

MN102LP25G / L25G / LP25Z / LF25Z / L25Z / LP25D / L25D / LP25A / L25A / L2503

Type			MN102LP25G / L25G / LP25Z / LF25Z / L25Z / LP25D / L25D / LP25A / L25A / L2503 (For MN102LP25G and L25G, ES samples are available. LF25Z, LP25A and L25A are under development.)
ROM (x8-bit / x16-bit)			128K (OTP) / 128K / 128K (OTP) / 128K (Flash) / 128K / 64K (OTP) / 64K / 32K (OTP) / 32K / External
RAM (x8-bit / x16-bit)			5K / 5K / 3K / 3K / 3K / 3K / 3K / 2K / 2K / 3K
Minimum Instruction Execution Time			All models: 100ns (at 4.5 to 5.5V 20MHz) All models except MN102LF25Z: 200ns (at 2.7 to 3.6V 10MHz)
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 x 1 (Timer Output, Event Count) Clock Source 1/1, 1/128 of System Clock, 1/4 of Low Speed Clock, External Clock Interrupt Source Underflow of Timer Counter 0 Timer Counter 1 : 8-bit x 1 (Timer Output, Event Count, A/D Conversion Start up) Clock Source System Clock, 1/4 of Low Speed Clock, External Clock, Timer Counter 0 Output Interrupt Source Underflow of Timer Counter 1 Timer Counter 2 to 3 : 8-bit x 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 x 1 (Timer Output, Event Count) Clock Source 1/4 of Low Speed Clock, 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 x 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 x 1 (Common use with UART, Transfer direction of MSB/LSB selectable) Clock Source 1/16 Timer Counter 2, 1/16 of Timer Counter 3, External Clock 1/2 of Timer Counter 2 Serial 1 : 7, 8-bit x 1 (Common use with UART, Transfer direction of MSB/LSB selectable) Clock Source 1/16 Timer Counter 2, 1/16 of Timer Counter 3, External Clock 1/2 of Timer Counter 3 UART x 2 (Common use with Serial 0, 1) I²C x 2 (Single master)
I/O Pins	I/O	80 48	• Common use : 16 (by 8-bit), 8 (by 4-bit), 56 (by-bit) (all models except MN102L2503) • Common use : 8 (by 4-bit), 40 (by-bit) (MN102L2503)
A/D Inputs			8-bit x 8ch (with S/H)
PWM			16-bit x 2ch

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Notes

Burst ROM interface support, ATC (between serial 0ch and internal RAM) support

Package

LQFP100-P-1414

The MN102LF25Z is manufactured and sold under license agreement with BULL CP8 Inc. Note that MN102LF25Z cannot be used as the IC card.

Electrical Characteristics

A/D Characteristics (at VDD=5V)

Parameter	Symbol	Condition		Limit			Unit
				min	typ	max	
A/D Conversion Relative Error		VDD=5V, VSS=0V	ch0 to 3			±3	LSB
			ch4 to 7			+4	
A/D Conversion Time				4.8			μs
Analog Input Voltage	VIA			VSS		VDD	V

(Ta= 25°C, VDD=5.0V, VSS=0V)

A/D Characteristics (at VDD=3V)

Parameter	Symbol	Condition		Limit			Unit
				min	typ	max	
A/D Conversion Relative Error		VDD=3V, VSS=0V	ch0 to 3			±3	LSB
			ch4 to 7			+4	
A/D Conversion Time				9.6			μs
Analog Input Voltage	VIA			VSS		VDD	V

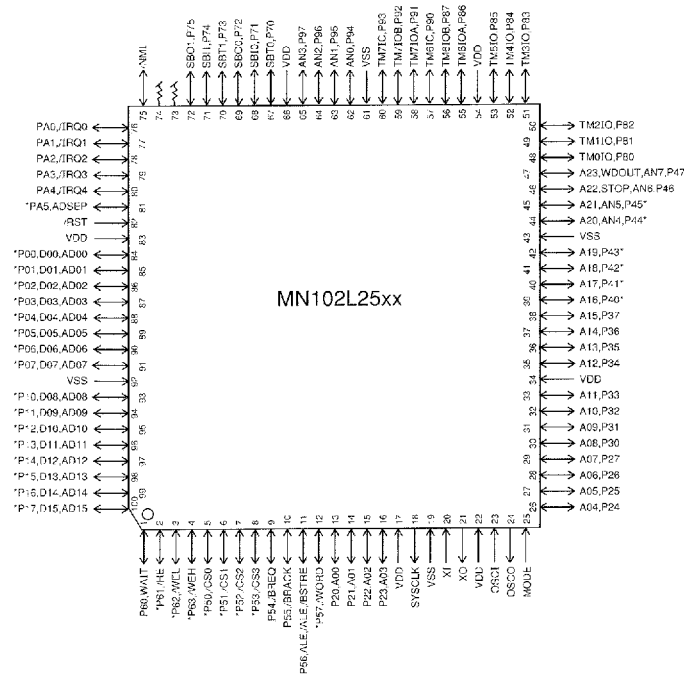
(Ta= 25°C, VDD=3.0V, VSS=0V)

Support Tool

In-Circuit Emulator

PX-ICE102L00 + PX-PRB102L25

Pin Assignment



LQFP100-P-1414

* Use of these ports are disabled for MN102L2503.

MN102L25xx (100-pin version) series

