IC

微控制器

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高功能、高性能&低功耗强化微控制器(高抗噪性能)

16bit ML621000系列

标准型 1200组 16bit低功耗强化微控制器(工业设备用)

Part No.	Operating Conditions						ROM/RAM				Functions/Features		
	Operating Voltage (V)	Operating Frequency(Max.)		Minimum Instruction Execution Time	Current Consumption (Typ.@HALT)	Operating Temperature (°C)	ROM Type	ROM Capacity (Byte)	Data Flash Capacity (Byte)	RAM Capacity (Byte)	Port		
		Low Speed	High Speed								Input	Output	Input/Output
New ML62Q1223A	1.6 to 5.5	32.768kHz (Internal RC oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	2.8μA (Internal RC oscillation)	−40 to +105	Flash	16K	2K	2K	–	–	12
New ML62Q1224A	1.6 to 5.5	32.768kHz (Internal RC oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	2.8μA (Internal RC oscillation)	−40 to +105	Flash	24K	2K	2K	–	–	12
New ML62Q1225A	1.6 to 5.5	32.768kHz (Internal RC oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	2.8μA (Internal RC oscillation)	−40 to +105	Flash	32K	2K	2K	–	–	12
New ML62Q1233A	1.6 to 5.5	32.768kHz (Internal RC oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	2.8μA (Internal RC oscillation)	−40 to +105	Flash	16K	2K	2K	–	–	16
New ML62Q1234A	1.6 to 5.5	32.768kHz (Internal RC oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	2.8μA (Internal RC oscillation)	−40 to +105	Flash	24K	2K	2K	–	–	16
New ML62Q1235A	1.6 to 5.5	32.768kHz (Internal RC oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	2.8μA (Internal RC oscillation)	−40 to +105	Flash	32K	2K	2K	–	–	16
New ML62Q1245A	1.6 to 5.5	32.768kHz (Internal RC oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	2.8μA (Internal RC oscillation)	−40 to +105	Flash	32K	2K	4K	–	–	20
New ML62Q1246A	1.6 to 5.5	32.768kHz (Internal RC oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	2.8μA (Internal RC oscillation)	−40 to +105	Flash	48K	2K	4K	–	–	20
New ML62Q1247A	1.6 to 5.5	32.768kHz (Internal RC oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	2.8μA (Internal RC oscillation)	−40 to +105	Flash	64K	2K	4K	–	–	20
New ML62Q1265A	1.6 to 5.5	32.768kHz (Internal RC oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	2.8μA (Internal RC oscillation)	−40 to +105	Flash	32K	2K	4K	–	–	28
New ML62Q1266A	1.6 to 5.5	32.768kHz (Internal RC oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	2.8μA (Internal RC oscillation)	−40 to +105	Flash	48K	2K	4K	–	–	28
New ML62Q1267A	1.6 to 5.5	32.768kHz (Internal RC oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	2.8μA (Internal RC oscillation)	−40 to +105	Flash	64K	2K	4K	–	–	28

标准型 1400组 16bit低功耗强化微控制器(工业设备用)

New ML62Q1430	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	3.4μA (Internal RC oscillation)	−40 to +105	Flash	32K	2K	4K	–	–	42
New ML62Q1431	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	3.4μA (Internal RC oscillation)	−40 to +105	Flash	48K	2K	4K	–	–	42
New ML62Q1432	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	3.4μA (Internal RC oscillation)	−40 to +105	Flash	64K	2K	4K	–	–	42
New ML62Q1440	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	3.4μA (Internal RC oscillation)	−40 to +105	Flash	32K	2K	4K	–	–	46
New ML62Q1441	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	3.4μA (Internal RC oscillation)	−40 to +105	Flash	48K	2K	4K	–	–	46
New ML62Q1442	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	3.4μA (Internal RC oscillation)	−40 to +105	Flash	64K	2K	4K	–	–	46
New ML62Q1450	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	3.4μA (Internal RC oscillation)	−40 to +105	Flash	32K	2K	4K	–	–	58
New ML62Q1451	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	3.4μA (Internal RC oscillation)	−40 to +105	Flash	48K	2K	4K	–	–	58
New ML62Q1452	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	3.4μA (Internal RC oscillation)	−40 to +105	Flash	64K	2K	4K	–	–	58

标准型 1500组 16bit低功耗强化微控制器(工业设备用)

☆ML62Q1533	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	96K	4K	8K	–	–	42
☆ML62Q1534	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	128K	4K	8K	–	–	42
☆ML62Q1543	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	96K	4K	8K	–	–	42
☆ML62Q1544	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	128K	4K	8K	–	–	46
☆ML62Q1553	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	96K	4K	8K	–	–	46
☆ML62Q1554	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	128K	4K	8K	–	–	46
☆ML62Q1555	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	160K	4K	16K	–	–	58
☆ML62Q1556	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	192K	4K	16K	–	–	58
☆ML62Q1557	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	256K	4K	16K	–	–	58
☆ML62Q1563	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	96K	4K	16K	–	–	72
☆ML62Q1564	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	128K	4K	16K	–	–	72
☆ML62Q1565	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	160K	4K	16K	–	–	72
☆ML62Q1566	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	192K	4K	16K	–	–	72
☆ML62Q1567	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	256K	4K	16K	–	–	72
☆ML62Q1573	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	96K	4K	16K	–	–	92
☆ML62Q1574	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	128K	4K	16K	–	–	92
☆ML62Q1575	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	160K	4K	16K	–	–	92
☆ML62Q1576	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	192K	4K	16K	–	–	92
☆ML62Q1577	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	256K	4K	16K	–	–	92

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(LAPIS Semiconductor产品)

16bit Timer	16bit Multi Function Timer	WDT	ADC(method)	Functions/Features: Serial Port: I²C	SSIO	UART	Supply Voltage Detection	LCD Driver	External Interrupt Sources	Others	Notes	Package	Chip Support	Halogen Free Support	Industrial Grade
4 (8bit×8)	4 (TMR, PWM, IGBT, Capture)	1	10bit×6(SA type)	Master Slave×1 Master×1	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	8	Comparator×1, Thermal sensor, DMA, Multiplication and Division	–	P-SSOP16-0225-0.65 P-WQFN16-0404-0.50	–	✓	✓
4 (8bit×8)	4 (TMR, PWM, IGBT, Capture)	1	10bit×6(SA type)	Master Slave×1 Master×1	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	8	Comparator×1, Thermal sensor, DMA, Multiplication and Division	–	P-SSOP16-0225-0.65 P-WQFN16-0404-0.50	–	✓	✓
4 (8bit×8)	4 (TMR, PWM, IGBT, Capture)	1	10bit×6(SA type)	Master Slave×1 Master×1	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	8	Comparator×1, Thermal sensor, DMA, Multiplication and Division	–	P-SSOP16-0225-0.65 P-WQFN16-0404-0.50	–	✓	✓
4 (8bit×8)	4 (TMR, PWM, IGBT, Capture)	1	10bit×8(SA type)	Master Slave×1 Master×1	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	8	Comparator×1, Thermal sensor, DMA, Multiplication and Division	–	P-TSSOP20-0225-0.65	–	✓	✓
4 (8bit×8)	4 (TMR, PWM, IGBT, Capture)	1	10bit×8(SA type)	Master Slave×1 Master×1	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	8	Comparator×1, Thermal sensor, DMA, Multiplication and Division	–	P-TSSOP20-0225-0.65	–	✓	✓
4 (8bit×8)	4 (TMR, PWM, IGBT, Capture)	1	10bit×8(SA type)	Master Slave×1 Master×1	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	8	Comparator×1, Thermal sensor, DMA, Multiplication and Division	–	P-TSSOP20-0225-0.65	–	✓	✓
6 (8bit×12)	4 (TMR, PWM, IGBT, Capture)	1	10bit×8(SA type)	Master Slave×1 Master×1	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	8	Comparator×1, 8bit DAC×1,Thermal sensor, DMA, Multiplication and Division	–	P-WQFN24-0404-0.50	–	✓	✓
6 (8bit×12)	4 (TMR, PWM, IGBT, Capture)	1	10bit×8(SA type)	Master Slave×1 Master×1	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	8	Comparator×1, 8bit DAC×1,Thermal sensor, DMA, Multiplication and Division	–	P-WQFN24-0404-0.50	–	✓	✓
6 (8bit×12)	4 (TMR, PWM, IGBT, Capture)	1	10bit×8(SA type)	Master Slave×1 Master×1	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	8	Comparator×1, 8bit DAC×1,Thermal sensor, DMA, Multiplication and Division	–	P-WQFN24-0404-0.50	–	✓	✓
6 (8bit×12)	4 (TMR, PWM, IGBT, Capture)	1	10bit×8(SA type)	Master Slave×1 Master×1	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	8	Comparator×1, 8bit DAC×1,Thermal sensor, DMA, Multiplication and Division	–	P-TQFP32-0707-0.80	–	✓	✓
6 (8bit×12)	4 (TMR, PWM, IGBT, Capture)	1	10bit×8(SA type)	Master Slave×1 Master×1	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	8	Comparator×1, 8bit DAC×1,Thermal sensor, DMA, Multiplication and Division	–	P-TQFP32-0707-0.80	–	✓	✓
6 (8bit×12)	4 (TMR, PWM, IGBT, Capture)	1	10bit×8(SA type)	Master Slave×1 Master×1	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	8	Comparator×1, 8bit DAC×1,Thermal sensor, DMA, Multiplication and Division	–	P-TQFP32-0707-0.80	–	✓	✓
6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	8	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-TQFP48-0707-0.50	–	✓	✓
6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	8	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-TQFP48-0707-0.50	–	✓	✓
6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	8	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-TQFP48-0707-0.50	–	✓	✓
6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	8	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-TQFP52-1010-0.65	–	✓	✓
6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	8	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-TQFP52-1010-0.65	–	✓	✓
6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	8	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-TQFP52-1010-0.65	–	✓	✓
6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duple×2)		VLS×1	–	8	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-QFP64-1414-0.80 P-TQFP64-1010-0.50	–	✓	✓
6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×4)		VLS×1	–	8	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-QFP64-1414-0.80 P-TQFP64-1010-0.50	–	✓	✓
6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×4)		VLS×1	–	8	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-QFP64-1414-0.80 P-TQFP64-1010-0.50	–	✓	✓
6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	10	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-TQFP48-0707-0.50	–	✓	✓
6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	10	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-TQFP48-0707-0.50	–	✓	✓
6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	10	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-TQFP52-1010-0.65	–	✓	✓
6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	10	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-TQFP52-1010-0.65	–	✓	✓
6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	10	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-QFP64-1414-0.80 P-TQFP64-1010-0.50	–	✓	✓
6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	10	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-QFP64-1414-0.80 P-TQFP64-1010-0.50	–	✓	✓
6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	10	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-QFP64-1414-0.80 P-TQFP64-1010-0.50	–	✓	✓
6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	10	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-QFP64-1414-0.80 P-TQFP64-1010-0.50	–	✓	✓
6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	–	10	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-QFP64-1414-0.80 P-TQFP64-1010-0.50	–	✓	✓
8 (8bit×16)	8 (TMR, PWM, IGBT, Capture)	1	10bit×16(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×6 (UART Half Duplex×6)		VLS×1	–	12	Comparator×2, 8bit DAC×2, Thermal sensor, DMA, Multiplication and Division	–	P-QFP80-1414-0.65	–	✓	✓
8 (8bit×16)	8 (TMR, PWM, IGBT, Capture)	1	10bit×16(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×6 (UART Half Duplex×6)		VLS×1	–	12	Comparator×2, 8bit DAC×2, Thermal sensor, DMA, Multiplication and Division	–	P-QFP80-1414-0.65	–	✓	✓
8 (8bit×16)	8 (TMR, PWM, IGBT, Capture)	1	10bit×16(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×6 (UART Half Duplex×6)		VLS×1	–	12	Comparator×2, 8bit DAC×2, Thermal sensor, DMA, Multiplication and Division	–	P-QFP80-1414-0.65	–	✓	✓
8 (8bit×16)	8 (TMR, PWM, IGBT, Capture)	1	10bit×16(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×6 (UART Half Duplex×6)		VLS×1	–	12	Comparator×2, 8bit DAC×2, Thermal sensor, DMA, Multiplication and Division	–	P-QFP80-1414-0.65	–	✓	✓
8 (8bit×16)	8 (TMR, PWM, IGBT, Capture)	1	10bit×16(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×6 (UART Half Duplex×6)		VLS×1	–	12	Comparator×2, 8bit DAC×2, Thermal sensor, DMA, Multiplication and Division	–	P-QFP80-1414-0.65	–	✓	✓
8 (8bit×16)	8 (TMR, PWM, IGBT, Capture)	1	10bit×16(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×6 (UART Half Duplex×6)		VLS×1	–	12	Comparator×2, 8bit DAC×2, Thermal sensor, DMA, Multiplication and Division	–	P-QFP100-1420-0.65 P-TQFP100-1414-0.50	–	✓	✓
8 (8bit×16)	8 (TMR, PWM, IGBT, Capture)	1	10bit×16(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×6 (UART Half Duplex×6)		VLS×1	–	12	Comparator×2, 8bit DAC×2, Thermal sensor, DMA, Multiplication and Division	–	P-QFP100-1420-0.65 P-TQFP100-1414-0.50	–	✓	✓
8 (8bit×16)	8 (TMR, PWM, IGBT, Capture)	1	10bit×16(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×6 (UART Half Duplex×6)		VLS×1	–	12	Comparator×2, 8bit DAC×2, Thermal sensor, DMA, Multiplication and Division	–	P-QFP100-1420-0.65 P-TQFP100-1414-0.50	–	✓	✓
8 (8bit×16)	8 (TMR, PWM, IGBT, Capture)	1	10bit×16(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×6 (UART Half Duplex×6)		VLS×1	–	12	Comparator×2, 8bit DAC×2, Thermal sensor, DMA, Multiplication and Division	–	P-QFP100-1420-0.65 P-TQFP100-1414-0.50	–	✓	✓
8 (8bit×16)	8 (TMR, PWM, IGBT, Capture)	1	10bit×16(SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×6 (UART Half Duplex×6)		VLS×1	–	12	Comparator×2, 8bit DAC×2, Thermal sensor, DMA, Multiplication and Division	–	P-QFP100-1420-0.65 P-TQFP100-1414-0.50	–	✓	✓

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微控制器

搭载LCD驱动器 段码式 1600组 16bit低功耗强化微控制器(工业设备用)

Part No.	Operating Conditions						ROM/RAM				Functions/Features			
	Operating Voltage (V)	Operating Frequency(Max.)		Minimum Instruction Execution Time	Current Consumption (Typ.@HALT)	Operating Temperature (°C)	ROM Type	ROM Capacity (Byte)	Data Flash Capacity (Byte)	RAM Capacity (Byte)	Port			
		Low Speed	High Speed								Input	Output	Input/Output	
New ML62Q1600	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	3.4μA (Internal RC oscillation)	−40 to +105	Flash	32K	2K	4K	–	–	37	
New ML62Q1601	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	3.4μA (Internal RC oscillation)	−40 to +105	Flash	48K	2K	4K	–	–	37	
New ML62Q1602	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	3.4μA (Internal RC oscillation)	−40 to +105	Flash	64K	2K	4K	–	–	37	
New ML62Q1610	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	3.4μA (Internal RC oscillation)	−40 to +105	Flash	32K	2K	4K	–	–	41	
New ML62Q1611	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	3.4μA (Internal RC oscillation)	−40 to +105	Flash	48K	2K	4K	–	–	41	
New ML62Q1612	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	3.4μA (Internal RC oscillation)	−40 to +105	Flash	64K	2K	4K	–	–	41	
New ML62Q1620	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	3.4μA (Internal RC oscillation)	−40 to +105	Flash	32K	2K	4K	–	–	53	
New ML62Q1621	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	3.4μA (Internal RC oscillation)	−40 to +105	Flash	48K	2K	4K	–	–	53	
New ML62Q1622	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	3.4μA (Internal RC oscillation)	−40 to +105	Flash	64K	2K	4K	–	–	53	

搭载LCD驱动器 段码式 1700组 16bit低功耗强化微控制器(工业设备用)

☆ML62Q1703	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	96K	4K	8K	–	–	37	
☆ML62Q1704	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	128K	4K	8K	–	–	37	
☆ML62Q1713	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	96K	4K	8K	–	–	41	
☆ML62Q1714	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	128K	4K	8K	–	–	41	
☆ML62Q1723	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	96K	4K	8K	–	–	53	
☆ML62Q1724	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	128K	4K	8K	–	–	53	
☆ML62Q1725	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	160K	4K	16K	–	–	53	
☆ML62Q1726	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	192K	4K	16K	–	–	53	
☆ML62Q1727	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	256K	4K	16K	–	–	53	
☆ML62Q1733	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	96K	4K	16K	–	–	67	
☆ML62Q1734	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	128K	4K	16K	–	–	67	
☆ML62Q1735	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	160K	4K	16K	–	–	67	
☆ML62Q1736	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	192K	4K	16K	–	–	67	
☆ML62Q1737	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	256K	4K	16K	–	–	67	
☆ML62Q1743	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	96K	4K	16K	–	–	87	
☆ML62Q1744	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	128K	4K	16K	–	–	87	
☆ML62Q1745	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	160K	4K	16K	–	–	87	
☆ML62Q1746	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	192K	4K	16K	–	–	87	
☆ML62Q1747	1.6 to 5.5	32.768kHz (Internal RC oscillation/Crystal oscillation)	24MHz (PLL oscillation)	41ns/ 30.5μs	(TBD) (Internal RC oscillation)	−40 to +105	Flash	256K	4K	16K	–	–	87	

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				Functions/Features												
	16bit Timer	16bit Multi Function Timer	WDT	ADC (method)	Serial Port I²C	Serial Port SSIO	Serial Port UART	Supply Voltage Detection	LCD Driver	External Interrupt Sources	Others	Notes	Package	Chip Support	Halogen Free Support	Industrial Grade
	6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	Max. 192dot 24seg.×8com.	8	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-TQFP48-0707-0.50	–	✓	✓
	6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	Max. 192dot 24seg.×8com.	8	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-TQFP48-0707-0.50	–	✓	✓
	6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	Max. 192dot 24seg.×8com.	8	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-TQFP48-0707-0.50	–	✓	✓
	6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	Max. 216dot 27seg.×8com.	8	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-TQFP52-1010-0.65	–	✓	✓
	6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	Max. 216dot 27seg.×8com.	8	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-TQFP52-1010-0.65	–	✓	✓
	6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	Max. 216dot 27seg.×8com.	8	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-TQFP52-1010-0.65	–	✓	✓
	6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	Max. 288dot 36seg.×8com.	8	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-QFP64-1414-0.80 P-TQFP64-1010-0.50	–	✓	✓
	6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	Max. 288dot 36seg.×8com.	8	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-QFP64-1414-0.80 P-TQFP64-1010-0.50	–	✓	✓
	6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	Max. 288dot 36seg.×8com.	8	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-QFP64-1414-0.80 P-TQFP64-1010-0.50	–	✓	✓
	6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	Max. 192dot 24seg.×8com.	10	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-TQFP48-0707-0.50	–	✓	✓
	6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	Max. 192dot 24seg.×8com.	10	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-TQFP48-0707-0.50	–	✓	✓
	6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	Max. 192dot 24seg.×8com.	10	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-TQFP52-1010-0.65	–	✓	✓
	6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	Max. 216dot 27seg.×8com.	10	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-TQFP52-1010-0.65	–	✓	✓
	6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	Max. 280dot 35seg.×8com.	10	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-QFP64-1414-0.80 P-TQFP64-1010-0.50	–	✓	✓
	6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	Max. 280dot 35seg.×8com.	10	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-QFP64-1414-0.80 P-TQFP64-1010-0.50	–	✓	✓
	6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	Max. 280dot 35seg.×8com.	10	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-QFP64-1414-0.80 P-TQFP64-1010-0.50	–	✓	✓
	6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	Max. 280dot 35seg.×8com.	10	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-QFP64-1414-0.80 P-TQFP64-1010-0.50	–	✓	✓
	6 (8bit×12)	6 (TMR, PWM, IGBT, Capture)	1	10bit×12 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×2 (UART Half Duplex×2)		VLS×1	Max. 280dot 35seg.×8com.	10	Comparator×2, 8bit DAC×1, Thermal sensor, DMA, Multiplication and Division	–	P-QFP64-1414-0.80 P-TQFP64-1010-0.50	–	✓	✓
	8 (8bit×16)	8 (TMR, PWM, IGBT, Capture)	1	10bit×16 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×6 (UART Half Duplex×6)		VLS×1	Max. 360dot 45seg.×8com.	12	Comparator×2, 8bit DAC×2, Thermal sensor, DMA, Multiplication and Division	–	P-QFP80-1414-0.65	–	✓	✓
	8 (8bit×16)	8 (TMR, PWM, IGBT, Capture)	1	10bit×16 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×6 (UART Half Duplex×6)		VLS×1	Max. 360dot 45seg.×8com.	12	Comparator×2, 8bit DAC×2, Thermal sensor, DMA, Multiplication and Division	–	P-QFP80-1414-0.65	–	✓	✓
	8 (8bit×16)	8 (TMR, PWM, IGBT, Capture)	1	10bit×16 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×6 (UART Half Duplex×6)		VLS×1	Max. 360dot 45seg.×8com.	12	Comparator×2, 8bit DAC×2, Thermal sensor, DMA, Multiplication and Division	–	P-QFP80-1414-0.65	–	✓	✓
	8 (8bit×16)	8 (TMR, PWM, IGBT, Capture)	1	10bit×16 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×6 (UART Half Duplex×6)		VLS×1	Max. 360dot 45seg.×8com.	12	Comparator×2, 8bit DAC×2, Thermal sensor, DMA, Multiplication and Division	–	P-QFP80-1414-0.65	–	✓	✓
	8 (8bit×16)	8 (TMR, PWM, IGBT, Capture)	1	10bit×16 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×6 (UART Half Duplex×6)		VLS×1	Max. 360dot 45seg.×8com.	12	Comparator×2, 8bit DAC×2, Thermal sensor, DMA, Multiplication and Division	–	P-QFP80-1414-0.65	–	✓	✓
	8 (8bit×16)	8 (TMR, PWM, IGBT, Capture)	1	10bit×16 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×6 (UART Half Duplex×6)		VLS×1	Max. 480dot 60seg.×8com.	12	Comparator×2, 8bit DAC×2, Thermal sensor, DMA, Multiplication and Division	–	P-QFP100-1420-0.65 P-TQFP100-1414-0.50	–	✓	✓
	8 (8bit×16)	8 (TMR, PWM, IGBT, Capture)	1	10bit×16 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×6 (UART Half Duplex×6)		VLS×1	Max. 480dot 60seg.×8com.	12	Comparator×2, 8bit DAC×2, Thermal sensor, DMA, Multiplication and Division	–	P-QFP100-1420-0.65 P-TQFP100-1414-0.50	–	✓	✓
	8 (8bit×16)	8 (TMR, PWM, IGBT, Capture)	1	10bit×16 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×6 (UART Half Duplex×6)		VLS×1	Max. 480dot 60seg.×8com.	12	Comparator×2, 8bit DAC×2, Thermal sensor, DMA, Multiplication and Division	–	P-QFP100-1420-0.65 P-TQFP100-1414-0.50	–	✓	✓
	8 (8bit×16)	8 (TMR, PWM, IGBT, Capture)	1	10bit×16 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×6 (UART Half Duplex×6)		VLS×1	Max. 480dot 60seg.×8com.	12	Comparator×2, 8bit DAC×2, Thermal sensor, DMA, Multiplication and Division	–	P-QFP100-1420-0.65 P-TQFP100-1414-0.50	–	✓	✓
	8 (8bit×16)	8 (TMR, PWM, IGBT, Capture)	1	10bit×16 (SA type)	Master Slave×1 Master×2	UAR Full Duplex/SSIO×6 (UART Half Duplex×6)		VLS×1	Max. 480dot 60seg.×8com.	12	Comparator×2, 8bit DAC×2, Thermal sensor, DMA, Multiplication and Division	–	P-QFP100-1420-0.65 P-TQFP100-1414-0.50	–	✓	✓

☆：开发中

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微控制器

低功耗强化微控制器(高抗噪性能)

8bit ML6101xx

标准型　8bit低功耗强化微控制器(工业设备用)

Part No.	Operating Conditions						ROM/RAM				Functions/Features		
	Operating Voltage (V)	Operating Frequency(Max.)		Minimum Instruction Execution Time	Current Consumption (Typ.@HALT)	Operating Temperature (°C)	ROM Type	ROM Capacity (Byte)	Data Flash Capacity (Byte)	RAM Capacity (Byte)	Port		
		Low Speed	High Speed								Input	Output	Input/Output
ML610Q101	2.7 to 5.5	32.768kHz (Internal RC oscillation)	8.192MHz	0.122μs/ 30.5μs	–	– 40 to + 85	Flash	4K	–	256	–	–	11
ML610Q102	2.7 to 5.5	32.768kHz (Internal RC oscillation)	8.192MHz	0.122μs/ 30.5μs	–	– 40 to + 85	Flash	6K	–	256	–	–	11
ML610Q111	2.7 to 5.5	32.768kHz (Internal RC oscillation)	8.192MHz	0.122μs/ 30.5μs	–	– 40 to + 105	Flash	24K	4K	2K	–	–	15
ML610Q112	2.7 to 5.5	32.768kHz (Internal RC oscillation)	8.192MHz	0.122μs/ 30.5μs	–	– 40 to + 105	Flash	32K	4K	4K	–	–	25
搭载LCD驱动器　段码式　8bit低功耗强化微控制器													
ML610Q172	2.2 to 5.5	32.768kHz (Internal RC oscillation/ Crystal oscillation)	8.192MHz	0.122μs/ 30.5μs	2.0μA	– 40 to + 85	Flash	128K	2K	4K	6	2	37
ML610Q173	2.2 to 5.5	32.768kHz (Internal RC oscillation/ Crystal oscillation)	8.192MHz	0.122μs/ 30.5μs	2.0μA	– 40 to + 85	Flash	128K	2K	4K	6	2	37
ML610Q174	2.2 to 5.5	32.768kHz (Internal RC oscillation/ Crystal oscillation)	8.192MHz	0.122μs/ 30.5μs	2.0μA	– 40 to + 85	Flash	128K	2K	4K	6	6	49
ML610Q178	2.2 to 5.5	32.768kHz (Internal RC oscillation/ Crystal oscillation)	8.192MHz	0.122μs/ 30.5μs	2.0μA	– 40 to + 85	Flash	128K	–	4K	7	8	59

16bit ML6201xx

标准型　16bit低功耗强化微控制器(工业设备用)

Part No.	Operating Conditions						ROM/RAM				Functions/Features		
	Operating Voltage (V)	Operating Frequency(Max.)		Minimum Instruction Execution Time	Current Consumption (Typ.@HALT)	Operating Temperature (°C)	ROM Type	ROM Capacity (Byte)	Data Flash Capacity (Byte)	RAM Capacity (Byte)	Port		
		Low Speed	High Speed								Input	Output	Input/Output
ML620Q131/B*	1.6 to 5.5	32.768kHz (Internal RC oscillation)	16MHz	62.5 ns/ 30.5μs	3.5μA (Internal RC oscillation)	– 40 to + 105	Flash	8K	2K	2K	1	–	10
ML620Q132/B*	1.6 to 5.5	32.768kHz (Internal RC oscillation)	16MHz	62.5 ns/ 30.5μs	3.5μA (Internal RC oscillation)	– 40 to + 105	Flash	16K	2K	2K	1	–	10
ML620Q133/B*	1.6 to 5.5	32.768kHz (Internal RC oscillation)	16MHz	62.5 ns/ 30.5μs	3.5μA (Internal RC oscillation)	– 40 to + 105	Flash	24K	2K	2K	1	–	10
ML620Q134/B*	1.6 to 5.5	32.768kHz (Internal RC oscillation)	16MHz	62.5 ns/ 30.5μs	3.5μA (Internal RC oscillation)	– 40 to + 105	Flash	8K	2K	2K	1	–	14
ML620Q135/B*	1.6 to 5.5	32.768kHz (Internal RC oscillation)	16MHz	62.5 ns/ 30.5μs	3.5μA (Internal RC oscillation)	– 40 to + 105	Flash	16K	2K	2K	1	–	14
ML620Q136/B*	1.6 to 5.5	32.768kHz (Internal RC oscillation)	16MHz	62.5 ns/ 30.5μs	3.5μA (Internal RC oscillation)	– 40 to + 105	Flash	24K	2K	2K	1	–	14
ML620Q151A/B*	1.8 to 5.5	32.768kHz (Internal RC oscillation/ Crystal oscillation)	8.192MHz	0.122μs/ 30.5μs	2.5 (Crystal oscillation) 3.5 (Internal RC oscillation)	– 40 to + 105	Flash	32K	2K	2K	5 (Use crystal oscillation) 6 (Not use crystal oscillation)	4	30 (Use crystal oscillation) 31 (Not use crystal oscillation)
ML620Q152A/B*	1.8 to 5.5	32.768kHz (Internal RC oscillation/ Crystal oscillation)	8.192MHz	0.122μs/ 30.5μs	2.5 (Crystal oscillation) 3.5 (Internal RC oscillation)	– 40 to + 105	Flash	48K	2K	2K	5 (Use crystal oscillation) 6 (Not use crystal oscillation)	4	30 (Use crystal oscillation) 31 (Not use crystal oscillation)
ML620Q153A/B*	1.8 to 5.5	32.768kHz (Internal RC oscillation/ Crystal oscillation)	8.192MHz	0.122μs/ 30.5μs	2.5 (Crystal oscillation) 3.5 (Internal RC oscillation)	– 40 to + 105	Flash	64K	2K	2K	5 (Use crystal oscillation) 6 (Not use crystal oscillation)	4	30 (Use crystal oscillation) 31 (Not use crystal oscillation)
ML620Q154A/B*	1.8 to 5.5	32.768kHz (Internal RC oscillation/ Crystal oscillation)	8.192MHz	0.122μs/ 30.5μs	2.5 (Crystal oscillation) 3.5 (Internal RC oscillation)	– 40 to + 105	Flash	32K	2K	2K	6 (Use crystal oscillation) 7 (Not use crystal oscillation)	4	33 (Use crystal oscillation) 34 (Not use crystal oscillation)
ML620Q155A/B*	1.8 to 5.5	32.768kHz (Internal RC oscillation/ Crystal oscillation)	8.192MHz	0.122μs/ 30.5μs	2.5 (Crystal oscillation) 3.5 (Internal RC oscillation)	– 40 to + 105	Flash	48K	2K	2K	6 (Use crystal oscillation) 7 (Not use crystal oscillation)	4	33 (Use crystal oscillation) 34 (Not use crystal oscillation)
ML620Q156A/B*	1.8 to 5.5	32.768kHz (Internal RC oscillation/ Crystal oscillation)	8.192MHz	0.122μs/ 30.5μs	2.5 (Crystal oscillation) 3.5 (Internal RC oscillation)	– 40 to + 105	Flash	64K	2K	2K	6 (Use crystal oscillation) 7 (Not use crystal oscillation)	4	33 (Use crystal oscillation) 34 (Not use crystal oscillation)
ML620Q157A/B*	1.8 to 5.5	32.768kHz (Internal RC oscillation/ Crystal oscillation)	8.192MHz	0.122μs/ 30.5μs	2.5 (Crystal oscillation) 3.5 (Internal RC oscillation)	– 40 to + 105	Flash	32K	2K	2K	6 (Use crystal oscillation) 7 (Not use crystal oscillation)	4	45 (Use crystal oscillation) 46 (Not use crystal oscillation)
ML620Q158A/B*	1.8 to 5.5	32.768kHz (Internal RC oscillation/ Crystal oscillation)	8.192MHz	0.122μs/ 30.5μs	2.5 (Crystal oscillation) 3.5 (Internal RC oscillation)	– 40 to + 105	Flash	48K	2K	2K	6 (Use crystal oscillation) 7 (Not use crystal oscillation)	4	45 (Use crystal oscillation) 46 (Not use crystal oscillation)
ML620Q159A/B*	1.8 to 5.5	32.768kHz (Internal RC oscillation/ Crystal oscillation)	8.192MHz	0.122μs/ 30.5μs	2.5 (Crystal oscillation) 3.5 (Internal RC oscillation)	– 40 to + 105	Flash	64K	2K	2K	6 (Use crystal oscillation) 7 (Not use crystal oscillation)	4	45 (Use crystal oscillation) 46 (Not use crystal oscillation)

*：新开发请使用B版本。
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(LAPIS Semiconductor产品)

8bit Timer	16bit Timer	PWM	WDT	ADC (method)	Serial Port: I^{2}C	Serial Port: SSIO	Serial Port: UART	Supply Voltage Detection	LCD Driver	External Interrupt Sources	Others	Notes	Package	Chip Support	Halogen Free Support	Industrial Grade
6 (16bit×3)	–	16bit×1 (with dead time)	1	10bit×6 (SA type)	–	–	1	VLS×2	–	5	Analog comparator×2	–	P-SSOP16-0225-0.65 P-WQFN16-0404-0.50	–	✓	✓
6 (16bit×3)	–	16bit×1 (with dead time)	1	10bit×6 (SA type)	–	–	1	VLS×2	–	5	Analog comparator×2	–	P-SSOP16-0225-0.65 P-WQFN16-0404-0.50	–	✓	✓
6 (16bit×3)	–	16bit×4 (Complementary type)	1	10bit×6 (SA type)	1	1	2	VLS×2	–	7	Analog comparator×2	–	P-TSSOP20-0225-0.65	–	✓	✓
6 (16bit×3)	–	16bit×4 (Complementary type)	1	10bit×8 (SA type)	1	1	2	VLS×2	–	7	Analog comparator×2	–	P-LQFP32-0707-0.80	–	✓	✓
6 (16bit×3)	–	16bit×3 (Supports IGBT control)	1	10bit×12 (SA type)	1	2	2 (Half Duplex×2)	BLD×1	Max. 96dot 24seg.×4com.	4	Low speed frequency correction	–	QFP64-P-1414-0.80	–	✓	–
6 (16bit×3)	–	16bit×3 (Supports IGBT control)	1	10bit×8 (SA type)	1	2	2 (Half Duplex×2)	BLD×1	Max. 96dot 24seg.×4com.	4	Low speed frequency correction/ Analog comparator	–	QFP64-P-1414-0.80	–	✓	–
6 (16bit×3)	–	16bit×3 (Supports IGBT control)	1	10bit×12 (SA type)	1	2	2 (Half Duplex×2)	BLD×1	Max. 128dot 32seg.×4com.	4	Low speed frequency correction/ Analog comparator	–	QFP80-P-1420-0.80	–	✓	–
6 (16bit×3)	–	16bit×2 (Supports IGBT control)	1	10bit×16 (SA type)	1	2	2 (Half Duplex×2)	BLD×1	Max. 160dot 40seg.×4com.	5	Low speed frequency correction	–	P-QFP100-1420-0.65	–	✓	–

(LAPIS Semiconductor产品)

8bit Timer	16bit Timer	PWM	WDT	ADC (method)	Serial Port: I^{2}C	Serial Port: SSIO	Serial Port: UART	Supply Voltage Detection	LCD Driver	External Interrupt Sources	Others	Notes	Package	Chip Support	Halogen Free Support	Industrial Grade
10 (16bit×5)	–	16bit×1 (with dead time)	1	10bit×6 (SA type)	Master×1 Slave×1	1	1	VLS×1	–	5	Analog comparator×2	–	P-SSOP16-0225-0.65 P-WQFN16-0404-0.50	–	✓	✓
10 (16bit×5)	–	16bit×1 (with dead time)	1	10bit×6 (SA type)	Master×1 Slave×1	1	1	VLS×1	–	5	Analog comparator×2	–	P-SSOP16-0225-0.65 P-WQFN16-0404-0.50	–	✓	✓
10 (16bit×5)	–	16bit×1 (with dead time)	1	10bit×6 (SA type)	Master×1 Slave×1	1	1	VLS×1	–	5	Analog comparator×2	–	P-SSOP16-0225-0.65 P-WQFN16-0404-0.50	–	✓	✓
10 (16bit×5)	–	16bit×1 (with dead time)	1	10bit×8 (SA type)	Master×1 Slave×1	1	1	VLS×1	–	5	Analog comparator×2	–	P-TSSOP20-0225-0.65	–	✓	✓
10 (16bit×5)	–	16bit×1 (with dead time)	1	10bit×8 (SA type)	Master×1 Slave×1	1	1	VLS×1	–	5	Analog comparator×2	–	P-TSSOP20-0225-0.65	–	✓	✓
10 (16bit×5)	–	16bit×1 (with dead time)	1	10bit×8 (SA type)	Master×1 Slave×1	1	1	VLS×1	–	5	Analog comparator×2	–	P-TSSOP20-0225-0.65	–	✓	✓
2 (16bit×1)	4	16bit×4 (Complementary type)	1	10bit×12 (SA type)	1	1	2 (Half Duplex×2, Full Duplex×1)	LLD×1	–	7	Analog comparator	–	P-TQFP48-0707-0.50	–	✓	✓
2 (16bit×1)	4	16bit×4 (Complementary type)	1	10bit×12 (SA type)	1	1	2 (Half Duplex×2, Full Duplex×1)	LLD×1	–	7	Analog comparator	–	P-TQFP48-0707-0.50	–	✓	✓
2 (16bit×1)	4	16bit×4 (Complementary type)	1	10bit×12 (SA type)	1	1	2 (Half Duplex×2, Full Duplex×1)	LLD×1	–	7	Analog comparator	–	P-TQFP48-0707-0.50	–	✓	✓
2 (16bit×1)	4	16bit×4 (Complementary type)	1	10bit×12 (SA type)	1	1	2 (Half Duplex×2, Full Duplex×1)	LLD×1	–	8	Analog comparator	–	P-TQFP52-1010-0.65	–	✓	✓
2 (16bit×1)	4	16bit×4 (Complementary type)	1	10bit×12 (SA type)	1	1	2 (Half Duplex×2, Full Duplex×1)	LLD×1	–	8	Analog comparator	–	P-TQFP52-1010-0.65	–	✓	✓
2 (16bit×1)	4	16bit×4 (Complementary type)	1	10bit×12 (SA type)	1	1	2 (Half Duplex×2, Full Duplex×1)	LLD×1	–	8	Analog comparator	–	P-TQFP52-1010-0.65	–	✓	✓
2 (16bit×1)	4	16bit×4 (Complementary type)	1	10bit×12 (SA type)	1	1	2 (Half Duplex×2, Full Duplex×1)	LLD×1	–	8	Analog comparator	–	P-QFP64-1414-0.80 P-TQFP64-1010-0.50	–	✓	✓
2 (16bit×1)	4	16bit×4 (Complementary type)	1	10bit×12 (SA type)	1	1	2 (Half Duplex×2, Full Duplex×1)	LLD×1	–	8	Analog comparator	–	P-QFP64-1414-0.80 P-TQFP64-1010-0.50	–	✓	✓
2 (16bit×1)	4	16bit×4 (Complementary type)	1	10bit×12 (SA type)	1	1	2 (Half Duplex×2, Full Duplex×1)	LLD×1	–	8	Analog comparator	–	P-QFP64-1414-0.80 P-TQFP64-1010-0.50	–	✓	✓

高性能&超低功耗微控制器

16bit ML6205xx/ML6204xx

标准型　16bit低功耗微控制器(工业设备用)

Part No.	Operating Conditions						ROM/RAM				Functions/Features						
	Operating Voltage (V)	Operating Frequency(Max.) Low Speed	Operating Frequency(Max.) High Speed	Minimum Instruction Execution Time	Current Consumption (Typ.@HALT)	Operating Temperature (℃)	ROM Type	ROM Capacity (Byte)	Data Flash Capacity (Byte)	RAM Capacity (Byte)	Co-processor for Multiplication and Division	Port Input	Port Output	Port Input/Output	8bit Timer	16bit Timer
ML620Q503H	1.8 to 5.5	32.768kHz (Internal RC oscillation/ Crystal oscillation/ External input)	16MHz (Internal RC oscillation/ Crystal oscillation/ External input)	62.5 ns 30.5μs	0.45μA	−40 to +85	Flash	32K	2K	2K	✓	2	–	36	8 (16bit×4)	4
ML620Q504H	1.8 to 5.5	32.768kHz (Internal RC oscillation/ Crystal oscillation/ External input)	16MHz (Internal RC oscillation/ Crystal oscillation/ External input)	62.5 ns 30.5μs	0.45μA	−40 to +85	Flash	64K	2K	6K	✓	2	–	36	8 (16bit×4)	4
搭载LCD驱动器　点阵式　16bit低功耗微控制器																
ML620Q416A	1.8 to 3.6	32.768kHz (Internal RC oscillation/ Crystal oscillation)	16MHz (Internal RC oscillation/PLL)	62.5 ns 30.5μs	0.38μA	−40 to +85	Flash	128K	4K	16K	✓	–	–	52	8 (16bit×4)	4
ML620Q418A	1.8 to 3.6	32.768kHz (Internal RC oscillation/ Crystal oscillation)	16MHz (Internal RC oscillation/PLL)	62.5 ns 30.5μs	0.38μA	−40 to +85	Flash	256K	4K	16K	✓	–	–	52	8 (16bit×4)	4

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32bit ML6304xx(Cortex-M)

搭载LCD驱动器　点阵式　32bit低功耗微控制器(工业设备用)

Part No.	Operating Conditions						ROM/RAM				Functions/Features						
	Operating Voltage (V)	Operating Frequency(Max.) Low Speed	Operating Frequency(Max.) High Speed	Minimum Instruction Execution Time	Current Consumption (Typ.@HALT)	Operating Temperature (℃)	ROM Type	ROM Capacity (Byte)	Data Flash Capacity (Byte)	RAM Capacity (Byte)	Co-processor for Multiplication and Division	Port Input	Port Output	Port Input/Output	8bit Timer	16bit Timer
New ML630Q464	1.8 to 3.6	32.768kHz (Internal RC oscillation/ Crystal oscillation)	16MHz(Internal RC oscillation) 24MHz(PLL)	41.7ns 30.5μs	0.8μA	−40 to +85	Flash	64K	2K	8K	32bit multiplier	–	–	38	8 (16bit×4)	4
New ML630Q466	1.8 to 3.6	32.768kHz (Internal RC oscillation/ Crystal oscillation)	16MHz(Internal RC oscillation) 24MHz(PLL)	41.7ns 30.5μs	0.8μA	−40 to +85	Flash	128K	2K	16K	32bit multiplier	–	–	38	8 (16bit×4)	4

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超低工作电压&超低功耗微控制器

8bit ML6104xx

标准型　8bit低功耗微控制器

Part No.	Operating Conditions						ROM/RAM				Functions/Features							
	Operating Voltage (V)	Operating Frequency(Max.) Low Speed	Operating Frequency(Max.) High Speed	Minimum Instruction Execution Time	Current Consumption (Typ.@HALT)	Operating Temperature (℃)	ROM Type	ROM Capacity (Byte)	Data Flash Capacity (Byte)	RAM Capacity (Byte)	Port Input	Port Output	Port Input/Output	8bit Timer	1kHz Timer	PWM	Capture	WDT
ML610482	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	0.5μA	−20 to +70	Mask	64K	–	4K	6	4	22	4 (16bit×2)	–	16bit×1	–	1
ML610Q482	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	0.5μA	−20 to +70	Flash	64K	–	4K	6	4	22	4 (16bit×2)	–	16bit×1	–	1
标准型　8bit低功耗微控制器(工业设备用)																		
ML610482P	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	0.5μA	−40 to +85	Mask	64K	–	4K	6	4	22	4 (16bit×2)	–	16bit×1	–	1
ML610Q482P	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	0.5μA	−40 to +85	Flash	64K	–	4K	6	4	22	4 (16bit×2)	–	16bit×1	–	1
搭载LCD驱动器　点阵式　8bit低功耗微控制器																		
ML610421	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	0.5μA	−20 to +70	Mask	32K	–	2K	6	3	22	4 (16bit×2)	1	16bit×1	2	1
ML610Q421	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	0.5μA	−20 to +70	Flash	32K	–	2K	6	3	22	4 (16bit×2)	1	16bit×1	2	1
ML610Q422	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	0.5μA	−20 to +70	Flash	32K	–	2K	6	3	14	4 (16bit×2)	1	16bit×1	2	1
ML610426	1.1 to 3.6	32.768kHz (Crystal oscillation)	1MHz	1μs/ 30.5μs	0.5μA	−20 to +70	Mask	40K	–	2K	5	–	7	4 (16bit×2)	1	16bit×1	–	1
ML610Q426	1.1 to 3.6	32.768kHz (Crystal oscillation)	1MHz	1μs/ 30.5μs	0.5μA	−20 to +70	Flash	40K	–	2K	5	–	7	4 (16bit×2)	1	16bit×1	–	1
ML610Q426C	1.1 to 3.6	32.768kHz (Crystal oscillation)	1MHz	1μs/ 30.5μs	0.5μA	−20 to +70	Flash	40K	–	2K	7	–	13	4 (16bit×2)	1	16bit×1	–	1
ML610Q428	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 2MHz	0.244μs/0.5μs/ 30.5μs	0.5μA	−20 to +70	Flash	48K	–	4K	6	3	14	2 (16bit×1)	1	16bit×3	–	1
ML610429	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 2MHz	0.244μs/0.5μs/ 30.5μs	0.5μA	−20 to +70	Mask	48K	–	4K	10	3	20	2 (16bit×1)	1	16bit×3	–	1
ML610Q429	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 2MHz	0.244μs/0.5μs/ 30.5μs	0.5μA	−20 to +70	Flash	48K	–	4K	10	3	20	2 (16bit×1)	1	16bit×3	–	1
ML610Q431	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	0.5μA	−20 to +70	Flash	64K	–	3K	6	3	22	4 (16bit×2)	1	16bit×1	2	1
ML610Q431A	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	0.5μA	−20 to +70	Flash	64K	–	3K	6	3	22	4 (16bit×2)	1	16bit×1	2	1
ML610Q432	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	0.5μA	−20 to +70	Flash	64K	–	3K	6	3	14	4 (16bit×2)	1	16bit×1	2	1
ML610Q432A	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	0.5μA	−20 to +70	Flash	64K	–	3K	6	3	14	4 (16bit×2)	1	16bit×1	2	1
ML610Q435	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	0.5μA	−20 to +70	Flash	96K	–	3K	6	3	22	4 (16bit×2)	1	16bit×1	2	1
ML610Q435A	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	0.5μA	−20 to +70	Flash	96K	–	3K	6	3	22	4 (16bit×2)	1	16bit×1	2	1
ML610Q436	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	0.5μA	−20 to +70	Flash	96K	–	3K	6	3	14	4 (16bit×2)	1	16bit×1	2	1
ML610Q436A	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	0.5μA	−20 to +70	Flash	96K	–	3K	6	3	14	4 (16bit×2)	1	16bit×1	2	1
ML610Q438	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 2MHz	0.244μs/0.5μs/ 30.5μs	0.5μA	−20 to +70	Flash	128K	–	7K	10	3	20	4 (16bit×2)	1	16bit×3	2	1
ML610Q439	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 2MHz	0.244μs/0.5μs/ 30.5μs	0.5μA	−20 to +70	Flash	128K	–	7K	10	3	20	4 (16bit×2)	1	16bit×3	2	1
搭载LCD驱动器　点阵式　8bit低功耗微控制器(工业设备用)																		
ML610Q421P	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	0.5μA	−40 to +85	Flash	32K	–	2K	6	3	22	4 (16bit×2)	1	16bit×1	2	1
ML610Q422P	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	0.5μA	−40 to +85	Flash	32K	–	2K	6	3	14	4 (16bit×2)	1	16bit×1	2	1
ML610Q439P	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 2MHz	0.244μs/0.5μs/ 30.5μs	0.5μA	−40 to +85	Flash	128K	–	7K	10	3	20	4 (16bit×2)	1	16bit×3	2	1

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(LAPIS Semiconductor产品)

Functions/Features																
PWM	Capture	WDT	ADC (method)	Serial Port I²C	Serial Port SSIO (SPI)	Serial Port UART	Serial Port USB	Supply Voltage Detection	LCD Driver	External Interrupt Sources	Others	Notes	Package	Chip Support	Halogen Free Support	Industrial Grade
16bit × 4 (use 16bit timer)	16bit × 4 (use 16bit timer)	1	24bit × 2(RC type) 12bit × 12(SA type)	2	2	2	–	VLS × 1 LLD × 1	–	8	Low speed frequency correction/ Analog comparator × 2/Melody : Buzzer	–	P-TQFP48-0707-0.50	✓	✓	✓
16bit × 4 (use 16bit timer)	16bit × 4 (use 16bit timer)	1	24bit × 2(RC type) 12bit × 12(SA type)	2	2	2	–	VLS × 1 LLD × 1	–	8	Low speed frequency correction/ Analog comparator × 2/Melody : Buzzer	–	P-TQFP48-0707-0.50	✓	✓	✓
16bit × 4 (use 16bit timer)	16bit × 4 (use 16bit timer)	1	24bit × 2(RC type) 12bit × 12(SA type)	3	2	3	–	VLS × 1 LLD × 1	Max. 2048dot 64seg. × 32com.	8	Low speed frequency correction/ Analog comparator × 2/ Melody : Buzzer/1kHz Timer	–	–	✓	✓	–
16bit × 4 (use 16bit timer)	16bit × 4 (use 16bit timer)	1	24bit × 2(RC type) 12bit × 12(SA type)	3	2	3	–	VLS × 1 LLD × 1	Max. 2048dot 64seg. × 32com.	8	Low speed frequency correction/ Analog comparator × 2/ Melody : Buzzer/1kHz Timer	–	–	✓	✓	–

(LAPIS Semiconductor产品)

Functions/Features																
PWM	Capture	WDT	ADC (method)	Serial Port I²C	Serial Port SSIO (SPI)	Serial Port UART	Serial Port USB	Supply Voltage Detection	LCD Driver	External Interrupt Sources	Others	Notes	Package	Chip Support	Halogen Free Support	Industrial Grade
16bit × 4 (use 16bit timer)	16bit × 4 (use 16bit timer)	1	24bit × 2(RC type) 12bit × 12(SA type)	2	2	2	1	VLS × 1 LLD × 1	Max. 400dot 50seg. × 8com.	8	AES/Random generator/DMA/RTC/ Analog comparator × 2/1kHz timer	–	P-TQFP100-1414-0.50	–	✓	✓
16bit × 4 (use 16bit timer)	16bit × 4 (use 16bit timer)	1	24bit × 2(RC type) 12bit × 12(SA type)	2	2	2	1	VLS × 1 LLD × 1	Max. 400dot 50seg. × 8com.	8	AES/Random generator/DMA/RTC/ Analog comparator × 2/1kHz timer	–	P-TQFP100-1414-0.50	–	✓	✓

(LAPIS Semiconductor产品)

Functions/Features														
ADC (method)	Serial Port I²C	Serial Port SSIO	Serial Port UART	Supply Voltage Detection	LCD Driver	External Interrupt Sources	Others	Notes	Package	Chip Support	Halogen Free Support	Industrial Grade
24bit × 2(RC type)	1	1	1	BLD × 1	–	5	Low speed frequency correction /Buzzer	–	–	✓	✓	–
24bit × 2(RC type)	1	1	1	BLD × 1	–	5	Low speed frequency correction /Buzzer	–	P-TQFP48-0707-0.50	✓	✓	–
24bit × 2(RC type)	1	1	1	BLD × 1	–	5	Low speed frequency correction /Buzzer	–	–	✓	✓	✓
24bit × 2(RC type)	1	1	1	BLD × 1	–	5	Low speed frequency correction /Buzzer	–	P-TQFP48-0707-0.50	✓	✓	✓
24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 400dot 50seg. × 8com.	5	Low speed frequency correction/ Melody : Buzzer	–	–	✓	✓	–
24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 400dot 50seg. × 8com.	5	Low speed frequency correction/ Melody : Buzzer	–	P-TQFP120-1414-0.40	✓	✓	–
24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 800dot 50seg. × 16com.	5	Low speed frequency correction/ Melody : Buzzer	Low-speed scillation stop detect reset : enable	P-TQFP120-1414-0.40	✓	✓	–
16bit × 1(RC type)	1	1	1	BLD × 1	Max. 800dot 50seg. × 16com.	5	Low speed frequency correction/Melody : Buzzer/ EL Driver/External input voltage detecttion	–	–	✓	✓	–
16bit × 1(RC type)	1	1	1	BLD × 1	Max. 800dot 50seg. × 16com.	5	Low speed frequency correction/Melody : Buzzer/ EL Driver/External input voltage detecttion	–	–	✓	✓	–
16bit × 1(RC type)	1	1	1	BLD × 1	Max. 672dot 42seg. × 16com.	8	Low speed frequency correction/Melody : Buzzer/ EL Driver/External input voltage detecttion	–	–	✓	✓	–
24bit × 2(RC type)	1	1	1	BLD × 1	Max. 1392dot 58seg. × 24com.	5	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable/disable according to software	TQFP128-P-1414-0.40	✓	✓	–
24bit × 2(RC type)	1	1	1	BLD × 1	Max. 512dot 64seg. × 8com.	9	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable/disable according to software	–	✓	✓	–
24bit × 2(RC type)	1	1	1	BLD × 1	Max. 512dot 64seg. × 8com.	9	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable/disable according to software	TQFP128-P-1414-0.40	✓	✓	–
24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 1024dot 64seg. × 16com.	5	RTC/Low speed frequency correction/ Melody : Buzzer	Low-speed scillation stop detect reset : enable	P-LQFP144-2020-0.50	✓	✓	–
24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 1024dot 64seg. × 16com.	5	RTC/Low speed frequency correction/ Melody : Buzzer	Low-speed scillation stop detect reset : disenable	–	✓	✓	–
24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 1536dot 64seg. × 24com.	5	RTC/Low speed frequency correction/ Melody : Buzzer	Low-speed scillation stop detect reset : enable	P-LQFP144-2020-0.50	✓	✓	–
24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 1536dot 64seg. × 24com.	5	RTC/Low speed frequency correction/ Melody : Buzzer	Low-speed scillation stop detect reset : disenable	P-LQFP144-2020-0.50	✓	✓	–
24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 1024dot 64seg. × 16com.	5	RTC/Low speed frequency correction/ Melody : Buzzer	Low-speed scillation stop detect reset : enable	–	✓	✓	–
24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 1024dot 64seg. × 16com.	5	RTC/Low speed frequency correction/ Melody : Buzzer	Low-speed scillation stop detect reset : disenable	P-LQFP144-2020-0.50	✓	✓	–
24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 1536dot 64seg. × 24com.	5	RTC/Low speed frequency correction/ Melody : Buzzer	Low-speed scillation stop detect reset : enable	–	✓	✓	–
24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 1536dot 64seg. × 24com.	5	RTC/Low speed frequency correction/ Melody : Buzzer	Low-speed scillation stop detect reset : disenable	P-LQFP144-2020-0.50	✓	✓	–
24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 1344dot 56seg. × 24com.	9	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable/disable according to software	P-LQFP144-2020-0.50	✓	✓	–
24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 1024dot 64seg. × 16com.	9	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable/disable according to software	–	✓	✓	–
24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 400dot 50seg. × 8com.	5	Low speed frequency correction/ Melody : Buzzer	–	P-TQFP120-1414-0.40	✓	✓	✓
24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 800dot 50seg. × 16com.	5	Low speed frequency correction/ Melody : Buzzer	Low-speed scillation stop detect reset : enable	P-TQFP120-1414-0.40	✓	✓	✓
24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 1024dot 64seg. × 16com.	9	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable/disable according to software	P-LQFP144-2020-0.50	–	✓	✓

8bit ML6104xx

搭载LCD驱动器　段码式　8bit低功耗微控制器

Part No.	Operating Conditions						ROM/RAM				Functions/Features							
	Operating Voltage (V)	Operating Frequency(Max.)		Minimum Instruction Execution Time	Current Consumption (Typ.@HALT)	Operating Temperature (°C)	ROM Type	ROM Capacity (Byte)	Data Flash Capacity (Byte)	RAM Capacity (Byte)	Port			8bit Timer	1kHz Timer	PWM	Capture	WDT
		Low Speed	High Speed								Input	Output	Input/Output					
ML610401	1.25 to 3.6	32.768kHz (Crystal oscillation)	500kHz	2μs/ 30.5μs	0.9μA	−20 to +70	Mask	6K	–	192	4	12	18	2 (16bit×1)	–	–	2	1
ML610402	1.25 to 3.6	32.768kHz (Crystal oscillation)	500kHz	2μs/ 30.5μs	0.9μA	−20 to +70	Mask	6K	–	192	4	8	18	2 (16bit×1)	–	–	2	1
ML610403	1.25 to 3.6	32.768kHz (Crystal oscillation)	500kHz	2μs/ 30.5μs	0.9μA	−20 to +70	Mask	6K	–	192	4	4	18	2 (16bit×1)	–	–	2	1
ML610404	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−20 to +70	Mask	8K	–	256	5	12	22	4 (16bit×2)	–	16bit×1	2	1
ML610405	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−20 to +70	Mask	8K	–	256	5	8	22	4 (16bit×2)	–	16bit×1	2	1
ML610406	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−20 to +70	Mask	8K	–	256	5	4	22	4 (16bit×2)	–	16bit×1	2	1
ML610407	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−20 to +70	Mask	16K	–	1K	5	12	22	4 (16bit×2)	–	16bit×1	2	1
ML610Q407	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−20 to +70	Flash	16K	–	1K	5	12	22	4 (16bit×2)	–	16bit×1	2	1
ML610Q407A	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−20 to +70	Flash	16K	–	1K	5	12	22	4 (16bit×2)	–	16bit×1	2	1
ML610Q407D	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−20 to +70	Flash	16K	–	1K	5	12	22	4 (16bit×2)	–	16bit×1	2	1
ML610408	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−20 to +70	Mask	16K	–	1K	5	8	22	4 (16bit×2)	–	16bit×1	2	1
ML610Q408	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−20 to +70	Flash	16K	–	1K	5	8	22	4 (16bit×2)	–	16bit×1	2	1
ML610409	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−20 to +70	Mask	16K	–	1K	5	4	22	4 (16bit×2)	–	16bit×1	2	1
ML610Q409	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−20 to +70	Flash	16K	–	1K	5	4	22	4 (16bit×2)	–	16bit×1	2	1
ML610Q409A	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−20 to +70	Flash	16K	–	1K	5	4	22	4 (16bit×2)	–	16bit×1	2	1
ML610Q411	1.1 to 3.6	32.768kHz (Crystal oscillation)	500kHz	2μs/ 30.5μs	0.5μA	−20 to +70	Flash	16K	–	1K	6	3	22	4 (16bit×2)	1	16bit×1	2	1
ML610Q412	1.1 to 3.6	32.768kHz (Crystal oscillation)	500kHz	2μs/ 30.5μs	0.5μA	−20 to +70	Flash	16K	–	1K	6	3	14	4 (16bit×2)	1	16bit×1	2	1
ML610Q418	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	1.1μA	−20 to +70	Flash	128K	4K	4K	6	3	18	4 (16bit×2)	–	16bit×1	2	1
ML610Q418C	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	1.1μA	−20 to +70	Flash	128K	4K	4K	6	3	26	4 (16bit×2)	–	16bit×1	2	1
ML610Q419	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	0.9μA	−20 to +70	Flash	64K	4K	2K	6	3	18	4 (16bit×2)	–	16bit×1	2	1
ML610Q419C	1.1 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz 500kHz	0.244μs/2μs/ 30.5μs	0.9μA	−20 to +70	Flash	64K	4K	2K	6	3	26	4 (16bit×2)	–	16bit×1	2	1
ML610Q461	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz 500kHz	0.5μs/2μs/ 30.5μs	0.9μA	−20 to +70	Flash	16K	–	1K	5	10	14	4 (16bit×2)	–	16bit×1	2	1
ML610Q462	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz 500kHz	0.5μs/2μs/ 30.5μs	0.9μA	−20 to +70	Flash	16K	–	1K	5	6	14	4 (16bit×2)	–	16bit×1	2	1
ML610Q463	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz 500kHz	0.5μs/2μs/ 30.5μs	0.9μA	−20 to +70	Flash	16K	–	1K	5	2	14	4 (16bit×2)	–	16bit×1	2	1
ML610Q477	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz 500kHz	0.5μs/2μs/ 30.5μs	0.8μA	−20 to +70	Flash	24K	–	2K	4	10	15	6 (16bit×3)	–	–	2	1
ML610Q478	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz 500kHz	0.5μs/2μs/ 30.5μs	0.8μA	−20 to +70	Flash	24K	–	2K	4	6	15	6 (16bit×3)	–	–	2	1
ML610Q479	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz 500kHz	0.5μs/2μs/ 30.5μs	0.8μA	−20 to +70	Flash	24K	–	2K	4	2	15	6 (16bit×3)	–	–	2	1

搭载LCD驱动器　段码式　8bit低功耗微控制器(工业设备用)

ML610401P	1.25 to 3.6	32.768kHz (Crystal oscillation)	500kHz	2μs/ 30.5μs	0.9μA	−40 to +85	Mask	6K	–	192	4	12	18	2 (16bit×1)	–	–	2	1
ML610402P	1.25 to 3.6	32.768kHz (Crystal oscillation)	500kHz	2μs/ 30.5μs	0.9μA	−40 to +85	Mask	6K	–	192	4	8	18	2 (16bit×1)	–	–	2	1
ML610403P	1.25 to 3.6	32.768kHz (Crystal oscillation)	500kHz	2μs/ 30.5μs	0.9μA	−40 to +85	Mask	6K	–	192	4	4	18	2 (16bit×1)	–	–	2	1
ML610404P	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−40 to +85	Mask	8K	–	256	5	12	22	4 (16bit×2)	–	16bit×1	2	1
ML610405P	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−40 to +85	Mask	8K	–	256	5	8	22	4 (16bit×2)	–	16bit×1	2	1
ML610406P	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−40 to +85	Mask	8K	–	256	5	4	22	4 (16bit×2)	–	16bit×1	2	1
ML610407P	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−40 to +85	Mask	16K	–	1K	5	12	22	4 (16bit×2)	–	16bit×1	2	1
ML610Q407P	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−40 to +85	Flash	16K	–	1K	5	12	22	4 (16bit×2)	–	16bit×1	2	1
ML610Q407PA	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−40 to +85	Flash	16K	–	1K	5	12	22	4 (16bit×2)	–	16bit×1	2	1
ML610408P	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−40 to +85	Mask	16K	–	1K	5	8	22	4 (16bit×2)	–	16bit×1	2	1
ML610Q408P	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−40 to +85	Flash	16K	–	1K	5	8	22	4 (16bit×2)	–	16bit×1	2	1
ML610409P	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−40 to +85	Mask	16K	–	1K	5	4	22	4 (16bit×2)	–	16bit×1	2	1
ML610Q409P	1.25 to 3.6	32.768kHz (Crystal oscillation)	2MHz	0.5μs/ 30.5μs	0.9μA	−40 to +85	Flash	16K	–	1K	5	4	22	4 (16bit×2)	–	16bit×1	2	1
ML610Q411P	1.1 to 3.6	32.768kHz (Crystal oscillation)	500kHz	2μs/ 30.5μs	0.5μA	−40 to +85	Flash	16K	–	1K	6	3	22	4 (16bit×2)	1	16bit×1	2	1
ML610Q411PA	1.1 to 3.6	32.768kHz (Crystal oscillation)	500kHz	2μs/ 30.5μs	0.5μA	−40 to +85	Flash	16K	–	1K	6	3	22	4 (16bit×2)	1	16bit×1	2	1
ML610Q412P	1.1 to 3.6	32.768kHz (Crystal oscillation)	500kHz	2μs/ 30.5μs	0.5μA	−40 to +85	Flash	16K	–	1K	6	3	14	4 (16bit×2)	1	16bit×1	2	1

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(LAPIS Semiconductor产品)

Functions/Features													
	ADC (method)	Serial Port			Supply Voltage Detection	LCD Driver	External Interrupt Sources	Others	Notes	Package	Chip Support	Halogen Free Support	Industrial Grade
		I²C	SSIO	UART									
	16bit × 2(RC type)	–	–	1	–	Max. 55dot 11seg. × 5com.	8 (include 4bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable according to software LCD bias : 1/3	–	✓	✓	–
	16bit × 2(RC type)	–	–	1	–	Max. 75dot 15seg. × 5com.	8 (include 4bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable according to software LCD bias : 1/3	–	✓	✓	–
	16bit × 2(RC type)	–	–	1	–	Max. 95dot 19seg. × 5com.	8 (include 4bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable according to software LCD bias : 1/3	–	✓	✓	–
	16bit × 2(RC type)	–	2	1	–	Max. 105dot 21seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable according to software LCD bias : 1/2, 1/3	–	✓	✓	–
	16bit × 2(RC type)	–	2	1	–	Max. 125dot 25seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable according to software LCD bias : 1/2, 1/3	–	✓	✓	–
	16bit × 2(RC type)	–	2	1	–	Max. 145dot 29seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable according to software LCD bias : 1/2, 1/3	–	✓	✓	–
	16bit × 2(RC type)	–	2	1	–	Max. 145dot 29seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable according to software LCD bias : 1/3	–	✓	✓	–
	16bit × 2(RC type)	–	2	1	–	Max.145dot 29seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Low-speed scillation stop detect reset : enable LCD bias : 1/3	P-TQFP100-1414-0.50	✓	✓	–
	16bit × 2(RC type)	–	2	1	–	Max.145dot 29seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Low-speed scillation stop detect reset : disenable LCD bias : 1/2, 1/3	–	✓	✓	–
	16bit × 2(RC type)	–	2	1	–	Max.145dot 29seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Low-speed scillation stop detect reset : enable LCD bias : 1/2, 1/3	–	✓	✓	–
	16bit × 2(RC type)	–	2	1	–	Max. 165dot 33seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable according to software LCD bias : 1/3	–	✓	✓	–
	16bit × 2(RC type)	–	2	1	–	Max. 165dot 33seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Low-speed scillation stop detect reset : enable LCD bias : 1/3	P-TQFP100-1414-0.50	✓	✓	–
	16bit × 2(RC type)	–	2	1	–	Max. 185dot 37seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable according to software LCD bias : 1/3	–	✓	✓	–
	16bit × 2(RC type)	–	2	1	–	Max. 185dot 37seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Low-speed scillation stop detect reset : enable LCD bias : 1/3	P-TQFP100-1414-0.50	✓	✓	–
	16bit × 2(RC type)	–	2	1	–	Max. 185dot 37seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Low-speed scillation stop detect reset : disenable LCD bias : 1/2, 1/3	–	✓	✓	–
	24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 144dot 36seg. × 4com.	5	Low speed frequency correction/ Buzzer	Low-speed scillation stop detect reset : enable	P-TQFP120-1414-0.40	✓	✓	–
	24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 176dot 44seg. × 4com.	5	Low speed frequency correction/ Buzzer	–	P-TQFP120-1414-0.40	✓	✓	–
	24bit × 2(RC type) 12bit × 4(SA type)	1	2	1	BLD × 1	Max. 192dot 48seg. × 4com.	5	Low speed frequency correction/ Melody : Buzzer	–	P-TQFP100-1414-0.50	✓	✓	–
	24bit × 2(RC type) 12bit × 4(SA type)	1	2	1	BLD × 1	Max. 160dot 40seg. × 4com.	5	Low speed frequency correction/ Melody : Buzzer	–	P-TQFP100-1414-0.50	✓	✓	–
	24bit × 2(RC type) 12bit × 4(SA type)	1	2	1	BLD × 1	Max. 192dot 48seg. × 4com.	5	Low speed frequency correction/ Melody : Buzzer	–	P-TQFP100-1414-0.50	✓	✓	–
	24bit × 2(RC type) 12bit × 4(SA type)	1	2	1	BLD × 1	Max. 160dot 40seg. × 4com.	5	Low speed frequency correction/ Melody : Buzzer	–	P-TQFP100-1414-0.50	✓	✓	–
	16bit × 2(RC type)	–	1	1	–	Max. 64dot 16seg. × 4com.	5	Low speed frequency correction	–	P-TQFP64-1010-0.50	–	✓	–
	16bit × 2(RC type)	–	1	1	–	Max. 80dot 20seg. × 4com.	5	Low speed frequency correction	–	P-TQFP64-1010-0.50	–	✓	–
	16bit × 2(RC type)	–	1	1	–	Max. 96dot 24seg. × 4com.	5	Low speed frequency correction	–	P-TQFP64-1010-0.50	–	✓	–
	16bit × 1(RC type)	–	–	1	–	Max. 135dot 27seg. × 5com.	12 (include 8bit-OR input)	Low speed frequency correction/ Analog comparator	–	–	✓	✓	–
	16bit × 1(RC type)	–	–	1	–	Max. 155dot 31seg. × 5com.	12 (include 8bit-OR input)	Low speed frequency correction/ Analog comparator	–	–	✓	✓	–
	16bit × 1(RC type)	–	–	1	–	Max. 175dot 35seg. × 5com.	12 (include 8bit-OR input)	Low speed frequency correction/ Analog comparator	–	–	✓	✓	–
	16bit × 2(RC type)	–	–	1	–	Max. 55dot 11seg. × 5com.	8 (include 4bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable according to software LCD bias : 1/3	–	✓	✓	✓
	16bit × 2(RC type)	–	–	1	–	Max. 75dot 15seg. × 5com.	8 (include 4bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable according to software LCD bias : 1/3	–	✓	✓	✓
	16bit × 2(RC type)	–	–	1	–	Max. 95dot 19seg. × 5com.	8 (include 4bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable according to software LCD bias : 1/3	–	✓	✓	✓
	16bit × 2(RC type)	–	2	1	–	Max. 105dot 21seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable according to software LCD bias : 1/2, 1/3	–	✓	✓	✓
	16bit × 2(RC type)	–	2	1	–	Max. 125dot 25seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable according to software LCD bias : 1/2, 1/3	–	✓	✓	✓
	16bit × 2(RC type)	–	2	1	–	Max. 145dot 29seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable according to software LCD bias : 1/2, 1/3	–	✓	✓	✓
	16bit × 2(RC type)	–	2	1	–	Max. 145dot 29seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable according to software LCD bias : 1/3	–	✓	✓	✓
	16bit × 2(RC type)	–	2	1	–	Max. 145dot 29seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Low-speed scillation stop detect reset : enable LCD bias : 1/3	P-TQFP100-1414-0.50	✓	✓	✓
	16bit × 2(RC type)	–	2	1	–	Max. 145dot 29seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Low-speed scillation stop detect reset : disenable LCD bias : 1/2, 1/3	–	✓	✓	✓
	16bit × 2(RC type)	–	2	1	–	Max. 165dot 33seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable according to software LCD bias : 1/3	–	✓	✓	✓
	16bit × 2(RC type)	–	2	1	–	Max. 165dot 33seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Low-speed scillation stop detect reset : enable LCD bias : 1/3	P-TQFP100-1414-0.50	✓	✓	✓
	16bit × 2(RC type)	–	2	1	–	Max. 185dot 37seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Selectable oscillation stop detection reset : function enable according to software LCD bias : 1/3	–	✓	✓	✓
	16bit × 2(RC type)	–	2	1	–	Max. 185dot 37seg. × 5com.	13 (include 8bit-OR input)	Low speed frequency correction/ Melody : Buzzer	Low-speed scillation stop detect reset : enable LCD bias : 1/3	P-TQFP100-1414-0.50	✓	✓	✓
	24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 144dot 36seg. × 4com.	5	Low speed frequency correction/ Buzzer	Low-speed scillation stop detect reset : enable	P-TQFP120-1414-0.40	✓	✓	✓
	24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 144dot 36seg. × 4com.	5	Low speed frequency correction/ Buzzer	Low-speed scillation stop detect reset : disenable	P-TQFP120-1414-0.40	✓	✓	✓
	24bit × 2(RC type) 12bit × 2(SA type)	1	1	1	BLD × 1	Max. 176dot 44seg. × 4com.	5	Low speed frequency correction/ Buzzer	–	P-TQFP120-1414-0.40	✓	✓	✓

搭载语音输出功能的微控制器

8bit ML6103xx

标准型　8bit低功耗微控制器(工业设备用)

Part No.	Operating Conditions						ROM/RAM					Functions/Features		
	Operating Voltage (V)	Operating Frequency(Max.)		Minimum Instruction Execution Time	Current Consumption (Typ.@HALT)	Operating Temperature (°C)	ROM Type	ROM Capacity (Byte)	Data Flash Capacity (Byte)	Memory for Sound	RAM Capacity (Byte)	Port		
		Low Speed	High Speed									Input	Output	Input/Output
ML610Q304	2.0 to 5.5	32.768kHz (Internal RC oscillation)	8.192MHz	0.122μs/ 30.5μs	2.7μA	– 40 to + 85	Flash	96K	2K	Flash ROM	1K	1	3	11
ML610Q359	2.2 to 3.6	32.768kHz (Crystal oscillation)	8.192MHz	0.122μs/ 30.5μs	1.7μA	– 40 to + 85	Flash	160K	3K	Flash ROM	2K	8	3	29
ML610Q360	2.2 to 3.6	32.768kHz (Crystal oscillation)	8.192MHz	0.122μs/ 30.5μs	1.7μA	– 40 to + 85	Flash P2ROM	160K	3K	P2ROM: 16M bit	2K	8	3	29

搭载LCD驱动器 段码式　8bit低功耗微控制器

Part No.	Operating Conditions						ROM/RAM					Functions/Features		
	Operating Voltage (V)	Operating Frequency(Max.)		Minimum Instruction Execution Time	Current Consumption (Typ.@HALT)	Operating Temperature (°C)	ROM Type	ROM Capacity (Byte)	Data Flash Capacity (Byte)	Memory for Sound	RAM Capacity (Byte)	Port		
		Low Speed	High Speed									Input	Output	Input/Output
ML610Q380	2.2 to 5.5	32.768kHz (Internal RC oscillation/ Crystal oscillation)	8.192MHz	0.122μs 30.5μs	2.0μA	– 40 to + 70	Flash	128K	–	Flash ROM	2K	7	4	34

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传感器控制用微控制器

8bit ML61079x

搭载U8内核 标准型　8bit低功耗微控制器

Part No.	Operating Conditions						ROM/RAM				Functions/Features		
	Operating Voltage (V)	Operating Frequency(Max.)		Minimum Instruction Execution Time	Current Consumption (Typ.@HALT)	Operating Temperature (°C)	ROM Type	ROM Capacity (Byte)	Data Flash Capacity (Byte)	RAM Capacity (Byte)	Port		
		Low Speed	High Speed								Input	Output	Input/ Output
ML610Q793*	V_{DD} : 1.7 to 1.9 AV_{DD} : 2.5 to 3.6	32.768kHz (External clock)	4.096MHz	0.25μs/ 30.5μs	0.6μA	– 30 to + 85	Flash	64K	–	4K	–	–	21
ML610Q794G*	2.5 to 3.6	32.768kHz (Crystal oscillation)	4.096MHz	0.25μs/ 30.5μs	1.1μA	– 30 to + 85	Flash	64K	–	4K	–	–	21

＊：不推荐用于新开发
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32bit ML63079x

搭载ARM Cortex-M0 标准型　32bit低功耗微控制器

Part No.	Operating Conditions						ROM/RAM				Functions/Features		
	Operating Voltage (V)	Operating Frequency(Max.)		Minimum Instruction Execution Time	Current Consumption (Typ.@SLEEPDEEP)	Operating Temperature (°C)	ROM Type	ROM Capacity (Byte)	Data Flash Capacity (Byte)	RAM Capacity (Byte)	Port		
		Low Speed	High Speed								Input	Output	Input/ Output
ML630Q791*	V_{DD} : 1.7 to 1.9	32.768kHz (External clock)	32MHz	–	2.5μA	– 40 to + 85	Flash	128K	–	16K	–	–	7

＊：不推荐用于新开发

(LAPIS Semiconductor产品)

	Functions/Features											Notes	Package	Chip Support	Halogen Free Support	Industrial Grade
	8bit Timer	PWM	WDT	ADC (method)	Serial Port I²C	Serial Port SSIO	Serial Port UART	Supply Voltage Detection	LCD Driver	External Interrupt Sources	SP Amp Output(W)/Class	Others					
	4 (16bit × 2)	–	1	10bit × 3 (SA type)	1	2	1	–	–	8	1.0(@5V) /D class	Speech function/ ADPCM decoder/ Built-in speaker amp.	–	P-VQFN28-0505-0.50	–	✓	✓
	8 (16bit × 4)	–	1	12bit × 4 (SA type)	–	2	2	VLS × 1	–	7	0.5(@3V) /AB class	Speech function/ ADPCM decoder/ Built-in speaker amp.	–	P-TQFP64-1010-0.50	–	✓	✓
	8 (16bit × 4)	–	1	12bit × 4 (SA type)	–	2	2	VLS × 1	–	7	0.5(@3V) /AB class	Speech function/ ADPCM decoder/ Built-in speaker amp.	–	P-TQFP64-1010-0.50	–	–	✓
	6 (16bit × 3)	16bit × 2	1	10bit × 8 (SA type)	1	2	2	BLD × 1	Max. 96dot 24seg. × 4com.	5	0.6(@5V) /AB class	Speech function/ ADPCM decoder/ Built-in speaker amp.	–	P-QFP80-1414-0.65	–	–	–

(LAPIS Semiconductor产品)

	Functions/Features										Notes	Package	Chip Support	Halogen Free Support	Industrial Grade
	8bit Timer	PWM	WDT	ADC (method)	Serial Port I²C	Serial Port SSIO	Serial Port UART	Serial Port I²C/SPI(for Host Communication)	External Interrupt Sources	Others					
	6 (16bit × 3)	–	1	12bit × 3 (SA type)	1	1	2	1	16	16bit Square Root, Multiply, Divider, Host I/F(SPI/I²C/Logging RAM : 8KB)	–	S-UFLGA48-3.06 × 2.96-0.40 (WCSP48)	–	✓	–
	6 (16bit × 3)	–	1	12bit × 2 (SA type)	1	1	2	1	16	16bit Square Root, Multiply, Divider, Host I/F(SPI/I²C/Logging RAM : 8KB)	–	P-TQFP48-0707-0.50	–	✓	–

(LAPIS Semiconductor产品)

	Functions/Features										Notes	Package	Chip Support	Halogen Free Support	Industrial Grade
	8bit Timer	PWM	WDT	ADC (method)	Serial Port I²C	Serial Port SSIO	Serial Port UART	Serial Port I²C/SPI(for Host Communication)	External Interrupt Sources	Others					
	8 (16bit × 4)	1	1	–	2	–	1	1	7	Square Root, Division operations,Host I/F(Built-in 512 byte communication register)	–	(WCSP)	–	✓	–