❑ MN102L610B

Type		MN102L610B	
ROM (×8-bit / ×16-bit)		External	
RAM (×8-bit / ×16-bit)		4 K	
Package		LQFP100-P-1414 *Lead-free	
Minimum Instruction Execution Time		88.5 ns (at 4.5 V to 5.5 V, 22.6 MHz)	
Interrupts		• RESET • Watchdog • Timer counter 0 to 5 • Timer counter 6 to 7 • Timer counter 6 to 7 compare capture A • Timer counter 6 to 7 compare capture B • ATC transfer finish • External 0 to 4 • Serial ch.0, 1 transmission • Serial ch.0, 1 reception • NMI pin • A/D conversion finish	
Timer Counter		Timer counter 0 : 8-bit × 1 (timer output, event count) Clock source ····· 1/1, 1/128 of system clock frequency; 1/4 of low speed clock frequency; external clock Interrupt source ····· underflow of timer counter 0 Timer counter 1 : 8-bit × 1 (timer output, event count, A/D conversion start up) Clock source ····· system clock; 1/4 of low speed clock frequency; external clock; timer counter 0 output Interrupt source ····· underflow of timer counter 1 Timer counter 2 to 3 : 8-bit × 1 (timer output, event count, UART baud rate generator) Clock source ····· system clock; external clock; timer counter 0 output; timer counter 1, 2 output Interrupt source ····· underflow of timer counter 2, 3 Timer counter 4, 5 : 8-bit × 1 (timer output, event count) Clock source ····· 1/4 of low speed clock frequency; external clock; timer counter 0 output; timer counter 3, 4 output Interrupt source ····· underflow of timer counter 4, 5 Timer counter 6, 7 : 16-bit × 1 (timer output, event count, input capture, output compare, PWM output, 2-phase encoder input) Clock source ····· system clock; external clock; timer counter 4, 5 output Interrupt source ····· coincidence with compare capture A or at capture; coincidence with compare capture B or at capture; underflow of timer counter 6, 7 (Connectable) timer counter 0 to 5	
Serial Interface		Serial 0 : 7, 8-bit × 1 (common use with UART, transfer direction of MSB/LSB selectable) Clock source ····· 1/16 of timer counter 2 frequency; 1/16 of timer counter 3 frequency; external clock; 1/2 of timer counter 2 frequency Serial 1 : 7, 8-bit × 1 (common use with UART, transfer direction of MSB/LSB selectable) Clock source ····· 1/16 of timer counter 2 frequency; 1/16 of timer counter 3 frequency; external clock; 1/2 of timer counter 3 frequency UART × 2 (common use with serial 0, 1) I^2C × 2 (single master)	
I/O Pins	**I/O**	80	• Common use : 16 (by 8 bits), 8 (by 4 bits), 56 (by bit)(MN102LF61G)
		48	• Common use : 8 (by 4 bits), 40 (by bit)(MN102L610B)
A/D Inputs		8-bit × 8-ch. (with S/H)	
PWM		16-bit × 2-ch.	
Special Ports		LED drive port × 2	
Notes		Burst ROM inferface support, ATC (between serial 0ch and internal RAM) support	

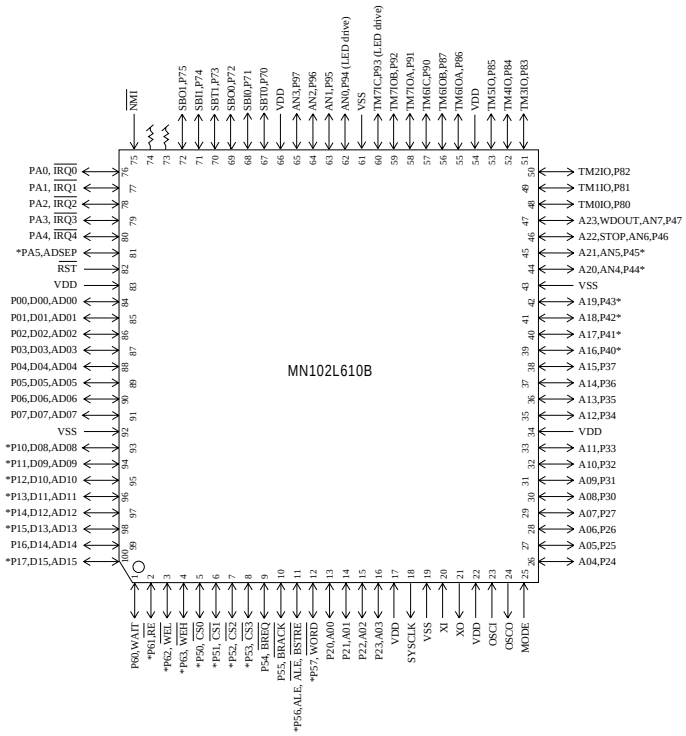
Electrical Characteristics

A/D characteristics

Parameter	Symbol	Condition		Limit			Unit
				min	typ	max	
A/D conversion relative error		VDD = 5 V , VSS = 0 V	ch.0 to 3			±3	LSB
			ch.4 to 7			±4	
A/D conversion time				4.248			µs
Analog input voltage	VIA			VSS		VDD	V

(Ta = 25°C , VDD = 5.0 V , VSS = 0 V)

Pin Assignment



LQFP100-P-1414 *Lead-free

*Port unusable in MN102L610B

* The MN102LF61G is manufactured and sold under license agreement with BULL CP8 Inc. Note that MN102LF61G cannot be used as the IC card.

Support Tool

In-circuit Emulator	PX-ICE102L00 + PX-PRB102L53-LQFP100-P-1414	
Flash Memory Built-in Type	Type	MN102LF61G
	ROM (× 8-bit / × 16-bit)	128 K
	RAM (× 8-bit / × 16-bit)	4 K
	Minimum instruction execution time	88.5 ns (at 4.5 V to 5.5 V, 22.6 MHz)
	Package	LQFP100-P-1414 *Lead-free

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