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What is "[Embedded - Microcontrollers](#)"?

"[Embedded - Microcontrollers](#)" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

Applications of "[Embedded - Microcontrollers](#)"

Details

Product Status	Active
Core Processor	ARM® Cortex®-M3
Core Size	32-Bit Single-Core
Speed	40MHz
Connectivity	I ² C, SIO, UART/USART
Peripherals	DMA, LVD, WDT
Number of I/O	83
Program Memory Size	128KB (128K x 8)
Program Memory Type	FLASH
EEPROM Size	-
RAM Size	12K x 8
Voltage - Supply (Vcc/Vdd)	4V ~ 5.5V
Data Converters	A/D 18x12b
Oscillator Type	External
Operating Temperature	-40°C ~ 85°C (TA)
Mounting Type	Surface Mount
Package / Case	100-LQFP
Supplier Device Package	100-LQFP (14x14)
Purchase URL	https://www.e-xfl.com/product-detail/toshiba-semiconductor-and-storage/tmpm380fwfg

TX03 Series

32-bit / 100-pin

Under Development
Under Development

TMPM380FWFG
TMPM380FYFG

Under Development
Under Development

TMPM380FWDFG
TMPM380FYDFG



High-performance microcontrollers containing a multi-purpose timer for controlling the power devices used for home electronics, and realizing 5V single supply operation to achieve control over Induction Heating (IH) appliances and motors.

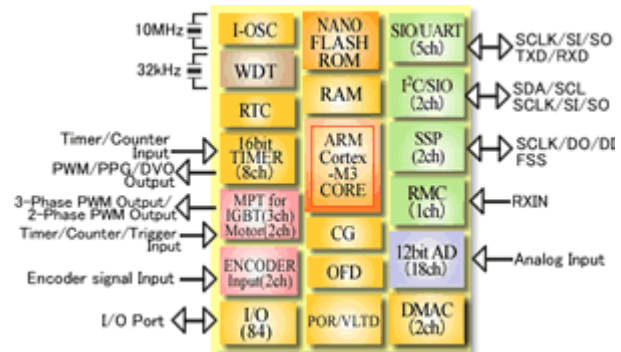
Features

ARM Cortex™-M3 CPU Core

- ▶ Operating voltage:
4.0 to 5.5 V
- ▶ Maximum operating frequency:
40 MHz (10 MHz × 4 by PLL)
- ▶ On-chip debug circuit
JTAG/SWD/SWV, TRACE (DATA2 bits)

Built-in Functions

- ▶ 12-bit AD converter: 2-μs conversion time, 18-channel.
- ▶ Multi-purpose timer (MPT): 3 channels (Note: 2channels for three-phase PWM)
Three-phase PWM output: Synchronous 3-channel PWM output (with AD conversion trigger)
IGBT control-timer: Synchronous 2-channel PPG output, external trigger start, dead-time output, protection circuit controls in emergency
- ▶ Encoder input : 2 channels
- ▶ 16-bit timer : 8 channels
- ▶ RTC : 1 channel
- ▶ SIO/UART : 5 channels
- ▶ I²C/SIO : 2 channels (1 channel is shared with SSP)
- ▶ SSP(SPI mode) : 2 channels (1 channel is shared with I²C/SIO.)
- ▶ Remote control signal preprocessor : 1 channel
- ▶ DMA controller : 2 channels
- ▶ Power-on reset circuit
- ▶ Voltage detection circuit
- ▶ Internal Oscillator (10 MHz)
- ▶ Oscillation frequency detector (only when external oscillator is used)



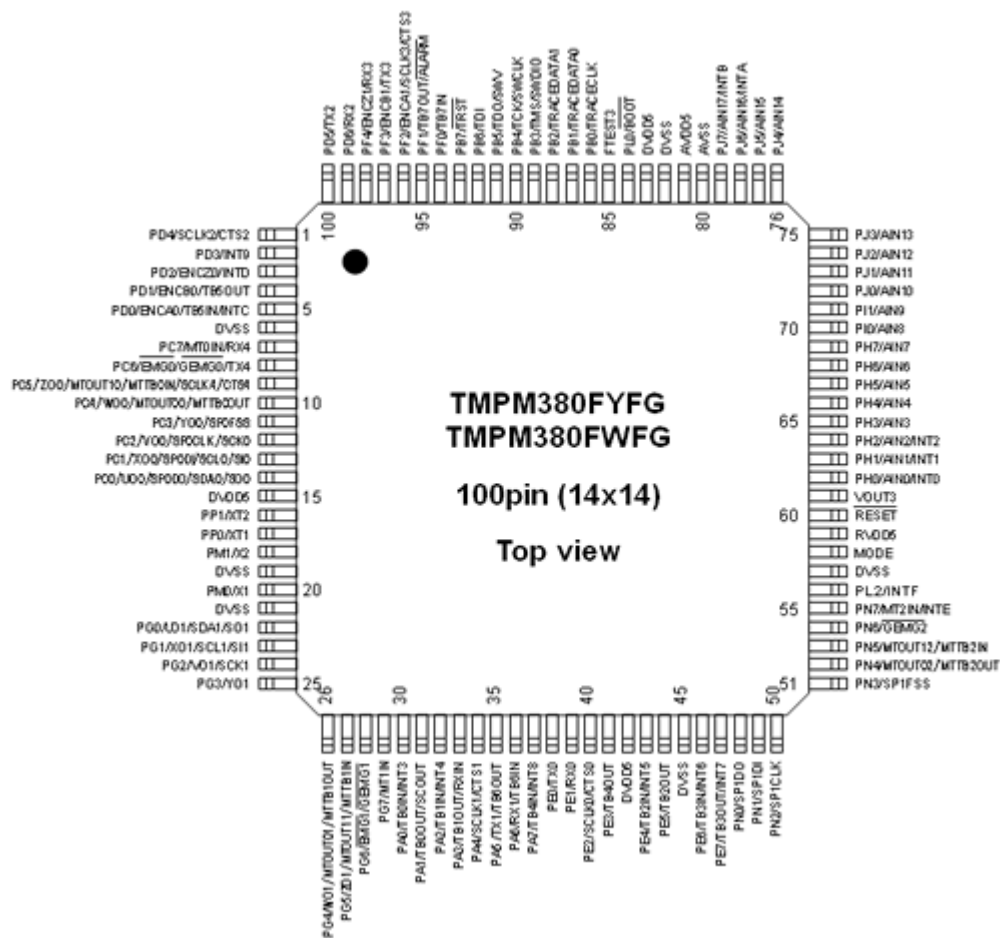
Flash Memory Size

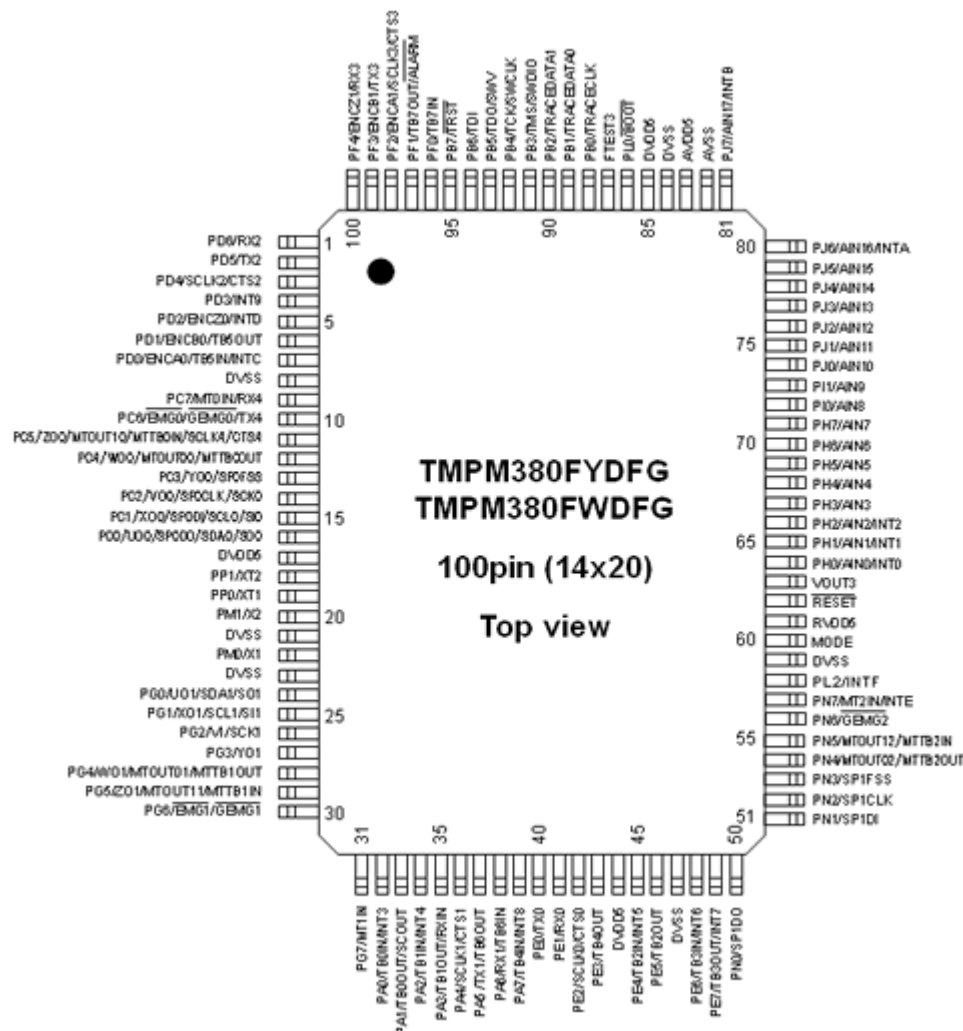
Part number	ROM (Flash)	RAM
TMPM380FWFG**	128 Kbytes	12 Kbytes
TMPM380FWDFG**	128 Kbytes	12 Kbytes
TMPM380FYFG**	256 Kbytes	16 Kbytes
TMPM380FYDFG**	256 Kbytes	16 Kbytes

** : Under development

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Pin Assignments

**Package name: LQFP100-P-1414-0.50H**



Package name: QFP100-P-1420-0.65Q

» For further information about Toshiba microcomputers and Toshiba microcomputer development systems, please visit <http://www.semicon.toshiba.co.jp/eng/product/micro/index.html>

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