C164SV

Drive Control in the Smallest Space

THE C164SV is a new derivative of the popular C166 microcontroller family.

IT IS THE BEST choice for cost sensitive solutions, where performance is the key for success.

THE WELL PROVEN C166 architecture with the out-standing realtime performance is the basis for this new derivative in the 1.2 x 1.2 cm^2 small TQFP-64 package. The integration of a powerful peripheral set and high performance on-chip OTP or ROM memory makes the C164SV the instrument of choice for industrial and automotive applications like multi phase brushless DC motor control or 'smart' Sensoring. The applicability in a high temperature environment and availability as bare die allows cost optimized mechatronic solutions.

THE FLEXIBLE and intelligent PWM unit in combination with the high speed, high resolving Analog Digital Converter simplifies control of AC-, DC- or reluctance motors (sensorless solutions).

THE C164SV is pin compatible to the C164CM, offering scalability in memory sizes.

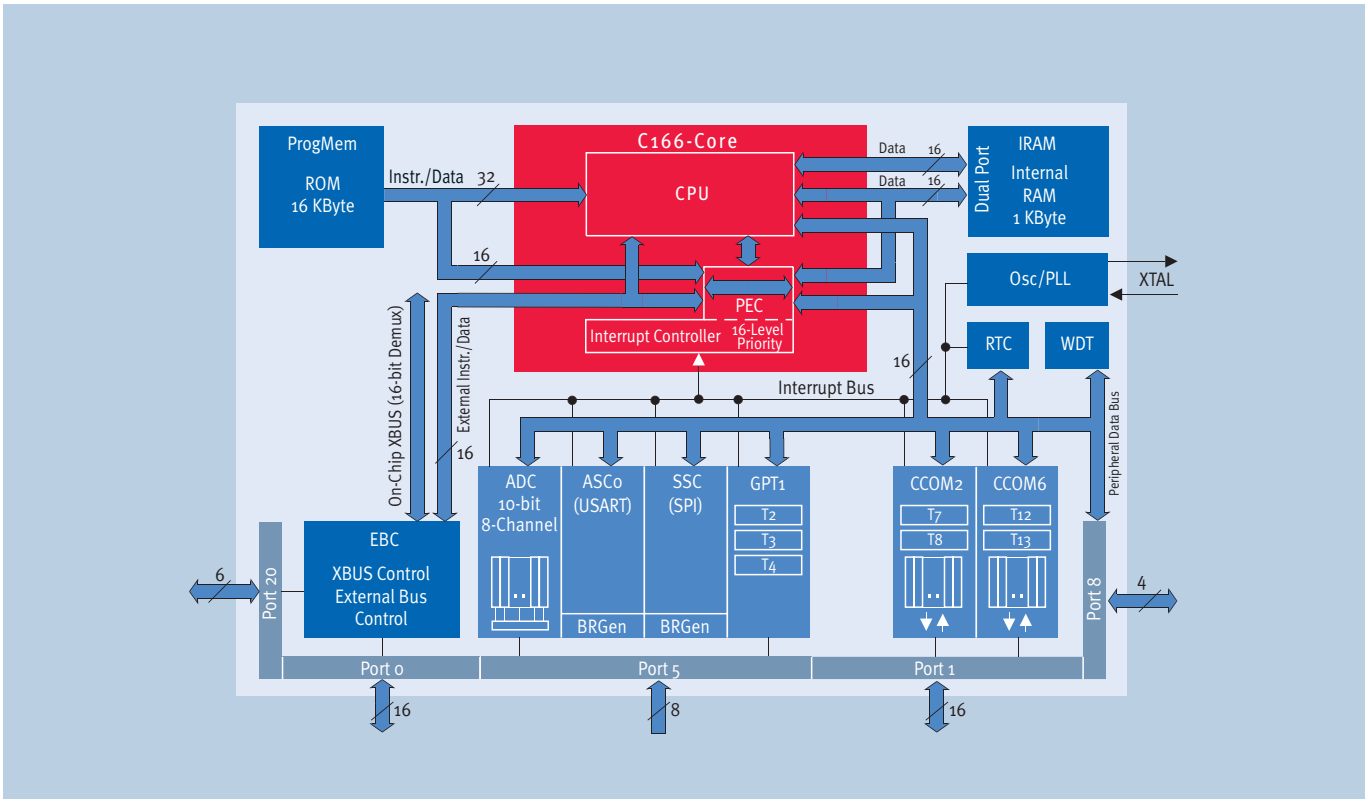
Applications

- BLDC drive control
- Intelligent sensors
- Sensorless Multi Phase Drive Control
- Automotive Body and Safety Applications
- White Good

Features

- High Performance 16-bit C166 CPU with 4-Stage Pipeline
- 80 ns cycle time at 25 MHz CPU clock
- 400 ns multiplication (16 × 16 bit), 800 ns Division (32/16 bit)
- Enhanced boolean Bit Manipulation Facilities
- Register-Based Design with multiple variable Register Banks
- Single -Cycle Context Switching Support
- Flexible Synchronous External Bus Interface
- 16-Priority-Level Interrupt System with 32 sources, Sample rate down to 40 ns
- 8 Channel Interrupt driven Peripheral Event Controller (PEC)
- Clock generation via on Chip PLL or via direct Clock Input
- 1 KByte on chip RAM
- 16 KByte on chip Program ROM Memory (OTP Version available)
- Up to 64 KByte external address space for code and data
- Flexible System Control and Power Management
- Real Time Clock with alarm interrupt
- 8-Channel 10-bit (optional 12 -bit) A/D Converter, conversion time down to 7.8 µs
- 12-Channel Capture/Compare Units with 2 independent time bases
- Multifunctional General Purpose Timer Unit with 3 Timers
- Asynchronous/Synchronous Serial Channel (USART)
- High Speed Synchronous Serial Channels (SPI)
- CAPCOM6 module with two independent timers dedicated to PWM generation for AC-motor control
- Programmable Watchdog timer and Oscillator Watchdog
- Up to 50 general purpose I/O Lines
- Package: P/PG-TQFP-64
  Plastic Thin Quad Flat Package
- Temperature Range: -40°C to + 125°C
- Supply Voltage: 5.0 V

C164SV Block Diagram



C164SV Brushless DC Drive Control and Extensive Communication Capabilities for Space and Cost Saving Mechatronic Solutions

How to reach us:
http://www.infineon.com

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For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office (www.infineon.com).

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Due to technical requirements components may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies Office.

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