December 9, 2010

Key Features of Renesas Electronics' New R8C/34K, R8C/3MK, R8C/34U, and R8C/3MU Group MCUs

Item	Specifications							
Group name	R8C/34K		R8C/3MK		R8C/34U		R8C/3MU	
Product No.: Operating temperature range −20 to 85℃ version (package)	R5F2 134C KNFP (LQFP)	R5F2 1348 KNFP (LQFP)	R5F2 13MC KNNP (QFN)	R5F2 13M8 KNNP (QFN)	R5F2 1348 UNFP (LQFP)	R5F2 1346 UNFP (LQFP)	R5F2 13M8 UNNP (QFN)	R5F2 13M6 UNNP (QFN)
Product No.: Operating temperature range −40 to 85℃ version (package)	R5F2 134C KDFP (LQFP)	R5F2 1348 KDFP (LQFP)	–		R5F2 1348 UDFP (LQFP)	R5F2 1346 UDFP (LQFP)	–	
CPU core	R8C 16-bit CPU core							
Max. operating frequency/ power supply voltage	• 20 MHz/3.0 to 3.6 V, 4.0 to 5.5 V (during USB operation) • 20 MHz/2.7 to 5.5 V • 5 MHz/1.8 to 5.5 V							

Item	Specifications							
Operating temperature range	−20 to 85℃ (N version) or −40 to 85℃ (D version)							
Flash memory	128KB	64KB	128KB	64KB	64KB	32KB	64KB	32KB
Data flash	1 KB × 4 blocks							
RAM	10KB	8KB	10KB	8KB	8KB	4KB	8KB	4KB
On-chip peripheral functions	Timers • 16-bit timers: 2 channels (input capture and output compare functions) • 8-bit timers: 2 channels (event counter and pulse width/period measurement modes, programmable waveform generation mode)		Timers • 16-bit timers: 1 channel (input capture and output compare functions) • 8-bit timers: 2 channels (event counter and pulse width/period measurement modes, programmable waveform generation mode)		Timers • 16-bit timers: 2 channels (input capture and output compare functions) • 8-bit timers: 2 channels (event counter and pulse width/period measurement modes, programmable waveform generation mode)		Timers • 16-bit timers: 1 channel (input capture and output compare functions) • 8-bit timers: 2 channels (event counter and pulse width/period measurement modes, programmable waveform generation mode)	
	• Watchdog timer: 14 bits × 1 channel (with built-in prescaler)							
	Serial interfaces							

Item	Specifications			
	- UARTs (for clock synchronous and asynchronous serial I/O): 3 channels - UART (for clock synchronous and asynchronous serial I/O as well as multiprocessor communication synchronization): 1 channel I^2C bus interface/synchronous serial communication unit: 1 channel			
	USB functions - Conforms to the USB 2.0 standard and supports full-speed (12 Mbps) transfers - Includes both a USB host/function controller and a USB transceiver		USB functions - Conforms to the USB 2.0 standard and supports full-speed (12 Mbps) transfers - Includes both a USB function controller and a USB transceiver	
	- Includes 5 pipes (that allow arbitrary EP number specification) with built-in independent FIFOs in each pipe - FIFO sizes (448 bytes, total): DCP (EP0) = 64 bytes Pipes 4 and 5 = 128 bytes (64 bytes, double buffered) Pipes 6 and 7 = 64 bytes - Supported transfers: DCP (EP0) = Control transfers (in/out) Pipes 4 and 5 = Bulk transfers (in/out) Pipes 6 and 7 = Interrupt transfers (in/out)			
	When the host controller function is selected Automation of SOF and packet transmission scheduling Interrupt transfer interval setting function		–	
	Support OTG (On-The-Go)	–	–	–
	Programmable I/O ports	Programmable I/O ports	Programmable I/O ports	Programmable I/O ports

Item	Specifications			
	• CMOS I/O ports: 36 pins (with selectable pull-up resistors) • Large-current drive ports: 36 pins	• CMOS I/O ports: 30 pins (with selectable pull-up resistors) • Large-current drive ports: 30 pins	• CMOS I/O ports: 36 pins (with selectable pull-up resistors) • Large-current drive ports: 36 pins	• CMOS I/O ports: 30 pins (with selectable pull-up resistors) • Large-current drive ports: 30 pins
	Power-on reset circuit			
	Voltage detection: 3 points (the voltage detection 0 and voltage detection 1 detection levels can be selected)			
	Oscillator circuits • Four circuits: XIN clock oscillator circuit High-speed on-chip oscillator (with frequency adjustment function) Low-speed on-chip oscillator PLL frequency synthesizer • Oscillator stopped detection: XIN clock oscillator stopped detection function • Frequency divider circuit: A divisor of 1, 2, 4, 8, or 16 can be selected. • Low-power structure: standard operating modes (XIN clock, PLL frequency synthesizer, high-speed on-chip oscillator, low-speed on-chip oscillator), wait mode, stop mode.			
	Interrupts • Number of interrupt vectors: 69 • External interrupt inputs: 9 (INT × 5, key input × 4) • Interrupt priority levels: 7 levels			
	10-bit A/D converter with 12 inputs	10-bit A/D converter with 10 inputs	10-bit A/D converter with 12 inputs	–
	DTC (data transfer controller): 1 channel			

4

Item	Specifications			
	Comparator B: two circuits			
Package	48-pin LQFP (7×7 mm, 0.50 mm pin pitch	40-pin QFN (6×6 mm, 0.50 mm pin pitch)	48-pin LQFP (7×7 mm, 0.50 mm pin pitch)	40-pin QFN (6×6 mm, 0.50 mm pin pitch)