



General Purpose, 32-bit Microcontroller with ARM[®] Cortex™-M3 FM3 Family Basic Group

MB9B520T / MB9B420T / MB9B320T / MB9B120T Series

The basic group has been expanded through the development of a lineup of products in four series. These enhanced products feature a larger ROM density, more pins, and lower standby power consumption. The ROM density can be increased in response to any increase in the program size.

NEW PRODUCTS

Overview

The FM3 microcontrollers use the Cortex-M3 global-standard, high-performance core. The MCUs leverage Fujitsu's vast experience in microcontroller development, and feature the peripheral functions of the FR family, which has gained considerable support from the market over many years.

At a high level, these MCUs balance cost, performance and power consumption, making them appropriate for a wide range of applications. For example, this group of products is appropriate for the inverter control of white goods (e.g., air conditioners, refrigerators and washing machines) and in the human-machine interface sections of household electrical appliances. In addition, these products can be used for the various types of motor control used in office automation (OA) equipment—such as printers and copy machines—and can implement network communication among industrial equipment through their supported Controller Area Network (CAN) functions.

Features

These microcontrollers contribute to the

high efficiency and low power consumption of white goods, OA equipment and industrial equipment. Optimal solutions are offered by incorporating high-speed flash memory; CAN; a highly accurate, high-speed 12-bit A/D converter; a variety of timers; USB 2.0 Host/Function; multifunction serial communication; and support for a wide range of power supply voltages (2.7V to 5.5V).

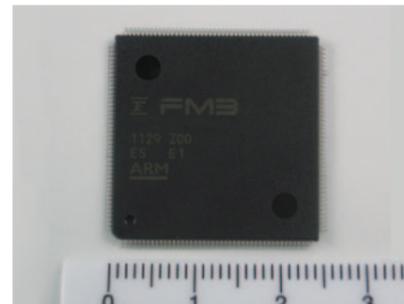
Highly reliable flash memory realizing the highest speed class in the industry

An endurance of 100,000 write cycles or a retention property of 20 years have been realized in the highly reliable NOR-type flash memory installed in these products. The flash security function prevents illegal readout of programs from the outside, protecting the customer's software assets.

Abundance of Communication Macros

These microcontrollers have inherited the proven communication functions of the original core, and are also equipped

Photo 1 External Appearance



with a variety of serial communication macros, including CAN, USB 2.0 Host/Function, and multifunction serial communication (UART/CSIO/LIN/I²C). The MCUs can be used widely with devices that use networks such as OA and AV equipment.

- CAN: 1 channel conforming to Ver. 2.0A/B, 32-message buffer
- USB 2.0 Host/Function: full-speed / low-speed bulk transfer / interrupt transfer / isochronous transfer are supported.
- Multifunction serial communication: UART, CSIO, LIN, I²C are installed (maximum 16 channels)

Compatible with Various Power-Supply Systems over a Wide Voltage Range with Low Power Consumption

The FM3 family, which operates

with power-supply voltages from 2.7V to 5.5V, is compatible with both the 3V and 5V systems of OA and FA equipment, white goods, and household electrical appliances. Power consumption is half that of the higher level, high-performance group of products (at the same clock frequency).

Figure 1 shows the block diagram of the MB9B520T series, and Figure 2 shows an example of the MB9BF529T being used in an application.

Table 1 shows the resource differences due to the T-pin differences of the MB9BF529S / T.

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Figure 1 Block diagram of MB9B520T series

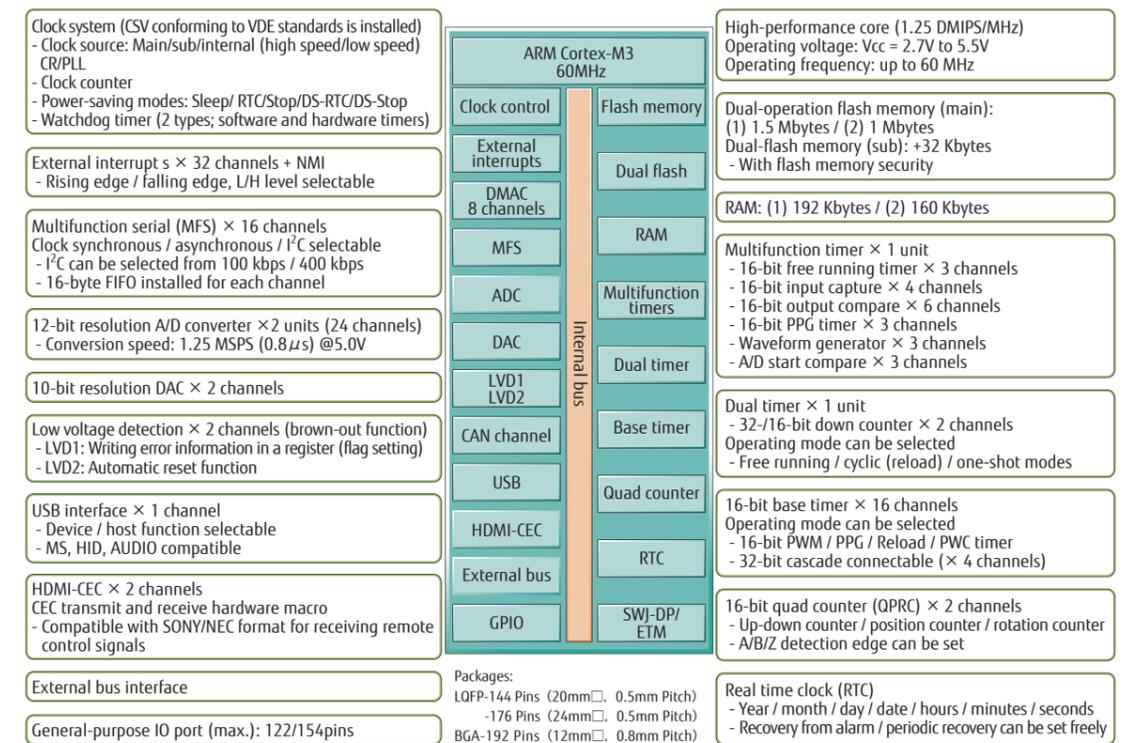


Table 1 Resource differences due to the T-pin differences of the MB9BF529S / T

Group name	Basic group	
Series name	MB9BF520T Series	
Package type name	S	T
Quad counter	1 channel	2 channels
Number of pins	144	176/(BGA192)
I/O Port	122 pins (max.)	154 pins (max.)

Figure 2 Example of using the MB9BF529T in an application

