



# 8-bit microcontrollers delivering high functionality and performance in low-pin-count packages

#### Features

#### • TLCS-870/C1 CPU Core

·Operating voltage

4.3 to 5.5 V at 10 MHz

2.7 to 5.5 V at 4.2 MHz

2.2 to 5.5 V at 2 MHz

·Clock gear

1/4, 1/2, 1/1

#### Built-in Functions

·Voltage detecting circuit

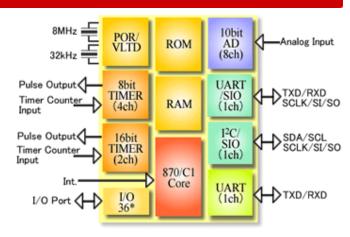
(Two voltage levels detectable, reset or interrupt selectable)

·Power-on reset circuit

 $\begin{array}{lll} \cdot 10\text{-bit AD converter} & : & 8 \text{ channels} \\ \cdot 8\text{-bit timer} & : & 4 \text{ channels} \\ \cdot 16\text{-bit timer} & : & 2 \text{ channels} \\ \cdot \text{UART/SIO} & : & 1 \text{ channel} \\ \cdot \text{UART} & : & 1 \text{ channel} \\ \cdot \text{I}^2\text{C/SIO} & : & 1 \text{ channel} \\ \end{array}$ 

(One SIO channel can be used at a time.)

- ·Built-in pull-up resistors
- $\cdot On\text{-}chip\ debug\ function\ (Flash\ version\ only)$



<sup>\*:</sup>Two pins are used for high-frequency oscillation and cannot be used as input/output ports

## Flash Memory Size

Part number	ROM(Flash)	RAM	
TMP89FH40NG	16 Kbytes	2 Kbytes	
TMP89FM40NG	32 Kbytes	2 Kbytes	

# Development Systems

#### Software Products

Toshiba Integrated Development Environment Integrated De	('('omniler	SW89CN0-ZCC: 1 license SW89CN3-ZCC: 10 licenses
	Integrated Development	SW00MN0-ZCC: 1 license SW00MN3-ZCC: 10 licenses The emulator comes with a single-seat download license.

#### Hardware Products

\*\*:Under development

	On-Chip Debug Emulator	Emulator	BMP89A400010A-G	
	In-Circuit Emulator	Emulator	BMP89A300010A-G	
III-Circuit Emulator	Emulation chip	TMP89C900XBG**		

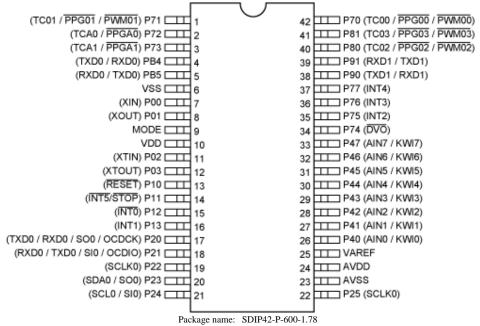
<sup>&</sup>gt; As to hardware products, additional accessories are also needed.

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

<sup>»</sup> Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

#### Package Information

### Pin Assignments



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

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