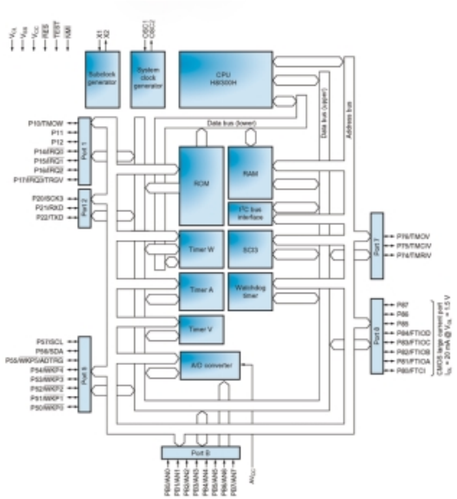
H8/3664F H8/300H TINY Series Microcontroller

Specification

- 3.0 – 5.5v operation
- H8/300H CPU core
- 8 – 32 kbytes ROM or 32 kbytes single supply Flash memory
- 512 – 2 kbytes SRAM
- 1 x 16-bit timer with 4 input capture/output compare registers
- 2 x 8-bit timer
- 1 x watchdog with independent on-board oscillator
- 1 x USART
- 1 x Multi-master I²C interface
- 8 Channel 10-bit A/D converter
- 37 I/O pins
- Available in 64-pin QFP or 42-pin SDIP packages



H8/3664F Ordering Information

Product Type	Memory Type	Package QFP-64 (FP-64A)	Package QFP-64 (FP-64E)	Package SDIP-42 (DIP-42S)
H8/3664F	Flash	HD64F3664H	HD64F3664FP	HD64F3664BP
H8/3664	Mask ROM	HD6433664H	HD6433664FP	HD6433664BP
H8/3663	Mask ROM	HD6433663H	HD6433663FP	HD6433663BP
H8/3662	Mask ROM	HD6433662H	HD6433662FP	HD6433662BP
H8/3661	Mask ROM	HD6433661H	HD6433661FP	HD6433661BP
H8/3660	Mask ROM	HD6433660H	HD6433660FP	HD6433660BP

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H8/3664F
H8/300H TINY Series

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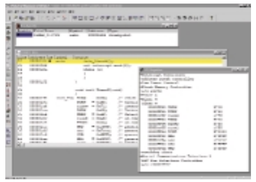
H8/3664F Development Tools

E10T In-Circuit Debugger

- E10T provides
  - PCI or PCMCIA Interface
  - Uses 3 pin interface on H8/3664F plus NMI and RESET
  - 256 PC Breakpoints
  - Hardware breakpoint on address and data
  - 4 level branch trace
  - Single stepping at C and assembly level
  - Ability to download applications and program on-chip flash

Hitachi Debug Interface

- HDI 'C' Level debugger provides
  - High level debugging in C
  - C level, mixed or assembly level display options
  - Step-over, step into, step out of.
  - Register display
  - Branch trace
  - C level watch-points
  - Memory window



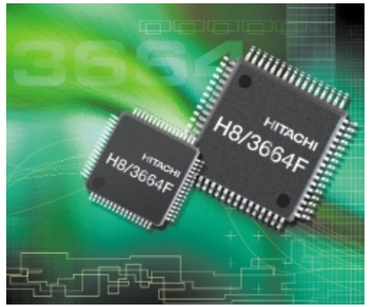
H8/3664F Tool Ordering Information

Software	
C-Compiler	S32HEWIARH8S-1
E10T Debugger with HDI	
E10T with PCMCIA interface	HS3664TCM01H
E10T with PCI Interface	HS3664TCI01H

Introducing the H8/3664F The "H8/300H TINY series" of micro-controllers

The H8/3664F is the first member of the new "H8/300H Tiny" series of microcontrollers. The H8/3664F has been designed to enable users of low end 8-bit microcontrollers an upgrade path to a higher performance device. Many low cost applications now require higher levels of performance and integration as consumers demand new features, such as the ability to communicate over the Internet, or the presence of "green" or power conserving features.

The combination of the high performance, H8/300H 16-bit CPU core, with 32 kbytes of on-chip Flash or Mask ROM combined with a range of power peripherals makes the H8/3664F an ideal single chip solution for many of these next generation applications.



H8/300H CPU Core

- High performance 16 MHz H8/300H, 16-bit CPU core
- Ideal for high level languages especially 'C'
- 32-bit Addition / subtraction in 125 ns
- Multiply/Divide in 875 ns
- Signed and unsigned 16-bit multiply and divide instructions

Powerful Peripherals

- Two 8-bit timers. One with watch mode operation
- Powerful 16-bit timer system
- Watchdog with built in oscillator for low power operation and higher system reliability
- High performance serial interfaces, USART and I2C
- 10-bit high speed A/D convertor

Single Supply Flash

- 32 kbytes single supply flash
- Built in Boot mode allows "plug and program" via serial port
- Ideal for end of production programming or program updates
- Ideal for storing on-chip calibration information

Low Power

- Wide variety of low power operating modes
- Dual oscillator system with 32 kHz oscillator
- Choice of internal prescaler's from both oscillators
- Module standby to disable internal peripherals when not in use
- Clock gearing

On-Chip debug

- Access to on-chip registers and memory
- On-chip breakpoint register operates on address and data
- Trace of executed branch instructions
- Ability to download applications and program on-chip Flash

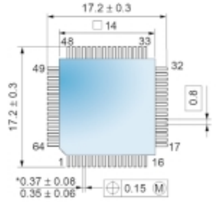
Powerful I/O Capability

- 29 digital I/O pins
- 8 I/O pins with 20mA drive capability
- 8 Input only pins
- 64 pin QFP or 42 pin SDIP package options

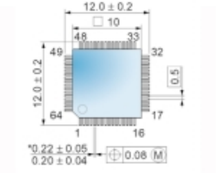
H8/3664F Power Consumption

Operating Mode	Typical current consumption
Active Mode	15 mA @ 5v, 16 MHz 8 mA @ 3v, 10 MHz
Active mode (Φ/64)	1.8 mA @ 5v, 16 MHz 1.2 mA @ 3v, 10 MHz
Sleep mode	11.5 mA@ 5v, 16 MHz 6.5 mA @ 3v, 10 MHz
Sleep mode (Φ/64)	1.7 mA@ 5v, 16 MHz 1.1 mA @ 3v, 10 MHz
Sub-active mode (Φ/2)	35µA @ 3v, 32 kHz
Sub-active mode (Φ/8)	25µA @ 3v, 32 kHz
Sub-sleep mode (Φ/2)	25µA @ 3v, 32 kHz
Standby mode	5µA max

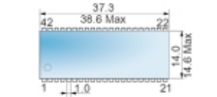
H8/3664F Packaging Information



FP-64A



FP-64E



DP-42S

Device	Memory RAM	Memory Flash	Memory ROM
H8/3664F	2kbytes	32kbytes	-
H8/3664	1kbytes	-	32kbytes
H8/3663	1kbytes	-	24kbytes
H8/3662	1kbytes	-	16kbytes
H8/3661	1kbytes	-	12kbytes
H8/3660	1kbytes	-	8kbytes