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Product Specifications of the 16 New MCUs in R8C/Lx Series

1. R8C/LA8A Group 80-Pin-Package Versions

Item	Specifications			
Group name	**R8C/LA8A**			
Type Name (1) 12 mm × 12 mm 80-Pin LQFP (Operating temperature range)	• R5F2LA84ANFP (−20 to 85℃) • R5F2LA84ADFP (−40 to 85℃)	• R5F2LA86ANFP (−20 to 85℃) • R5F2LA86ADFP (−40 to 85℃)	• R5F2LA87ANFP (−20 to 85℃) • R5F2LA87ADFP (−40 to 85℃)	• R5F2LA88ANFP (−20 to 85℃) • R5F2LA88ADFP (−40 to 85℃)
Type Name (2) 14 mm × 14 mm 80-Pin LQFP (Operating temperature range)	• R5F2LA84ANFA (−20 to 85℃) • R5F2LA84ADFA (−40 to 85℃)	• R5F2LA86ANFA (−20 to 85℃) • R5F2LA86ADFA (−40 to 85℃)	• R5F2LA87ANFA (−20 to 85℃) • R5F2LA87ADFA (−40 to 85℃)	• R5F2LA88ANFA (−20 to 85℃) • R5F2LA88ADFA (−40 to 85℃)
CPU core	16-bit CPU core: R8C CPU			
Maximum operating frequency/power supply voltage	• 20 MHz/2.7 to 5.5 V • 5 MHz/1.8 to 5.5 V			
Operating temperature range	−20 to 85℃ (N Version) and −40 to 85℃ (D Version)			
Flash memory	16KB	32KB	48KB	64KB
Data flash	1 kbyte × 2 blocks			
RAM	2KB	2KB	3.5KB	3.5KB
	Timers			

Item	Specifications
On-chip peripheral functions	• 16-bit timer: 4 channels (input capture/output compare function/event counter function) • 8-bit timer: 3 channels (programmable waveform generator/compare match function/full-calendar RTC)
	Watchdog timer: 14 bits × 1 channel (with prescaler)
	Serial interfaces: • UART (dual synchronous/asynchronous serial I/O use): 1 channel • UART (dual synchronous/asynchronous serial I/O use / I^2C / multiprocessor communication synchronization): 1 channel • I^2C bus interface / Synchronous Serial Communication Unit: 1 channel
	Programmable I/O ports • CMOS I/O ports: 72 ports (pull-up resistor selection possible) • Large-current drive ports: 10 ports
	Power-on reset circuit
	Voltage detection circuit: 3 channels (detection level selectable for voltage detection 1)
	Oscillation circuit • Main clock oscillation circuit (with built-in main clock oscillation stoppage detection function) • Subclock oscillation circuit (32 kHz) • High-speed on-chip oscillator • Low-speed on-chip oscillator • Low-power-consumption features (standard mode <high-speed clock, low-speed clock, high-speed on-chip oscillator, low-speed on-chip oscillator> wait mode, stop mode, power-off mode)
	Interrupts • Interrupts: 69 • External interrupt inputs: 16 (INT × 8, key input × 8)

Item	Specifications
	• Interrupt priority levels: 8 levels
	10-bit A/D converter × 12 channels, sample & hold, trace mode, max. ×8 gain amplifier
	Temperature sensor: Measurable temperature range of 0℃ to 85℃
	Comparator B: 2 channels
	LCD drive control circuit • Bias value : 1/2, 1/3, • Duty cycle: static 1/2, 1/3, 1/4 • Segment output: 40 (max.) • Common output: 4 (max.)
Packages	• (1) 80-pin LQFP (12 mm × 12 mm, 0.50 mm pitch) • (2) 80-pin LQFP (14 mm × 14 mm, 0.65 mm pitch)

2. R8C/LA6A Group 64-Pin-Package Versions

Item	**Specifications**			
Group name	**R8C/LA6A**			
Type Name (1) 10 mm × 10 mm 64-Pin LQFP (Operating temperature range)	• R5F2LA64ANFP (−20 to 85℃) • R5F2LA64ADFP (−40 to 85℃)	• R5F2LA66ANFP (−20 to 85℃) • R5F2LA66ADFP (−40 to 85℃)	• R5F2LA67ANFP (−20 to 85℃) • R5F2LA67ADFP (−40 to 85℃)	• R5F2LA68ANFP (−20 to 85℃) • R5F2LA68ADFP (−40 to 85℃)
Type Name (2) 14 mm × 14 mm 64-Pin LQFP (Operating temperature range)	• R5F2LA64ANFA (−20 to 85℃) • R5F2LA64ADFA (−40 to 85℃)	• R5F2LA66ANFA (−20 to 85℃) • R5F2LA66ADFA (−40 to 85℃)	• R5F2LA67ANFA (−20 to 85℃) • R5F2LA67ADFA (−40 to 85℃)	• R5F2LA68ANFA (−20 to 85℃) • R5F2LA68ADFA (−40 to 85℃)

Item	Specifications			
Type Name (3) 8 mm × 8 mm 64-Pin VQFN (Operating temperature range)	• R5F2LA64ANNP (−20 to 85℃) • R5F2LA64ADNP (−40 to 85℃)	• R5F2LA66ANNP (−20 to 85℃) • R5F2LA66ADNP (−40 to 85℃)	• R5F2LA67ANNP (−20 to 85℃) • R5F2LA67ADNP (−40 to 85℃)	• R5F2LA68ANNP (−20 to 85℃) • R5F2LA68ADNP (−40 to 85℃)
CPU core	16-bit CPU core: R8C CPU			
Maximum operating frequency/power supply voltage	• 20 MHz/2.7 to 5.5 V • 5 MHz/1.8 to 5.5 V			
Operating temperature range	−20 to 85℃ (N Version) and −40 to 85℃ (D Version)			
Flash memory	16KB	32KB	48KB	64KB
Data flash	1 kbyte × 2 blocks			
RAM	2KB	2KB	3.5KB	3.5KB
On-chip peripheral functions	Timers • 16-bit timer: 3 channels (input capture/output compare function/event counter function) • 8-bit timer: 3 channels (programmable waveform generator/compare match function/full-calendar RTC)			
	Watchdog timer: 14 bits × 1 channel (with prescaler)			
	Serial interfaces: • UART (dual synchronous/asynchronous serial I/O use): 1 channel • I^2C bus interface / Synchronous Serial Communication Unit: 1 channel			
	Programmable I/O ports			

Item	Specifications
	• CMOS I/O ports: 56 ports (pull-up resistor selection possible) • Large-current drive ports: 8 ports
	Power-on reset circuit
	Voltage detection circuit: 3 channels (detection level selectable for voltage detection 1)
	Oscillation circuit • Main clock oscillation circuit (with built-in main clock oscillation stoppage detection function) • Subclock oscillation circuit (32 kHz) • High-speed on-chip oscillator • Low-speed on-chip oscillator • Low-power-consumption features (standard mode <high-speed clock, low-speed clock, high-speed on-chip oscillator, low-speed on-chip oscillator> wait mode, stop mode, power-off mode)
	Interrupts • Interrupts: 69 • External interrupt inputs: 12 (INT × 4, key input × 8) • Interrupt priority levels: 8 levels
	10-bit A/D converter × 8 channels, sample & hold, trace mode, max. ×8 gain amplifier
	Temperature sensor: Measurable temperature range of 0℃ to 85℃
	Comparator B: 2 channels
	LCD drive control circuit • Bias value : 1/2, 1/3, • Duty cycle: static 1/2, 1/3, 1/4 • Segment output: 32 (max.) • Common output: 4 (max.)
Packages	(1) 64-pin LQFP (10 mm × 10 mm, 0.50 mm pitch)

Item	Specifications
	(2) 64-pin LQFP (14 mm × 14 mm, 0.80 mm pitch) (3) 64-pin VQFN (8 mm × 8 mm, 0.40 mm pitch)

3. R8C/LA5A Group 52-Pin-Package Versions

Item	Specifications			
Group name	**R8C/LA5A**			
Type Name (1) 10 mm × 10 mm 52-Pin LQFP (Operating temperature range)	• R5F2LA52ANFP (−20 to 85℃) • R5F2LA52ADFP (−40 to 85℃)	• R5F2LA54ANFP (−20 to 85℃) • R5F2LA54ADFP (−40 to 85℃)	• R5F2LA56ANFP (−20 to 85℃) • R5F2LA56ADFP (−40 to 85℃)	• R5F2LA58ANFP (−20 to 85℃) • R5F2LA58ADFP (−40 to 85℃)
CPU core	16-bit CPU core: R8C CPU			
Maximum operating frequency/power supply voltage	• 20 MHz/2.7 to 5.5 V • 5 MHz/1.8 to 5.5 V			
Operating temperature range	−20 to 85℃ (N Version) and −40 to 85℃ (D Version)			
Flash memory	8KB	16KB	32KB	64KB
Data flash	1 kbyte × 2 blocks			
RAM	2KB	2KB	2KB	3.5KB
On-chip peripheral functions	Timers • 16-bit timer: 3 channels (input capture/output compare function/event counter function) • 8-bit timer: 3 channels (programmable waveform generator/compare match function/full-calendar RTC)			
	Watchdog timer: 14 bits × 1 channel (with prescaler)			

Item	Specifications
	Serial interfaces: • UART (dual synchronous/asynchronous serial I/O use): 1 channel • I^2C bus interface / Synchronous Serial Communication Unit: 1 channel
	Programmable I/O ports • CMOS I/O ports: 44 ports (pull-up resistor selection possible) • Large-current drive ports: 8 ports
	Power-on reset circuit
	Voltage detection circuit: 3 channels (detection level selectable for voltage detection 1)
	Oscillation circuit • Main clock oscillation circuit (with built-in main clock oscillation stoppage detection function) • Subclock oscillation circuit (32 kHz) • High-speed on-chip oscillator • Low-speed on-chip oscillator • Low-power-consumption features (standard mode <high-speed clock, low-speed clock, high-speed on-chip oscillator, low-speed on-chip oscillator> wait mode, stop mode, power-off mode)
	Interrupts • Interrupts: 69 • External interrupt inputs: 12 (INT × 4, key input × 8) • Interrupt priority levels: 8 levels
	10-bit A/D converter × 6 channels, sample & hold, trace mode, max. ×8 gain amplifier
	Temperature sensor: Measurable temperature range of 0℃ to 85℃
	Comparator B: 2 channels
	LCD drive control circuit • Bias value : 1/2, 1/3,

Item	Specifications
	• Duty cycle: static 1/2, 1/3, 1/4 • Segment output: 27 (max.) • Common output: 4 (max.)
Packages	(1) 52-pin LQFP (10 mm × 10 mm, 0.65 mm pitch)

4. R8C/LA3A Group 32-Pin-Package Versions

Item	Specifications			
Group name	**R8C/LA3A**			
Type Name (1) 7 mm × 7 mm 32-Pin LQFP (Operating temperature range)	• R5F2LA32ANFP (−20 to 85℃) • R5F2LA32ADFP (−40 to 85℃)	• R5F2LA34ANFP (−20 to 85℃) • R5F2LA34ADFP (−40 to 85℃)	• R5F2LA36ANFP (−20 to 85℃) • R5F2LA36ADFP (−40 to 85℃)	• R5F2LA38ANFP (−20 to 85℃) • R5F2LA38ADFP (−40 to 85℃)
CPU core	16-bit CPU core: R8C CPU			
Maximum operating frequency/power supply voltage	• 20 MHz/2.7 to 5.5 V • 5 MHz/1.8 to 5.5 V			
Operating temperature range	−20 to 85℃ (N Version) and −40 to 85℃ (D Version)			
Flash memory	8KB	16KB	32KB	64KB
Data flash	1 kbyte × 2 blocks			
RAM	2KB	2KB	2KB	3.5KB
On-chip peripheral functions	Timers • 16-bit timer: 2 channels (input capture/output compare function/event counter function)			

Item	Specifications
	• 8-bit timer: 3 channels(programmable waveform generator/compare match function/full-calendar RTC)
	Watchdog timer: 14 bits × 1 channel (with prescaler)
	Serial interfaces: • UART (dual synchronous/asynchronous serial I/O use): 1 channel • I^2C bus interface / Synchronous Serial Communication Unit: 1 channel
	Programmable I/O ports • CMOS I/O ports: 27 ports (pull-up resistor selection possible) • Large-current drive ports: 8 ports
	Power-on reset circuit
	Voltage detection circuit: 3 channels (detection level selectable for voltage detection 1)
	Oscillation circuit • Main clock oscillation circuit (with built-in main clock oscillation stoppage detection function) • Subclock oscillation circuit (32 kHz) • High-speed on-chip oscillator • Low-speed on-chip oscillator • Low-power-consumption features (standard mode <high-speed clock, low-speed clock, high-speed on-chip oscillator, low-speed on-chip oscillator> wait mode, stop mode, power-off mode)
	Interrupts • Interrupts: 69 • External interrupt inputs: 11 (INT × 3, key input × 8) • Interrupt priority levels: 8 levels
	10-bit A/D converter × 4 channels, sample & hold, trace mode, max. ×8 gain amplifier
	Temperature sensor: Measurable temperature range of 0℃ to 85℃

Item	Specifications
	Comparator B: 1 channels
	LCD drive control circuit • Bias value : 1/2, 1/3, • Duty cycle: static 1/2, 1/3, 1/4 • Segment output: 12 (max.) • Common output: 4 (max.)
Packages	(1) 32-pin LQFP (7 mm × 7 mm, 0.80 mm pitch)