High Performance 68 K Integrated Data Communication Processors

MC68302, Integrated Multiprotocol Processor

The 68302 is a three channel communications device that may be configured to support a number of popular industry interfaces, including those for the Integrated Services Digital Network (ISDN) basic rate and terminal adapter applications. Through a combination of architectural and programmable features concurrent operation of different protocols (HDLC/SDLC, UART, BISYNC, DDCMP, or transparent modes) can easily be achieved. The 68302 contains on-chip DMA, RAM, timers, I/O, chip select and a wait state interrupt controller.

Mfr.'s Type		Operating Frequency (MHz)	Core Processor	DMA	Serial Processor	Time Processor Unit	Flash EEPROM	Serial I/O	Timers	A/D Converter	SRAM	DRAM Controller	Glue Logic (SIM)
132 Lead PQ (Gull Wing)	132 Lead PGA (Gold Lead)												
MC68302FC16C	MC68302RC16C	16	68000	Yes	Yes	N/A	N/A	Yes	1	N/A	1 K	N/A	Yes
—	MC68302RC20C	20	68000	Yes	Yes	N/A	N/A	Yes	1	N/A	1 K	N/A	Yes
MC68302FC25C	MC68302RC25C	25	68000	Yes	Yes	N/A	N/A	Yes	1	N/A	1 K	N/A	Yes

One-Time Programmable (OTP) Microcontrollers

Mfr.'s Type				ROM (Bytes)	RAM (Bytes)	EEPROM (Bytes)	Timer	Serial	A/D	PWM	I/O	COP	Comments	Temperature Range (°C)	No. of Leads
SOIC	QFP	PLCC	PDIP												
—	—	MC68HC705B16CFN	—	15.0 K	352	255	16-Bit: (2 IC, 2 OC)	SCI	8-Ch. (8-Bit)	2-Ch. (8-Bit)	32 I/O, 2 O	Yes	On-Chip Charge Pump EEPROM Write Protect	–40 to +85	64/52
—	MC68HC705C8ACFB*	MC68HC705C8ACFN	MC68HC705C8ACP	8.0 K	304	N/A	16-Bit (1 IC, 1 OC)	SPI, SCI	N/A	N/A	24 I/O, 7 I	Yes	Mask Option Pullups (8 Pins) KBI ,(8 Pins), 1 High Current Pin (20 mA Sink)	–40 to +85	42/44/44/40
—	—	MC68HC705C9ACFN	MC68HC705C9ACP	16.0 K	352	N/A	16-Bit (1 IC, 1 OC)	SPI, SCI	N/A	N/A	31 I/O	Yes	—	–40 to +85	44/40
MC68HC705J1ACDW	—	—	MC68HC705J1ACP	1.2 K	64	N/A	MFT, RTI	N/A	N/A	N/A	14 I/O	Yes	KBI (4 Pins), EPROM Security 4 High Current Pins, Programmable Pulldowns (14 Pins)	0 to +70	28
XC68HC705JJ7CDW	—	—	—	6.0 K +64-Bit PEP	224	N/A	16-Bit: (1 IC, 1 OC), MFT, RTI	SIOP	†	N/A	14 I/O	Yes	2 Voltage Comparators Used with Timer to Create A/D (12-Bit Res.), KBI (4 Pins) (12-Bit Res.), Programmable Pulldowns (14 Pins), 6 High Current Pins	0 to +70	20
XC68HC705JP7CDW	—	—	—	6.0 K +64-Bit PEP	224	N/A	16-Bit: (1 IC, 1 OC), MFT, RTI	SIOP	†	N/A	22 I/O	Yes	2 Voltage Comparators Used with Timer to Create A/D (12-Bit Res.), KBI (4 Pins), Programmable Pulldowns (14 Pins), 6 High Current Pins	0 to +70	28

*QFP (10 × 10) Package. †See Comments. PWM=Pulse Width Modulation. I/O=Bidirectional Input and Output Port Pins. COP=Computer Operating Properly (Watch Dog Timer). IC=Input Capture. OC=Output Compare. MFT=Multi Function Timer. RTC=Real Time Clock. RTI= Real Time Interrupt. SCI=Serial Communications Interface. SPI=Serial Peripheral Interface. SIOP=Simple Serial I/O Port. I=Input Only Port Pins. O=Output Only Port Pins. KBI=Keyboard Interrupt.

Advanced HCMOS Microcontrollers

68HC11A, 8-Bit

Mfr.'s Type	ROM (Bytes)	RAM (Bytes)	EEPROM (Bytes)	Timer	Serial	A/D	I/O	Bus Speed (MHz)	Bus Types	Operating Voltage (V)	Comments	Temperature Range (°C)	No. of Leads
PLCC													
MC68HC11F1CFN3	0	1 K	512	16-Bit: 3 or 4 IC , 4 or 5 OC, RTI, WDOG, Pulse Accumulator	SPI, SCI	Yes	30	0 to 3.0	Non-Mux	4.5 to 5.5	Non-Mux Bus Chip Selects, 4 EEPROM Block Protects	–40 to +85	68

68HC711D, One Time Programmable 8-Bit

Mfr.'s Type		EPROM (Bytes)	RAM (Bytes)	EEPROM (Bytes)	Timer	Serial	A/D	I/O	Bus Speed (MHz)	Bus Types	Operating Voltage (V)	Comments	Temperature Range (°C)	No. of Leads
44 Lead PLCC	40 Lead PDIP													
MC68HC711D3CFN2	MC68HC711D3CP2	4 K	192	0	16-Bit: 3 or 4 IC, 4 or 5 OC, RTI, WDOG, Pulse Accumulator	SPI, SCI	No	32	0 to 2.0	Mux	4.5 to 5.5	Mux Bus	–40 to +85	44/44/40

68HC711E, One Time Programmable 8-Bit

MC68HC711E9CFN2	—	12 K	512	512	16-Bit: 3 or 4 IC, 4 or 5 OC, RTI, WDOG, Pulse Accumulator	SPI, SCI	Yes	38	0 to 2.0	Mux	4.5 to 5.5	68HC24 PRU, Mux Bus, 4 EEPROM Block Protects	–40 to +85	52

68HC711L, One Time Programmable 8-Bit

MC68HC711L6CFN2	—	16 K	512	512	16-Bit: 3 or 4 IC , 4 or 5 OC, RTI, WDOG, Pulse Accumulator	SPI, SCI	Yes	46	0 to 2.0	Mux	4.5 to 5.5	68HC24 PRU, Mux Bus, 4 EEPROM Block Protects	–40 to +85	68

68HC811E and 68SEC811E, 8-Bit

MC68HC811E2CFN2	—	0	256	2 K	8-Bit: 3 or 4 IC , 4 or 5 OC, RTI, WDOG, Pulse Accumulator	SPI, SCI	Yes	38	0 to 2.0	Mux	4.5 to 5.5	68HC24 PRU, Mux Bus, 4 EEPROM Block Protects	0 to +70	52/48
—	MC68SEC811E2P											Secured, 68HC24 PRU, Mux Bus, 4 EEPROM Block Protects	0 to +70	52/48

IC=Input Capture. OC=Output Capture. RTI=Real Time Interrupt. PRU=Port Replacement Unit. SCI=Serial Communication Interface. SCI+=Enhanced SCI. SPI=Serial Peripheral Interface. A/D= Analog to Digital Converter.WDOG=Watchdog Timer. OC=Output Capture.

68HC16Z, 16-Bit Advanced Microcontrollers

Mfr.'s Type		ROM (Bytes)	RAM (Bytes)	EEPROM (Bytes)	Timer	Serial	ADC	I/O	Clock Speed (MHz)	Modes	Operating Voltage (V)	Comments	Temperature Range (°C)	No. of Leads
TQFP	PQFP													
MC68HC16Z1CPV16	MC68HC16Z1CFC16	0	1 K	0	3 or 4 IC, 4 or 5 OC, 2 PWM, PIT, WDOG	QSPI, SCI	10-Bit	46	0 to 16.78	External Bus, Background Debug	4.5 to 5.5	External Bus, 9 Chip Selects, Synthesized Clock, 68HC33 PRU	–40 to +85	144/132

ADC=8/10-Bit Analog to Digital Converter Module. PIT=Programmable Interrupt Timer. IC=Input Capture. OC=Output Capture. PWM=Pulse Width Modulation. SCI=Serial Communication Interface.TPU=Time Processing Unit. DMA=Direct Memory Access. QSPI=Queued SPI. WDOG=Watchdog Timer.

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