

MN101C527

| | |
|---|---|
| Type | MN101C527 |
| ROM (×8-bit) | 16 K |
| RAM (×8-bit) | 1.5 K |
| Package | LQFP064-P-1414 ^{*Pb free} , TQFP064-P-1010B ^{*Pb free} (under development) |
| Minimum Instruction Execution Time | 0.1 μs (at 4.5 V to 5.5 V, 20 MHz) 0.238 μs (at 2.7 V to 5.5 V, 8.39 MHz) 61 μs (at 2.0 V to 5.5 V, 32.768 kHz) |
| Interrupts | • RESET • Watchdog • External 0 • External 1 • External 2 • External 4 (key interrupt dedicated) • Timer 0 • Timer 1 • Timer 2 • Timer 3 • Timer 6 • Timer 7 (2 systems) • Timer 8 • Time base • Serial 0 (2 systems) • A/D conversion finish |
| Timer Counter | <p>Timer counter 0 : 8-bit × 1 (square-wave/8-bit PWM output, event count, generation of remote control carrier, simple pulse width measurement) (square-wave/PWM output to large current terminal P50 possible) Clock source 1/2, 1/4 of system clock frequency; 1/1, 1/4, 1/16, 1/32, 1/64 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency; external clock input Interrupt source coincidence with compare register 0</p> <p>Timer counter 1 : 8-bit × 1 (square-wave output, event count, synchronous output event) Clock source 1/2, 1/8 of system clock frequency; 1/1, 1/4, 1/16, 1/8192, 1/32768 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency; external clock input Interrupt source coincidence with compare register 1</p> <p>Timer counter 0, 1 can be cascade-connected.</p> <p>Timer counter 2 : 8-bit × 1 (square-wave output, additional pulse type 10-bit PWM output, event count, synchronous output event, simple pulse width measurement) (square-wave/PWM output to large current terminal P52 possible) Clock source 1/2, 1/4 of system clock frequency; 1/1, 1/4, 1/16, 1/32, 1/64 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency; external clock input Interrupt source coincidence with compare register 2</p> <p>Timer counter 3 : 8-bit × 1 (square-wave output, event count, generation of remote control carrier, serial 0 baud rate timer) Clock source 1/2, 1/8 of system clock frequency; 1/1, 1/4, 1/16, 1/64, 1/128 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency; external clock input Interrupt source coincidence with compare register 3</p> <p>Timer counter 2, 3 can be cascade-connected.</p> <p>Timer counter 6 : 8-bit freerun timer Clock source 1/1 of system clock frequency; 1/1, 1/4096, 1/8192 of OSC oscillation clock frequency; 1/1, 1/4096, 1/8192 of XI oscillation clock frequency Interrupt source coincidence with compare register 6</p> <p>Timer counter 7 : 16-bit × 1 (square-wave/16-bit PWM output [cycle / duty continuous variable], event count, synchronous output event, pulse width measurement, input capture) (square-wave/PWM output to large current terminal P51 possible) Clock source 1/1, 1/2, 1/4, 1/16 of system clock frequency; 1/1, 1/2, 1/4, 1/16 of OSC oscillation clock frequency; 1/1, 1/2, 1/4, 1/16 of external clock input frequency Interrupt source coincidence with compare register 7 (2 lines)</p> |

Timer Counter (Continue)

Timer counter 8: 16-bit × 1

(square-wave/16-bit PWM output [duty continuous variable], event count, pulse width measurement, input capture)
(square-wave/PWM output to large current terminal P53 possible)Clock source 1/1, 1/2, 1/4, 1/16 of system clock frequency;
1/1, 1/2, 1/4, 1/16 of OSC oscillation clock frequency;
1/1, 1/2, 1/4, 1/16 of external clock input frequency

Interrupt source agreement with compare register 8

Timer counters 7, 8 can be cascade-connected.

(square-wave output, input capture, pulse width measurement is possible as a 32-bit timer.)

Time base timer (one-minute count setting)

Clock source 1/1 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency
Interrupt source 1/128, 1/256, 1/512, 1/1024, 1/8192, 1/32768 of clock source frequency

Watchdog timer

Interrupt source 1/65536, 1/262144, 1/1048576 of system clock frequency

Serial Interface

Serial 0 : synchronous type/UART (full-duplex) × 1

Clock source 1/2, 1/4 of system clock frequency; 1/2 pulse output of timer counter 3;
1/2, 1/4, 1/16, 1/64 of OSC oscillation clock frequency**I/O Pins****I/O**

42

• Common use • Specified pull-up resistor available • Input/output selectable (bit unit)
• Specified pull-down resistor partially selectable**Input**

7

• Common use • Specified pull-up resistor available • Specified pull-down resistor partially selectable

A/D Inputs

10-bit × 4-ch. (with S/H)

LCD

• 24 segments • 4 commons • Static • 1/2, 1/3, or 1/4 duty

LCD power supply separated from VDD (usable if $VDD \leq VLCD \leq 5.5\text{ V}$), built-in LCD power step-up circuit (3/2, 2 and 3 times) and built-in LCD shunt resistance**Special Ports**

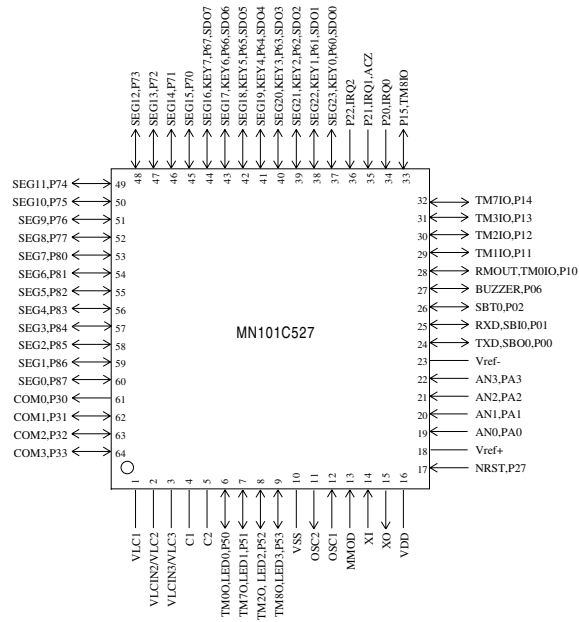
Buzzer output, remote control carrier signal output, high-current drive port

Electrical Characteristics**Supply current**

| Parameter | Symbol | Condition | Limit | | | Unit |
|--------------------------|--------|---|-------|-----|-----|------|
| | | | min | typ | max | |
| Operating supply current | IDD1 | $f_{osc} = 8.39\text{ MHz}$, $VDD = 5\text{ V}$ | | 10 | 25 | mA |
| | IDD2 | $f_x = 32\text{ kHz}$, $VDD = 3\text{ V}$ | | 30 | 100 | μA |
| Supply current at HALT | IDD3 | $f_x = 32\text{ kHz}$, $VDD = 3\text{ V}$, $T_a = 25^\circ\text{C}$ | | | 8 | μA |
| | IDD4 | $f_x = 32\text{ kHz}$, $VDD = 3\text{ V}$, $T_a = -40^\circ\text{C}$ to $+85^\circ\text{C}$ | | | 30 | μA |
| Supply current at STOP | IDD5 | $VDD = 5\text{ V}$, $T_a = 25^\circ\text{C}$ | | | 2 | μA |
| | | $VDD = 5\text{ V}$, $T_a = -40^\circ\text{C}$ to $+85^\circ\text{C}$ | | | 35 | μA |

See the next page for pin assignment and support tool.

Pin Assignment



LQFP064-P-1414 *Pb free

TQFP064-P-1010B *Pb free (under development)

Support Tool

In-circuit Emulator

PX-ICE101C / D + PX-PRB101C52-TQFP064-P-1010B-M
PX-ICE101C / D + PX-PRB101C52-LQFP064-P-1414-M

EPROM Built-in Type

| | |
|------------------------------------|--|
| Type | MN101CP52A |
| ROM (× 8-bit) | 32 K |
| RAM (× 8-bit) | 1.5 K |
| Minimum instruction execution time | 0.10 μs (at 4.5 V to 5.5 V, 20 MHz) 0.238 μs (at 2.7 V to 5.5 V, 8.39 MHz) 61 μs (at 2.3 V to 5.5 V, 32.768 KHz) |
| Package | LQFP064-P-1414 *Pb free, TQFP064-P-1010B *Pb free (under development) |

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