

MN101C32G / CF32G

Type	MN101C32G / CF32G (under development)
ROM (×8-Bit)	128 K / 128 K (Flash)
RAM (×8-Bit)	4 096 / 4 096

Minimum Instruction Execution Time	Standard:	0.1 μs (at 2.7 V to 3.6 V, 20 MHz)*2 0.2 μs (at 2.3 V to 3.6 V, 10 MHz)*1,2 0.5 μs (at 1.8 V to 3.6 V, 4 MHz)*1,2 125 μs (at 1.8 V to 3.6 V, 32 kHz)*1,2
	Double speed:	0.1 μs (at 2.7 V to 3.6 V, 10 MHz)*2 0.2 μs (at 2.3 V to 3.6 V, 5 MHz)*1,2 0.5 μs (at 1.8 V to 3.6 V, 2 MHz)*1,2 62.5 μs (at 1.8 V to 3.6 V, 32 kHz)*1,2

*1 The limit for operation guarantee for low voltage flash EPROM built-in version is 2.3 V to 3.0 V.

*2 The limit for operation guarantee for high-speed flash EPROM built-in version is 2.7 V to 3.6 V.

Interrupts	<ul style="list-style-type: none"> • RESET • Watchdog • External 0 • External 1 • External 2 • External 3 • External 4 • Timer 0 • Timer 1 • Timer 2 • Timer 3 • Timer 4 • Timer 6 • Time Base • Serial 3 • Serial 1 • Serial 2 • Automatic Transfer finish • A/D Conversion finish • Timer 7 (2 systems) • Key Interrupts (8 lines)
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Timer Counter	Timer Counter 0 : 8-Bit × 1 (Square-Wave/8-Bit PWM Output, Event Count, Generation of Remote Control Carrier, Pulse Width Measurement)
	Clock Source . . . 1/2, 1/4 of System Clock, 1/1, 1/4, 1/16, 1/32, 1/64 of OSC Oscillation Clock, 1/1 of XI Oscillation Clock, External Clock Input
	Interrupt Source . . . Coincidence with Compare Register 0
	Timer Counter 1 : 8-Bit × 1 (Square-Wave Output, Event Count, Synchronous Output Event)
	Clock Source . . . 1/2, 1/8 of System Clock, 1/1, 1/4, 1/16, 1/64, 1/128 of OSC Oscillation Clock, 1/1 of XI Oscillation Clock, External Clock Input
	Interrupt Source . . . Coincidence with Compare Register 1
	Timer Counter 0, 1 can be cascade-connected.
	Timer Counter 2 : 8-Bit × 1 (Square-Wave/8-Bit PWM Output, Event Count, Synchronous Output Event, Pulse Width Measurement)
	Clock Source . . . 1/2, 1/4 of System Clock, 1/1, 1/4, 1/16, 1/32, 1/64 of OSC Oscillation Clock, 1/1 of XI Oscillation Clock, External Clock Input
	Interrupt Source . . . Coincidence with Compare Register 2
	Timer Counter 3 : 8-Bit × 1 (Square-Wave Output, Event Count, Generation of Remote Control Carrier)
	Clock Source . . . 1/2, 1/8 of System Clock, 1/1, 1/4, 1/16, 1/64, 1/128 of OSC Oscillation Clock, 1/1 of XI Oscillation Clock, External Clock Input
	Interrupt Source . . . Coincidence with Compare Register 3
	Timer Counter 2, 3 can be cascade-connected.
	Timer Counter 4 : 8-Bit × 1 (Square-Wave/8-Bit PWM Output, Event Count, Pulse Width Measurement, Serial 1 Baud Rate Timer)
	Clock Source . . . 1/2, 1/4 of System Clock, 1/1, 1/4, 1/16, 1/32, 1/64 of OSC Oscillation Clock, 1/1 of XI Oscillation Clock, 1/1 of External Clock Input
	Interrupt Source . . . Coincidence with Compare Register 4
	Timer Counter 6 : 8-Bit Freerun Timer
	Clock Source . . . 1/1 of System Clock, 1/1, 1/4096, 1/8192 of OSC Oscillation Clock, 1/1, 1/4096, 1/8192 of XI Oscillation Clock
	Interrupt Source . . . Coincidence with Compare Register 6

Timer Counter (Continue)	Timer Counter 7 : 16-Bit × 1 (Square-Wave/16-Bit PWM Output, Cycle / Duty continuous variable, Event Count, Synchronous Output Event, Pulse Width Measurement, Input Capture)	
	Clock Source	1/1, 1/2, 1/4, 1/16 of System Clock, 1/1, 1/2, 1/4, 1/16 of OSC Oscillation Clock, 1/1, 1/2, 1/4, 1/16 of External Clock Input
	Interrupt Source	Coincidence with Compare Register 7 (2 lines)
	Time Base Timer (One-Minute Count Setting)	
	Clock Source	..1/1 of OSC Oscillation Clock, 1/1 of XI Oscillation Clock
	Interrupt Source	1/128, 1/256, 1/512, 1/1024, 1/8192, 1/32768, of Clock Source
	Watchdog Timer	
	Interrupt Source	1/65536, 1/262144, 1/1048576 of System Clock
	DMA Controller (Automatic data transfer)	
	Max Transfer Cycles	255
Starting Factor	External Request, Various Types of Interrupt, Software	
Transfer Mode	1-Byte Transfer, Word Transfer, Burst Transfer	

Serial Interface	Serial 1 : 8-Bit × 1 (Synchronous Type/Simple UART[Half-Duplex])	
	Clock Source	1/2, 1/4 of System Clock Pulse Output of Timer Counter 4 1/2, 1/4, 1/16, 1/64 of OSC Oscillation Clock
	Serial 2 : 8-Bit × 1 (Synchronous Type)	
	Clock Source	1/2, 1/4 of System Clock Pulse Output of Timer Counter 3 1/2, 1/4, 1/16, 1/32 of OSC Oscillation Clock
	Serial 3 : 8-Bit × 1 (Synchronous Type/Simple I ² C)	
	Clock Source	1/2, 1/4 of System Clock Pulse Output of Timer Counter 3 1/2, 1/4, 1/16, 1/32 of OSC Oscillation Clock

I/O Pins	I/O	57	• Common use • Specified pull-up Resistor available • Input / Output selectable (bit unit)
	Input	12	• Common use • Specified pull-up Resistor available

A/D Inputs	10-Bit × 7ch (with S/H)
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Special Ports	Buzzer Output, Remote Control Carrier Signal Output, High-Current Drive Port
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Package	TQFP080-P-1212C *Pb Free
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Electrical Characteristics

Supply Current

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Operating Supply Current	IDD1	fosc = 10 MHz, VDD = 3 V			10	mA
	IDD2	fx = 4 MHz, VDD = 3 V			4	mA
Supply Current at STOP	IDD6	VDD = 3 V, Ta = 25 °C			2	µA
	IDD7	VDD = 3 V, Ta = -40 °C to +85 °C			20	µA

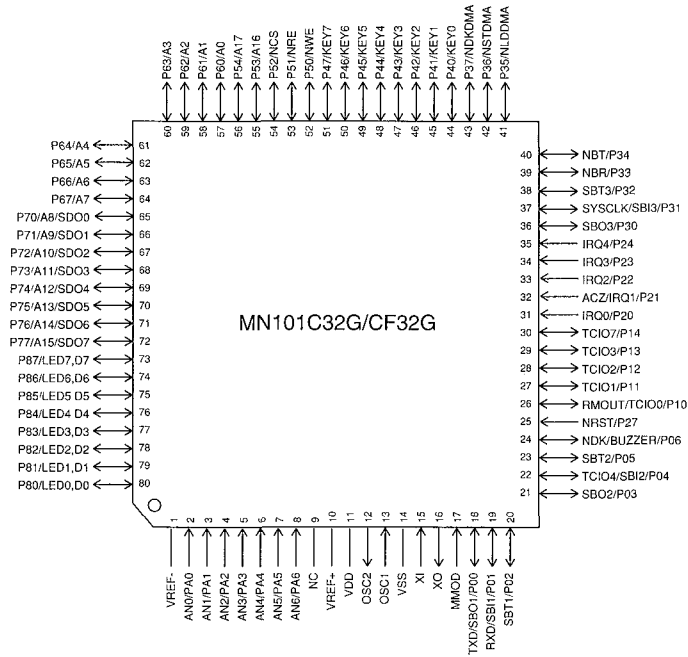
See the next page for support tool and pin assignment.

Support Tool

In-Circuit Emulator

PX-ICE101C / D + PX-PRB101C32-MBB

Pin Assignment



TQFP080-P-1212C*

*Pb Free

NC serves as the VPP terminal in the MN101CF32G, and cannot be used as a user terminal