

Microcomputer

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TMP89FS60AEFG

TLCS-870C1

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Description

|                                |                                                                                                   |
|--------------------------------|---------------------------------------------------------------------------------------------------|
| Description                    | Products based on the 8-bit CPU core with various communication functions and 10-bit AD converter |
| RoHS Compatible Product(s) (#) | Available                                                                                         |

Flash memory uses SuperFlash® technology licensed from Silicon Storage Technology (SST), Inc. SuperFlash® is a registered trademark of SST, Inc.

Properties

| Package Information  |                    | Description               |           |       |
|----------------------|--------------------|---------------------------|-----------|-------|
| Toshiba Package Name | QFP64-P-1414-0.80A | Property                  | Value     | Unit  |
| Pins                 | 64                 | number of bits            | 8         | bit   |
|                      |                    | ROM size                  | 60        | Kbyte |
|                      |                    | ROM type                  | Flash     | -     |
|                      |                    | RAM size                  | 3         | Kbyte |
|                      |                    | internal data bus width   | 8         | bit   |
|                      |                    | LED drive capability      | 8         | ch    |
|                      |                    | UART                      | 1         | ch    |
|                      |                    | UART/SIO                  | 2         | ch    |
|                      |                    | I <sup>2</sup> C/SIO      | 1         | ch    |
|                      |                    | A/D converters(10bit)     | 16        | ch    |
|                      |                    | Timer/counter(16bit)      | 2         | ch    |
|                      |                    | Timer/counter(8bit)       | 4         | ch    |
|                      |                    | Interrupt controllers     | 6         | pins  |
|                      |                    | watchdog timer            | Available | -     |
|                      |                    | dual clock operation      | Available | -     |
|                      |                    | Clock gear function       | Available | -     |
|                      |                    | Power-on reset circuit    | Available | -     |
|                      |                    | Voltage detecting circuit | Available | -     |
|                      |                    | On-chip debug function    | Available | -     |
|                      |                    | I/O Port                  | 58        | port  |

The minimum instruction execution time in low-speed dual clock operation mode is 122μs (at 32.768kHz).

Configurable as UART or SIO. Also, selectable from I2C and SIO. Two SIO channels can be used simultaneously.

Two ports are reserved for high-speed oscillator pins and cannot be used as I/O ports.

| Supply Voltage (V) | Operation Frequency (MHz) | Operating Temp (degC) | Minimum instruction execution time (μsec) |
|--------------------|---------------------------|-----------------------|-------------------------------------------|
| 4.3 to 5.5         | 0.25 to 10                | -40 to 85             | 0.1                                       |
| 2.7 to 5.5         | 0.25 to 4.2               | -40 to 85             | 0.238                                     |

Development Systems

- ▶ TLCS-870/C1 Series Development System TMP89FS60AEFG

Manuals Common to All TLCS-870C1 Series Components

- PDF TLCS-870/C1 CPU (PDF: 380KB)
- PDF TLCS-870/C1 Series Instruction Set (PDF: 4227KB)
- PDF Datasheet (PDF: 111KB)

## Document

### Environment Information

Certificate Regarding EU RoHS(2011/65/EU)Controlled Substances[Nov,2016] UPDATED

 (PDF: 52KB)

### Environment Information

Certificate on Content of SVHC of REACH[Nov,2016] UPDATED

 (PDF: 43KB)

## Related Links

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- ▶ [Application Notes / Sample Program](#)
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### Inquiries on our product

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For product delivery, additional characters will be added to the part numbers shown on this website. For details, please ask your local distributor, or send an inquiry accessed from "Contact Us" on this website.

### Notes

- ▶ The Part Number column shows representative part numbers only, which may not be available for sale in the precise form shown. Each Part Number constitutes a product family which may contain multiple associated product configurations.  
(#) Under the RoHS Compatible Product(s) column, "Available" means at least one RoHS-Compatible product is available for sale in the corresponding product family. "None" means no RoHS Compatible product is available in that product family. For Toshiba's definitions of concepts related to the RoHS Directive and RoHS Compatibility, please click [here](#) .  
The RoHS compatibility information provided herein is to the best of Toshiba's knowledge and belief accurate as of the date Toshiba entered the information into this database. Information is subject to change at any time without notice.  
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