

TMP86FS49BUG
TMP86FS49BFG
NEW **TMP86FS49BNG**

FLASH

**8-bit microcontroller with flash memory, various serial interfaces
and enhanced 10-bit AD converter**

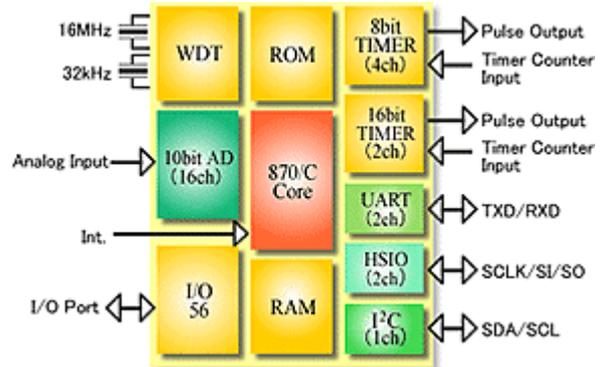
Features

TLCS-870/C CPU Core

- ▶ Operating voltage
 - 4.5 to 5.5 V at 16 MHz (erase/write)
 - 4.5 to 5.5 V at 16 MHz (read)
 - 2.7 to 5.5 V at 8 MHz (read)
 - 2.7 to 5.5 V at 32 KHz (read)

Built-in Functions

- ▶ I/O ports : 56 pins
- ▶ 16-bit timer : 2 channels
- ▶ 8-bit timer : 4 channels
- ▶ UART : 2 channels
- ▶ High-speed SIO : 2 channels
- ▶ I²C : 1 channel
- ▶ 10-bit AD converter : 16 channels
- ▶ Key-on wake-up : 4 channels



Memory Size

Part number	ROM (Flash)	RAM
TMP86FS49BUG	60 Kbytes	2048 bytes
TMP86FS49BFG	60 Kbytes	2048 bytes
TMP86FS49BNG	60 Kbytes	2048 bytes

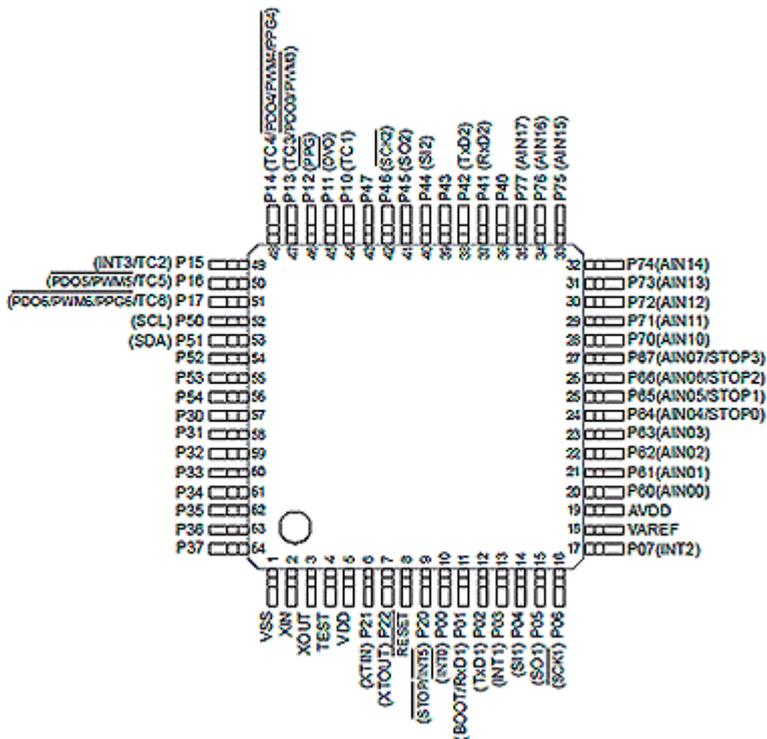
Product Lineup

Part number	ROM	RAM
TMP86CH49FG	16 Kbytes	512 bytes
TMP86CM49FG	32 Kbytes	1 Kbyte
TMP86CM49UG	32 Kbytes	1 Kbyte
TMP86CS49FG	60 Kbytes	2 Kbytes
TMP86CS49UG	60 Kbytes	2 Kbytes
TMP86PM49FG	32 Kbytes(OTP)	1 Kbyte
TMP86PM49UG	32 Kbytes(OTP)	1 Kbyte

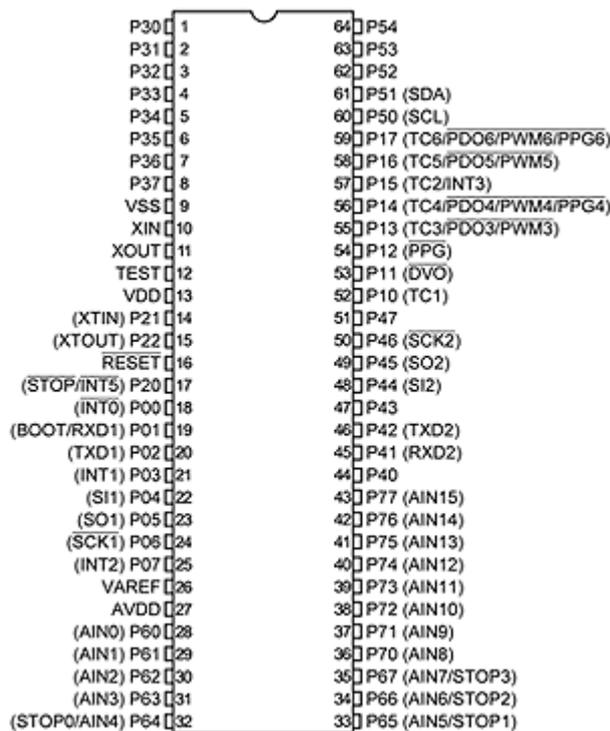
* This product uses the SuperFlash® technology under license of Silicon Storage Technology, Inc. Super Flash® is a registered trademark of Silicon Storage Technology, Inc.

Package Information

Pin Assignments



Package UG: LQFP64 (10 × 10 mm) FG: QFP64 (14 × 14 mm)



Package NG: SDIP64

Development Systems

Software Products

Toshiba Integrated Development Environment	C Compiler	SW89CN0-ZCC: 1 license SW89CN3-ZCC: 10 licenses
	Integrated Development Environment	SW00MN0-ZCC: 1 license SW00MN3-ZCC: 10 licenses The controller and emulator comes with a single-seat download license.

Hardware Products Emulator

RTE870/C model 15 In-Circuit Emulation System	Controller	BM1040R0B-G
	Interface module	BMP86A100010B
	Emulation module	BMP86A200010B
	Target connection board	BMP86D064DG0A: LQFP64 (10×10) / BMP86D064DE0A: QFP64 (14×14)
	Emulation chip	TMP86C949XB
RTE870/C In-Circuit Emulation System	Emulator	HW86EG000AG
	Emulation chip	TMP86C949XBG

* Select either RTE870/C model 15 In-Circuit Emulation System or RTE870/C In-Circuit Emulation system. The RTE870/C In-Circuit Emulation System is, however, the only emulation system that can be employed for debugging and evaluating target systems based on the TMP86FS49BNG.

* As to hardware products, additional accessories are also needed.

» 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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