## TX03 Series — 32-bit / 100/109-pin

NEW TMPM366FDFG — Under Development TMPM366FDXBG
NEW TMPM366FYFG — Under Development TMPM366FYXBG
NEW TMPM366FWFG — Under Development TMPM366FWXBG

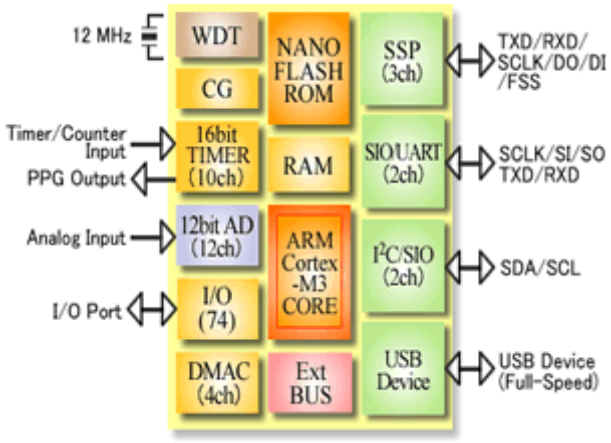
NANO FLASH™

**Microcontrollers with a full-speed USB device achieve the optimal balance between the cost and performance.**

## Features

### ARM Cortex™-M3 CPU Core

- Operating voltage:
  2.7 to 3.6V (3.0 to 3.6V USB)
  I/O 2.7 to 3.6V
- Maximum Operating frequency:
  48 MHz
- On-chip debug circuit:
  JTAG, SWD, SWV or 4-bit trace interface
- Power saving operation
  Clock gear (for dividing clock to 1/2, 1/4, or 1/8)
  Standby modes (IDLE, STOP1, STOP2)




### Built-in Functions

- DMA controller : 4 channels
- USB (Full-Speed) device controller : 1 channel
- I/O ports : 74 pins
- 12-bit AD converter : 12 channels
- 16-bit timer : 10 channels
- Full UART : 1 channel
- SIO/UART : 2 channels
- $I^2C$/SIO : 2 channels
- SSP : 3 channels
- External bus interface : 8/16-bit (Multiplex bus/Separate bus)

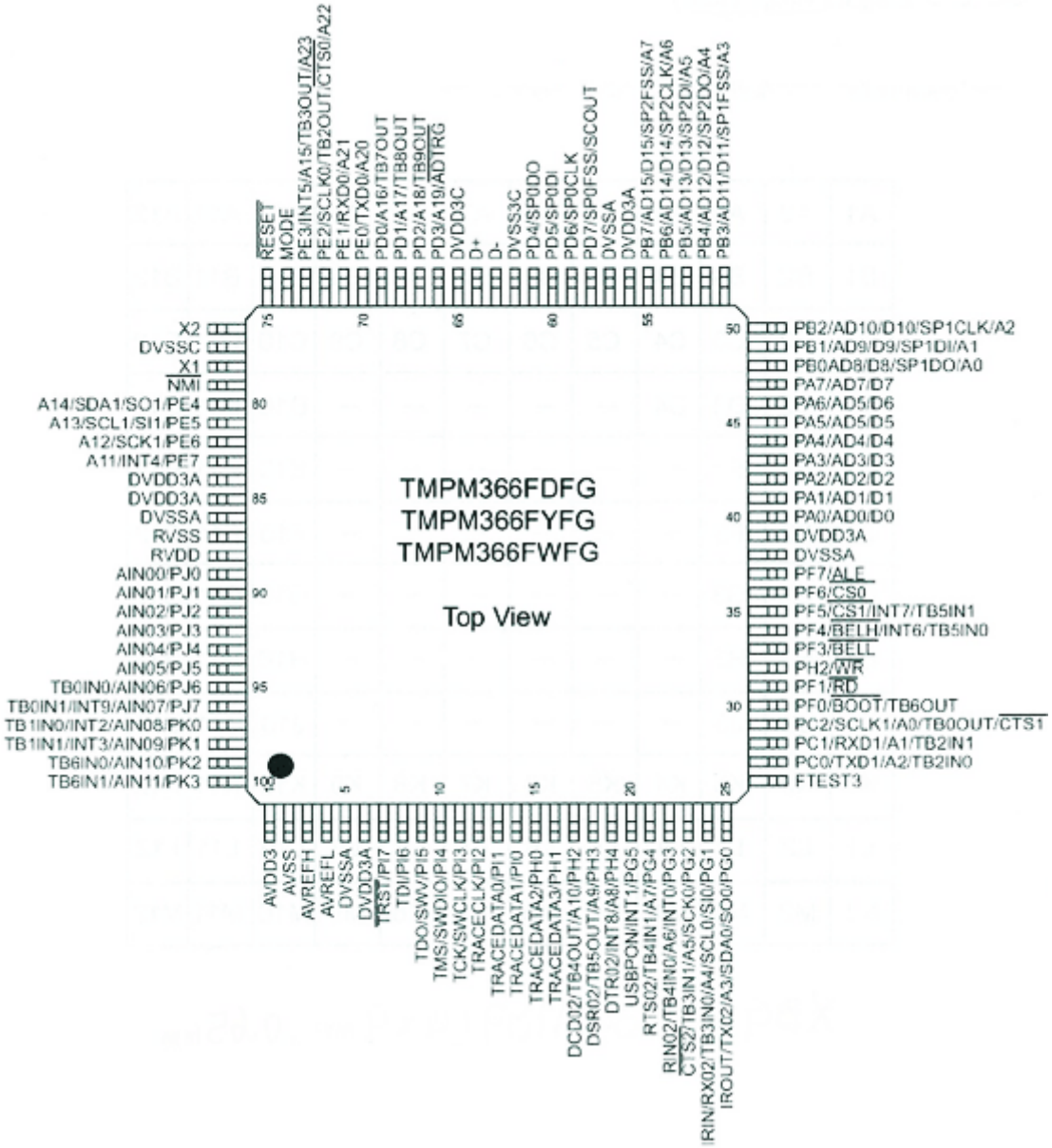
### Flash Memory Size

| Part number | ROM (Flash) | RAM |
|---|---|---|
| TMPM366FDFG | 512 Kbytes | 64 Kbytes |
| TMPM366FDXBG** | 512 Kbytes | 64 Kbytes |
| TMPM366FYFG | 256 Kbytes | 48 Kbytes |
| TMPM366FYXBG** | 256 Kbytes | 48 Kbytes |
| TMPM366FWFG | 128 Kbytes | 32 Kbytes |
| TMPM366FWXBG** | 128 Kbytes | 32 Kbytes |

**: Under development

## Package Information

### Pin Assignments




**Package FG: LQFP100 (14 × 14 mm)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | A9 | A10 | A11 | A12 |
| B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 |
| C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 | C10 | C11 | C12 |
| D1 | D2 | D3 | D4 | — | — | — | — | — | D10 | D11 | D12 |
| E1 | E2 | E3 | — | — | — | — | — | — | E10 | E11 | E12 |
| F1 | F2 | F3 | — | — | — | — | — | — | F10 | F11 | F12 |
| G1 | G2 | G3 | — | — | — | — | — | — | G10 | G11 | G12 |
| H1 | H2 | H3 | — | — | — | — | — | — | H10 | H11 | H12 |
| J1 | J2 | J3 | — | — | — | — | — | — | J10 | J11 | J12 |
| K1 | K2 | K3 | K4 | K5 | K6 | K7 | K8 | K9 | K10 | K11 | K12 |
| L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 | L9 | L10 | L11 | L12 |
| M1 | M2 | M3 | M4 | M5 | M6 | M7 | M8 | M9 | M10 | M11 | M12 |

**Top View**

**Package XBG: TFBGA109 (9 × 9 mm)**

## Pin Numbers and Names (XBG)

| Pin No. | Pin Name | Pin No. | Pin Name |
|---|---|---|---|
| A1 | PK3/AIN11/TB6IN1 | D1 | AVSS |
| A2 | PJ7/AIN07/INT9/TB0IN1 | D2 | PK0/AIN08/INT2/TB1IN0 |
| A3 | PJ3/AIN03 | D3 | PJ6/AIN06/TB0IN0 |
| A4 | PJ0/AIN00 | D4 | AVSS |
| A5 | RVDD3 | D5 | – |
| A6 | RVSS | D6 | – |
| A7 | DVSSA | D7 | – |
| A8 | DVDD3A | D8 | – |
| A9 | X1 | D9 | – |
| A10 | DVSSC | D10 | PD3/A19/$\overline{\text{ADTRG}}$ |
| A11 | X2 | D11 | PE0/TXD0/A20 |
| A12 | DVSSC | D12 | PE1/RXD0/A21 |
| B1 | AVDD3 | E1 | AVREFL |
| B2 | PK2/AIN10/TB6IN0 | E2 | AVSS |
| B3 | PJ4/AIN04 | E3 | BSC |
| B4 | PJ1/AIN01 | E4 | – |
| B5 | AVSS | E5 | – |
| B6 | PE7/INT4/A11 | E6 | – |
| B7 | PE5/SCL1/SI1/A13 | E7 | – |
| B8 | DVDD3A | E8 | – |
| B9 | $\overline{\text{NMI}}$ | E9 | – |
| B10 | DVSSC | E10 | PD4/SP0DO |
| B11 | MODE | E11 | DVDD3C |
| B12 | $\overline{\text{RESET}}$ | E12 | DVDD3C |
| C1 | AVREFH | F1 | DVDD3A |
| C2 | PK1/AIN09/INT3/TB1IN1 | F2 | DVSSA |
| C3 | PJ5/AIN05 | F3 | PI7/$\overline{\text{TRST}}$ |
| C4 | PJ2/AIN02 | F4 | – |
| C5 | AVSS | F5 | – |
| C6 | PE6/SCK1/A12 | F6 | – |
| C7 | PE4/SDA1/SO1/A14 | F7 | – |
| C8 | PD0/A16/TB7OUT | F8 | – |
| C9 | PD1/A17/TB8OUT | F9 | – |
| C10 | PD2/A18/TB9OUT | F10 | PD5/SP0DI |
| C11 | PE2/SCLK0/TB2OUT/$\overline{\text{CTS0}}$/A22 | F11 | DVSS3C |
| C12 | PE3/INT5/A15/TB3OUT/A23 | F12 | D+ |

| Pin No. | Pin Name | Pin No. | Pin Name |
|---|---|---|---|
| G1 | PI2/TRACECLK | K1 | PH4/A8/INT8/DTR02 |
| G2 | PI6/TDI | K2 | PH3/A9/TB5OUT/DSR02 |
| G3 | PI5/TDO/SWV | K3 | PH2/A10/TB4OUT/DCD02 |
| G4 | − | K4 | PG5/INT1/USBPON |
| G5 | − | K5 | PC2/SCLK1/A0/TB0OUT/$\overline{CTS1}$ |
| G6 | − | K6 | PF2/$\overline{WR}$ |
| G7 | − | K7 | PF5/$\overline{CS1}$/INT7/TB5IN1 |
| G8 | − | K8 | PF7/ALE |
| G9 | − | K9 | PA1/D1/AD1 |
| G10 | PD6/SP0CLK | K10 | PA4/D4/AD4 |
| G11 | DVSS3C | K11 | PB2/D10/AD10/SP1CLK/A2 |
| G12 | D− | K12 | PB4/D12/AD12/SP2DO/A4 |
| H1 | PI0/TRACEDATA1 | L1 | PG2/SCK0/A5/TB3IN1/$\overline{CTS2}$ |
| H2 | PI1/TRACEDATA0 | L2 | PG3/INT0/A6/TB4IN0/RIN02 |
| H3 | PI4/TMS/SWDIO | L3 | PG4/A7/TB4IN1/RTS02 |
| H4 | − | L4 | PC0/TXD1/A2/TB2IN0 |
| H5 | − | L5 | PF1/$\overline{RD}$ |
| H6 | − | L6 | PF3/$\overline{BELL}$ |
| H7 | − | L7 | PF6/$\overline{CS0}$ |
| H8 | − | L8 | PA0/D0/AD0 |
| H9 | − | L9 | PA2/D2/AD2 |
| H10 | PD7/SP0FSS/SCOUT | L10 | PA5/D5/AD5 |
| H11 | DVSSA | L11 | PB0/D8/AD8/SP1DO/A0 |
| H12 | DVDD3A | L12 | PB3/D11/AD11/SP1FSS/A3 |
| J1 | PH0/TRACEDATA2 | M1 | FTEST3 |
| J2 | PH1/TRACEDATA3 | M2 | PG1/SCL0/SI0/A4/TB3IN0/RX02/IRIN |
| J3 | PI3/TCK/SWCLK | M3 | PG0/SDA0/SO0/A3/TX02/IROUT |
| J4 | − | M4 | PC1/RXD1/A1/TB2IN1 |
| J5 | − | M5 | PF0/$\overline{BOOT}$/TB6OUT |
| J6 | − | M6 | PF4/$\overline{BELH}$/INT6/TB5IN0 |
| J7 | − | M7 | DVSSA |
| J8 | − | M8 | DVDD3A |
| J9 | − | M9 | PA3/D3/AD3 |
| J10 | PB7/D15/AD15/SP2FSS/A7 | M10 | PA6/D6/AD6 |
| J11 | PB6/D14/AD14/SP2CLK/A6 | M11 | PA7/D7/AD7 |
| J12 | PB5/D13/AD13/SP2DI/A5 | M12 | PB1/D9/AD9/SP1DI/A1 |

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

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Toshiba:
TMPM366FDXBG