP) PBGA	10.0 ns	Now	General synchronous separate I/O with write pass through. 3.3 V output levels. Not recommended for new designs.
	32K x 36	3.3V	MCM69D536	176	(TQ) TQFP	6.0 / 8.0 ns	Now	Dual address, dual I/O. NetRAM.
	64K x 18	3.3V	MCM69D618	100	(TQ) TQFP	6.0 / 8.0 ns	Now	Dual address, dual I/O. NetRAM.

Asynchronous RAMs

Category	Organization	V_{DD}	Device No.	Pin Count	Package and Width in mils	Speeds	Prod. Status	Description
4M	512K x 8	3.3V	MCM6946	36 44	400 (YJ) SOJ (TS) TSOP	10.0 / 12.0 / 15.0 ns	Now	Not recommended for new designs.
	256K x 16	3.3V	MCM6343	44	400 (YJ) SOJ (TS) TSOP	11.0 / 12.0 / 15.0 ns	Now	Not recommended for new designs.
	1M x 4	3.3V	MCM6949	32	400 (YJ) SOJ	10.0 / 12.0 / 15.0 ns	Now	Not recommended for new designs.
3M	128K x 24	3.3V	MCM6341	119	(ZP) PBGA	10.0 / 11.0 / 12.0 / 15.0 ns	Now	DSP applications for base stations and other communication applications. Industrial temperature.
1M	64K x 18	5V	MCM67A618A	52	(FN) PLCC	10.0 / 12.0 / 15.0 ns	Now	General asynchronous, latched address and data.
	128K x 8	3.3V	MCM6926A	32	400 (WJ) SOJ	8.0 / 10.0 / 12.0 / 15.0 ns	Now	EOL Status – Last Purchase January 2000.
	256K x 4	3.3V	MCM6929A	32	400 (WJ) SOJ	8.0 / 10.0 / 12.0 / 15.0 ns	Now	EOL Status – Last Purchase January 2000.

Documentation

To download documentation for Motorola PowerPC 1xx, 6xx and 7xx CPUs:
http://motorola.com/SPS/PowerPC/teksupport/teklibrary/.

To download documentation for MPC8xx, MPC8xxx, and 68K integrated communications controllers:
http://motorola.com/SPS/RISC/netcomm/docs/pubs/.

To download documentation for 68K/ColdFire processors:
http://motorola.com/SPS/HPESD/prod/docframe/docs_frame.html.

To download documentation for Motorola timing solutions:
http://www.design-net.com/books/html/br1333_index.html.

For printed documentation for NSD and PCSD devices:
http://www.design-net.com/home2/lit_ord.html.

Development Tools

For information on third-party tools for PowerPC 1xx, 6xx and 7xx CPUs:
http://motorola.com/PowerPC/3rdparty/.

To download freeware tools for MPC8xx, MPC8xxx, and 68K integrated communications controllers, point your browser to:
http://motorola.com/SPS/RISC/netcomm/tools/.

For information on third-party tools for 68K/ColdFire processors:
http://motorola.com/SPS/HPESD/devprg/frames/mem_frame.html.

World Wide Web

Motorola PowerPC home page:
http://motorola.com/PowerPC/

PowerPC 100, 600 and 700 series CPUs:
http://motorola.com/PowerPC/products/semiconductor/chips.html

AltiVec™ Technology
http://motorola.com/AltiVec/

Networking & Communications (NetComm) home page:
http://motorola.com/netcomm/

MPC801, MPC821, MPC823, MPC850, MPC860, MPC8260 and 68K
communications controllers:
http://www.mot.com/SPS/RISC/netcomm/prod/index.html

68K/ColdFire Processors home page:
http://motorola.com/ColdFire/

Motorola timing solutions home page:
http://www.design-net.com/logic/

Motorola FSRAM products home page:
http://motorola.com/fastrams/

SPS Customer Response Center:
http://www.design-net.com/home2/cust_serv.html

General product information on other devices:
http://motorola.com/SPS/General/chips.html

Information on other Motorola products:
http://motorola.com/General/prodport.html

Comments on other Motorola products:
http://motorola.com/cgi-bin/web-comments2

Processor Part Number Schemes

PowerPC 1xx, 6xx & 7xx Processor Part Numbering Scheme

MPC | 603 | R | RX | 300 | L | C

Product Code
PPC Sample
XPC XC qualified
MPC Qualified
PPE EC-Sample
XPE XC qualified EC CPU
MPE Qualified EC CPU

100, 600, or 700 Series Device
(106, 603, 740, 750)

Part/Module Modifier
A 106/740/750 Alpha (original)
E 603 Enhanced Performance
P 603/740/750 Enhanced and Lower Voltage
R 603e in HiP3 process

Package
(see page 2)

Frequency
2-3 digits

Application Modifier
Bus Ratio
C 2:1
D 5:2
L Full spec all modes
Temp/Spec
P 65 °C, 2.05 V
R 105°, 2.05 V
T ext. temp. (-40° to 105° Tj)

Revision

MPC8xx PowerPC Processor Part Numbering Scheme

MPC | 860 | EN | C | ZP | 66 | L

Product Code
PPC Prototype Sample
KXPC Sample Pack (2-10)
XPC Engineering Production
MPC Qualified

800 Series Device
(801, 850, 860)

Part/Module Modifier
DC Dual Channel (Enet on SCC1)
DE Dual Channel (w/Enet)
DH Dual Channel (w/Enet, Multi-HDLC)
None Four Channel (no Enet)
EN Four Channel (w/Enet)
MH Four Channel (w/Enet, Multi-HDLC)
SC Single Ethernet
SR Four Channel (w/Enet, Multi-HDLC, ATM)
T Four Channel (10/100, Multi-HDLC)

Temp. Range
— 0 to +95 Tj
C -40 to +95 Tj

Package
(see page 2)

Frequency
2 digits

Die Mask Revision

MPC8xxx PowerPC Processor Part Numbering Scheme

XPC | 8240 | L | ZU | 200 | C

Product Code
PPC Prototype Sample
KXPC Sample Pack (2-10)
XPC Engineering Production
MPC Qualified

8xxx Series Device
(8240, 8260)

Core Volt/Temp Spec (opt.)
— 0 to +95 Tj
C -40 to +95 Tj
L 105°C Tj
P 70°C Tj
T ext. temp. (-40° to 105° Tj)

Package
(see page 2)

Frequency
2-3 digits

Die Mask Revision

680x0 Series Processor Part Numbering Scheme

MC68 | EC | 000 | C | FN | 16 | V | B

Product Code
MC68 Full Spec. Product
XC68 Eng. Product
SPAK Sample Pack (2-10)

Part/Module Modifier
— Full CPU
EC No FPU or MMU
HC HCMOS
LC No FPU
SEC Static Embbeded

683xx Series Device
(000, 020, 040, 060)

Temp. Range
— 0 to +70
C -40 to +85

Package
(see page 2)

Frequency
2 digits

Voltage
— 5 volts
V 3.3 volts

Die Mask Revision

683xx Series Processor Part Numbering Scheme

MC68 | EN | 302 | C | PV | 25 | V | B

Product Code
MC68 Full Spec. Product
XC68 Eng. Product
PC68 Eng. Sample
SPAK Sample Pack (2-10)

Part/Module Modifier
DP Data Pump
EC Embedded Controller
EN Ethernet
LC Low Cost
MH Multi-HDLC
PM PCMCIA
QH Quad HDLC
SC Passive ISDN

683xx Series Device
(302, 306, 307, 330, 340, 360)

Temp. Range
— 0 to +70
I 0 to +80
C -40 to +85

Package
(see page 2)

Frequency
2 digits

Voltage
— 5 volts
V 3.3 volts

Die Mask Revision

ColdFire Processor Part Numbering Scheme

MCF | 5206 | E | C | FT | 33 | A

Product Code
MCF Full Spec. Product
XCF Eng. Product
PCF Eng. Sample
SPAK Sample Pack (2-10)

ColdFire Device
(5102, 5202, 5204, 5206, 5307)

Part/Module Modifier
E Enhanced

Temp. Range
— 0 to +70
C -40 to +85

Package
(see page 2)

Frequency
2 digits

Die Mask Revision

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