

TC7WZ74FU

1. Functional Description

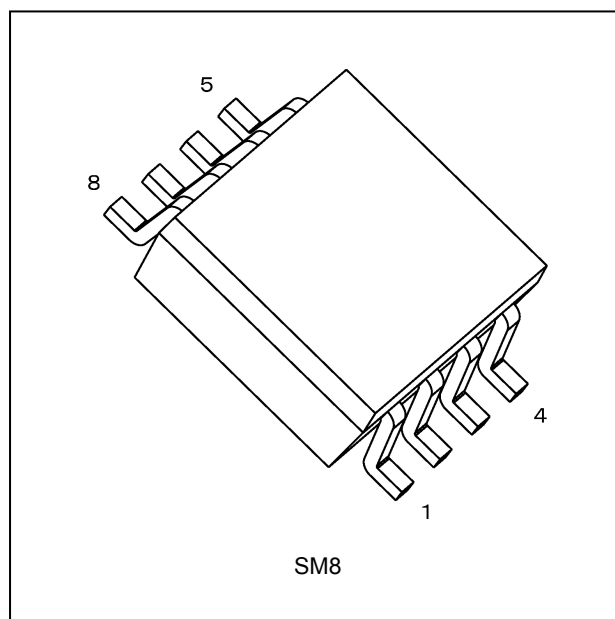
- D-Type Flip Flop with Preset and Clear

2. Features

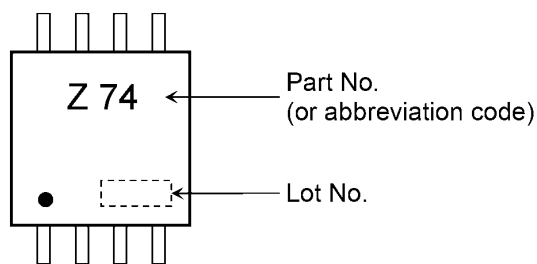
- (1) Wide operating temperature range: $T_{opr} = -40$ to 125°C (Note 1)
- (2) High output current: ± 24 mA (min) ($V_{CC} = 3.0$ V)
- (3) High speed operation: $t_{pd} = 2.8$ ns (typ.) ($V_{CC} = 5.0$ V, $C_L = 50$ pF)
- (4) Wide operating voltage range: $V_{CC} = 1.65$ to 5.5 V
- (5) 5.5 V tolerant inputs
- (6) 5.5 V power down protection output
- (7) Matches the performance of TC74LCX series when operated at 3.3 V V_{CC}

Note 1: For devices with the ordering part number ending in J(CT). $T_{opr} = -40$ to 85°C for the other devices.

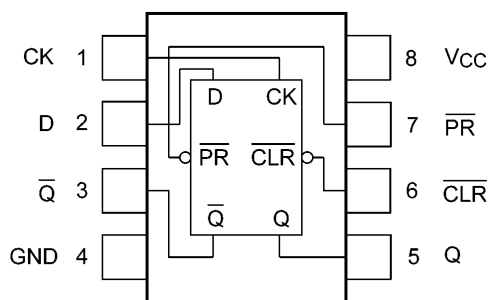
3. Packaging



4. Marking and Pin Assignment



Marking

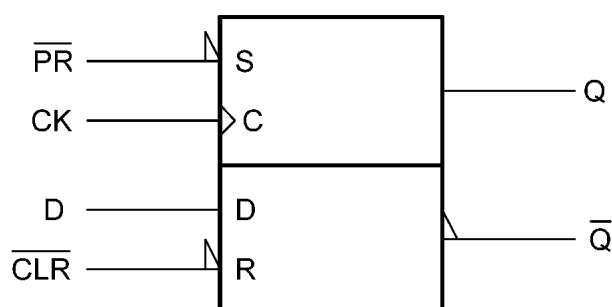


Pin Assignment (Top view)

Start of commercial production

2020-01

5. IEC Logic Symbol



6. Truth Table

| Inputs | | | | Outputs | | Function |
|--------|----|---|----|----------------|-----------------|-----------|
| CLR | PR | D | CK | Q | Q̄ | |
| L | H | X | X | L | H | Clear |
| H | L | X | X | H | L | Preset |
| L | L | X | X | H | H | — |
| H | H | L | ↑ | L | H | — |
| H | H | H | ↑ | H | L | — |
| H | H | X | ↓ | Q _n | Q̄ _n | No Change |

X: Don't care

7. Absolute Maximum Ratings (Note) (Unless otherwise specified, T_a = 25 °C)

| Characteristics | Symbol | Note | Rating | Unit |
|---------------------------------|------------------|----------|-------------------------------|------|
| Supply voltage | V _{CC} | | -0.5 to 6.0 | V |
| Input voltage | V _{IN} | | -0.5 to 6.0 | V |
| DC output voltage | V _{OUT} | (Note 1) | -0.5 to 6.0 | V |
| | | (Note 2) | -0.5 to V _{CC} + 0.5 | |
| Input diode current | I _{IK} | | -20 | mA |
| Output diode current | I _{OK} | (Note 3) | -20 | |
| DC output current | I _{OUT} | | ±50 | |
| V _{CC} /ground current | I _{CC} | | ±50 | mA |
| Power dissipation | P _D | | 300 | mW |
| Storage temperature | T _{stg} | | -65 to 150 | °C |

Note: Exceeding any of the absolute maximum ratings, even briefly, lead to deterioration in IC performance or even destruction.

Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings and the operating ranges.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc.).

Note 1: V_{CC} = 0 V

Note 2: High (H) or Low (L) state. I_{OUT} absolute maximum rating must be observed.

Note 3: V_{OUT} < GND

8. Operating Ranges (Note)

| Characteristics | Symbol | Note | Test Condition | Rating | Unit |
|--------------------------|-----------|----------|--|---------------|------|
| Supply voltage | V_{CC} | | — | 1.65 to 5.5 | V |
| | | (Note 1) | — | 1.5 to 5.5 | |
| Input voltage | V_{IN} | | — | 0 to 5.5 | V |
| Output voltage | V_{OUT} | (Note 2) | — | 0 to 5.5 | V |
| | | (Note 3) | — | 0 to V_{CC} | |
| Operating temperature | T_{opr} | (Note 4) | — | -40 to 125 | °C |
| | | (Note 5) | — | -40 to 85 | |
| Input rise and fall time | dt/dv | | $V_{CC} = 1.8 \pm 0.15 \text{ V}, 2.5 \pm 0.2 \text{ V}$ | 0 to 20 | ns/V |
| | | | $V_{CC} = 3.3 \pm 0.3 \text{ V}$ | 0 to 10 | |
| | | | $V_{CC} = 5.0 \pm 0.5 \text{ V}$ | 0 to 5 | |

Note: The operating ranges must be maintained to ensure the normal operation of the device.

Unused inputs must be tied to either V_{CC} or GND.

Note 1: Data retention only

Note 2: $V_{CC} = 0 \text{ V}$

Note 3: High (H) or Low (L) state.

Note 4: For devices with the ordering part number ending in J(CT).

Note 5: For devices except those with the ordering part number ending in J(CT).

9. Electrical Characteristics

9.1. DC Characteristics (Unless otherwise specified, $T_a = 25^\circ\text{C}$)

| Characteristics | Symbol | Test Condition | | $V_{CC} \text{ (V)}$ | Min | Typ. | Max | Unit |
|---------------------------|-----------|---|-----------------------------|----------------------|----------------------|------|----------------------|---------------|
| High-level input voltage | V_{IH} | — | | 1.65 to 1.8 | $V_{CC} \times 0.75$ | — | — | V |
| | | | | 2.3 to 5.5 | $V_{CC} \times 0.70$ | — | — | |
| Low-level input voltage | V_{IL} | — | | 1.65 to 1.8 | — | — | $V_{CC} \times 0.25$ | V |
| | | | | 2.3 to 5.5 | — | — | $V_{CC} \times 0.30$ | |
| High-level output voltage | V_{OH} | $V_{IN} = V_{IL} \text{ or } V_{IH}$ | $I_{OH} = -100 \mu\text{A}$ | 1.65 | 1.55 | 1.65 | — | V |
| | | | | 2.3 | 2.2 | 2.3 | — | |
| | | | | 3.0 | 2.9 | 3.0 | — | |
| | | | | 4.5 | 4.4 | 4.5 | — | |
| | | | $I_{OH} = -4 \text{ mA}$ | 1.65 | 1.29 | 1.52 | — | |
| | | | $I_{OH} = -8 \text{ mA}$ | 2.3 | 1.9 | 2.15 | — | |
| | | | $I_{OH} = -16 \text{ mA}$ | 3.0 | 2.4 | 2.8 | — | |
| | | | $I_{OH} = -24 \text{ mA}$ | 3.0 | 2.3 | 2.68 | — | |
| Low-level output voltage | V_{OL} | $V_{IN} = V_{IL} \text{ or } V_{IH}$ | $I_{OL} = 100 \mu\text{A}$ | 1.65 | — | 0.0 | 0.1 | V |
| | | | | 2.3 | — | 0.0 | 0.1 | |
| | | | | 3.0 | — | 0.0 | 0.1 | |
| | | | | 4.5 | — | 0.0 | 0.1 | |
| | | | $I_{OL} = 4 \text{ mA}$ | 1.65 | — | 0.08 | 0.24 | |
| | | | $I_{OL} = 8 \text{ mA}$ | 2.3 | — | 0.1 | 0.3 | |
| | | | $I_{OL} = 16 \text{ mA}$ | 3.0 | — | 0.15 | 0.4 | |
| | | | $I_{OL} = 24 \text{ mA}$ | 3.0 | — | 0.22 | 0.55 | |
| Input leakage current | I_{IN} | $V_{IN} = 5.5 \text{ V or GND}$ | | 0 to 5.5 | — | — | ± 1 | μA |
| Power-OFF leakage current | I_{OFF} | $V_{IN} \text{ or GND} = 5.5 \text{ V}$ | | 0 | — | — | 1 | μA |
| Quiescent supply current | I_{CC} | $V_{IN} = 5.5 \text{ V or GND}$ | | 1.65 to 5.5 | — | — | 1 | μA |

9.2. DC Characteristics (Unless otherwise specified, $T_a = -40$ to $85\text{ }^\circ\text{C}$)

| Characteristics | Symbol | Test Condition | | V_{CC} (V) | Min | Max | Unit |
|---------------------------|-----------|---|------------------------------------|--------------|----------------------|----------------------|---------------|
| High-level input voltage | V_{IH} | — | | 1.65 to 1.8 | $V_{CC} \times 0.75$ | — | V |
| | | | | 2.3 to 5.5 | $V_{CC} \times 0.70$ | — | |
| Low-level input voltage | V_{IL} | — | | 1.65 to 1.8 | — | $V_{CC} \times 0.25$ | V |
| | | | | 2.3 to 5.5 | — | $V_{CC} \times 0.30$ | |
| High-level output voltage | V_{OH} | $V_{IN} = V_{IL} \text{ or } V_{IH}$ | $I_{OH} = -100\text{ }\mu\text{A}$ | 1.65 | 1.55 | — | V |
| | | | | 2.3 | 2.2 | — | |
| | | | | 3.0 | 2.9 | — | |
| | | | | 4.5 | 4.4 | — | |
| | | | $I_{OH} = -4\text{ mA}$ | 1.65 | 1.29 | — | |
| | | | $I_{OH} = -8\text{ mA}$ | 2.3 | 1.9 | — | |
| | | | $I_{OH} = -16\text{ mA}$ | 3.0 | 2.4 | — | |
| | | | $I_{OH} = -24\text{ mA}$ | 3.0 | 2.3 | — | |
| | | | $I_{OH} = -32\text{ mA}$ | 4.5 | 3.8 | — | |
| Low-level output voltage | V_{OL} | $V_{IN} = V_{IL} \text{ or } V_{IH}$ | $I_{OL} = 100\text{ }\mu\text{A}$ | 1.65 | — | 0.1 | V |
| | | | | 2.3 | — | 0.1 | |
| | | | | 3.0 | — | 0.1 | |
| | | | | 4.5 | — | 0.1 | |
| | | | $I_{OL} = 4\text{ mA}$ | 1.65 | — | 0.24 | |
| | | | $I_{OL} = 8\text{ mA}$ | 2.3 | — | 0.3 | |
| | | | $I_{OL} = 16\text{ mA}$ | 3.0 | — | 0.4 | |
| | | | $I_{OL} = 24\text{ mA}$ | 3.0 | — | 0.55 | |
| | | | $I_{OL} = 32\text{ mA}$ | 4.5 | — | 0.55 | |
| Input leakage current | I_{IN} | $V_{IN} = 5.5\text{ V or GND}$ | | 0 to 5.5 | — | ± 10 | μA |
| Power-OFF leakage current | I_{OFF} | $V_{IN} \text{ or } V_{OUT} = 5.5\text{ V}$ | | 0 | — | 10 | μA |
| Quiescent supply current | I_{CC} | $V_{IN} = 5.5\text{ V or GND}$ | | 1.65 to 5.5 | — | 10 | μA |

9.3. DC Characteristics (Note) (Unless otherwise specified, $T_a = -40$ to $125\text{ }^\circ\text{C}$)

| Characteristics | Symbol | Test Condition | | V_{CC} (V) | Min | Max | Unit |
|---------------------------|-----------|---|------------------------------------|--------------|----------------------|----------------------|---------------|
| High-level input voltage | V_{IH} | — | | 1.65 to 1.8 | $V_{CC} \times 0.75$ | — | V |
| | | | | 2.3 to 5.5 | $V_{CC} \times 0.70$ | — | |
| Low-level input voltage | V_{IL} | — | | 1.65 to 1.8 | — | $V_{CC} \times 0.25$ | V |
| | | | | 2.3 to 5.5 | — | $V_{CC} \times 0.30$ | |
| High-level output voltage | V_{OH} | $V_{IN} = V_{IL} \text{ or } V_{IH}$ | $I_{OH} = -100\text{ }\mu\text{A}$ | 1.65 | 1.55 | — | V |
| | | | | 2.3 | 2.2 | — | |
| | | | | 3.0 | 2.9 | — | |
| | | | | 4.5 | 4.4 | — | |
| | | | $I_{OH} = -4\text{ mA}$ | 1.65 | 0.95 | — | |
| | | | $I_{OH} = -8\text{ mA}$ | 2.3 | 1.7 | — | |
| | | | $I_{OH} = -16\text{ mA}$ | 3.0 | 2.2 | — | |
| | | | $I_{OH} = -24\text{ mA}$ | 3.0 | 2.0 | — | |
| | | | $I_{OH} = -32\text{ mA}$ | 4.5 | 3.4 | — | |
| Low-level output voltage | V_{OL} | $V_{IN} = V_{IL} \text{ or } V_{IH}$ | $I_{OL} = 100\text{ }\mu\text{A}$ | 1.65 | — | 0.1 | V |
| | | | | 2.3 | — | 0.1 | |
| | | | | 3.0 | — | 0.1 | |
| | | | | 4.5 | — | 0.1 | |
| | | | $I_{OL} = 4\text{ mA}$ | 1.65 | — | 0.7 | |
| | | | $I_{OL} = 8\text{ mA}$ | 2.3 | — | 0.45 | |
| | | | $I_{OL} = 16\text{ mA}$ | 3.0 | — | 0.6 | |
| | | | $I_{OL} = 24\text{ mA}$ | 3.0 | — | 0.8 | |
| | | | $I_{OL} = 32\text{ mA}$ | 4.5 | — | 0.8 | |
| Input leakage current | I_{IN} | $V_{IN} = 5.5\text{ V or GND}$ | | 0 to 5.5 | — | ± 20 | μA |
| Power-OFF leakage current | I_{OFF} | $V_{IN} \text{ or } V_{OUT} = 5.5\text{ V}$ | | 0 | — | 100 | μA |
| Quiescent supply current | I_{CC} | $V_{IN} = 5.5\text{ V or GND}$ | | 1.65 to 5.5 | — | 100 | μA |

Note: For devices with the ordering part number ending in J(CT).

9.4. AC Characteristics (Unless otherwise specified, $T_a = 25\text{ }^{\circ}\text{C}$, Input: $t_r = t_f = 3\text{ ns}$)

| Characteristics | Symbol | Note | Test Condition | V_{CC} (V) | C_L (pF) | Min | Typ. | Max | Unit |
|--|----------------------|----------|---------------------------|----------------|------------|-----|------|------|------|
| Maximum clock frequency | f_{MAX} | | $R_L = 500\text{ }\Omega$ | 1.8 ± 0.15 | 50 | 51 | — | — | MHz |
| | | | | 2.5 ± 0.2 | | 130 | — | — | |
| | | | | 3.3 ± 0.3 | | 200 | — | — | |
| | | | | 5.0 ± 0.5 | | 200 | — | — | |
| Propagation delay time (CK-Q, \bar{Q}) | t_{PLH}, t_{PHL} | | $R_L = 1\text{ M}\Omega$ | 1.8 ± 0.15 | 15 | 2.5 | 10.0 | 18.0 | ns |
| | | | | 2.5 ± 0.2 | | 2.0 | 4.9 | 7.5 | |
| | | | | 3.3 ± 0.3 | | 1.5 | 3.3 | 4.8 | |
| | | | | 5.0 ± 0.5 | | 1.0 | 2.4 | 3.5 | |
| | | | $R_L = 500\text{ }\Omega$ | 3.3 ± 0.3 | 50 | 2.0 | 4.3 | 5.7 | |
| | | | | 5.0 ± 0.5 | | 1.5 | 2.8 | 4.0 | |
| Propagation delay time (CLR, PR-Q, \bar{Q}) | t_{PLH}, t_{PHL} | | $R_L = 1\text{ M}\Omega$ | 1.8 ± 0.15 | 15 | 2.5 | 10.0 | 17.0 | ns |
| | | | | 2.5 ± 0.2 | | 2.0 | 5.0 | 7.3 | |
| | | | | 3.3 ± 0.3 | | 1.5 | 3.4 | 4.8 | |
| | | | | 5.0 ± 0.5 | | 1.5 | 2.2 | 3.5 | |
| | | | $R_L = 500\text{ }\Omega$ | 3.3 ± 0.3 | 50 | 2.0 | 4.3 | 5.7 | |
| | | | | 5.0 ± 0.5 | | 1.0 | 3.1 | 3.9 | |
| Minimum setup time | t_s | | $R_L = 500\text{ }\Omega$ | 2.5 ± 0.2 | 50 | 3.4 | — | — | ns |
| | | | | 3.3 ± 0.3 | | 2.1 | — | — | |
| | | | | 5.0 ± 0.5 | | 1.5 | — | — | |
| Minimum hold time | t_h | | $R_L = 500\text{ }\Omega$ | 2.5 ± 0.2 | 50 | 2.4 | — | — | ns |
| | | | | 3.3 ± 0.3 | | 1.4 | — | — | |
| | | | | 5.0 ± 0.5 | | 1.0 | — | — | |
| Minimum pulse width (CK) | $t_{W(L)}, t_{W(H)}$ | | $R_L = 500\text{ }\Omega$ | 2.5 ± 0.2 | 50 | 3.0 | — | — | ns |
| | | | | 3.3 ± 0.3 | | 3.0 | — | — | |
| | | | | 5.0 ± 0.5 | | 3.0 | — | — | |
| Minimum pulse width (CLR, PR) | $t_{W(L)}$ | | $R_L = 500\text{ }\Omega$ | 2.5 ± 0.2 | 50 | 3.0 | — | — | ns |
| | | | | 3.3 ± 0.3 | | 3.0 | — | — | |
| | | | | 5.0 ± 0.5 | | 3.0 | — | — | |
| Minimum removal time | t_{rem} | | $R_L = 500\text{ }\Omega$ | 2.5 ± 0.2 | 50 | 3.6 | — | — | ns |
| | | | | 3.3 ± 0.3 | | 2.2 | — | — | |
| | | | | 5.0 ± 0.5 | | 1.3 | — | — | |
| Input capacitance | C_{IN} | | — | 0 to 5.5 | — | — | 3.0 | 10 | pF |
| Output capacitance | C_{OUT} | | — | 0 to 5.5 | — | — | 5.0 | — | pF |
| Power dissipation capacitance | C_{PD} | (Note 1) | — | 3.3 | — | — | 30 | — | pF |
| | | | | 5.5 | | — | 47 | — | |

Note 1: C_{PD} is defined as the value of the internal equivalent capacitance which is calculated from the operating current consumption without load. Average operating current can be obtained by the equation.

$$I_{CC(opr)} = C_{PD} \cdot V_{CC} \cdot f_{IN} + I_{CC}$$

9.5. AC Characteristics

(Unless otherwise specified, $T_a = -40$ to $85\text{ }^\circ\text{C}$, Input: $t_r = t_f = 3\text{ ns}$)

| Characteristics | Symbol | Test Condition | V_{CC} (V) | C_L (pF) | Min | Max | Unit |
|--|----------------------|-------------------------|----------------|------------|-----|------|------|
| Maximum clock frequency | f_{MAX} | $RL = 500\ \Omega$ | 1.8 ± 0.15 | 50 | 38 | — | MHz |
| | | | 2.5 ± 0.2 | | 100 | — | |
| | | | 3.3 ± 0.3 | | 150 | — | |
| | | | 5.0 ± 0.5 | | 180 | — | |
| Propagation delay time (CK-Q, \overline{Q}) | t_{PLH}, t_{PHL} | $RL = 1\text{ M}\Omega$ | 1.8 ± 0.15 | 15 | 2.1 | 23.0 | ns |
| | | | 2.5 ± 0.2 | | 1.7 | 9.0 | |
| | | | 3.3 ± 0.3 | | 1.3 | 5.6 | |
| | | | 5.0 ± 0.5 | | 1.0 | 3.9 | |
| | | $RL = 500\ \Omega$ | 3.3 ± 0.3 | 50 | 1.5 | 7.0 | |
| | | | 5.0 ± 0.5 | | 1.3 | 4.4 | |
| Propagation delay time (CLR, PR-Q, \overline{Q}) | t_{PLH}, t_{PHL} | $RL = 1\text{ M}\Omega$ | 1.8 ± 0.15 | 15 | 2.1 | 21.0 | ns |
| | | | 2.5 ± 0.2 | | 1.7 | 8.8 | |
| | | | 3.3 ± 0.3 | | 1.3 | 5.6 | |
| | | | 5.0 ± 0.5 | | 1.0 | 3.9 | |
| | | $RL = 500\ \Omega$ | 3.3 ± 0.3 | 50 | 1.5 | 7.0 | |
| | | | 5.0 ± 0.5 | | 1.0 | 4.3 | |
| Minimum setup time | t_s | $RL = 500\ \Omega$ | 2.5 ± 0.2 | 50 | 4.1 | — | ns |
| | | | 3.3 ± 0.3 | | 2.5 | — | |
| | | | 5.0 ± 0.5 | | 1.7 | — | |
| Minimum hold time | t_h | $RL = 500\ \Omega$ | 2.5 ± 0.2 | 50 | 2.9 | — | ns |
| | | | 3.3 ± 0.3 | | 1.5 | — | |
| | | | 5.0 ± 0.5 | | 1.1 | — | |
| Minimum pulse width (CK) | $t_{W(L)}, t_{W(H)}$ | $RL = 500\ \Omega$ | 2.5 ± 0.2 | 50 | 3.6 | — | ns |
| | | | 3.3 ± 0.3 | | 3.3 | — | |
| | | | 5.0 ± 0.5 | | 3.2 | — | |
| Minimum pulse width (CLR, PR) | $t_{W(L)}$ | $RL = 500\ \Omega$ | 2.5 ± 0.2 | 50 | 3.6 | — | ns |
| | | | 3.3 ± 0.3 | | 3.3 | — | |
| | | | 5.0 ± 0.5 | | 3.2 | — | |
| Minimum removal time | t_{rem} | $RL = 500\ \Omega$ | 2.5 ± 0.2 | 50 | 4.4 | — | ns |
| | | | 3.3 ± 0.3 | | 2.5 | — | |
| | | | 5.0 ± 0.5 | | 1.4 | — | |

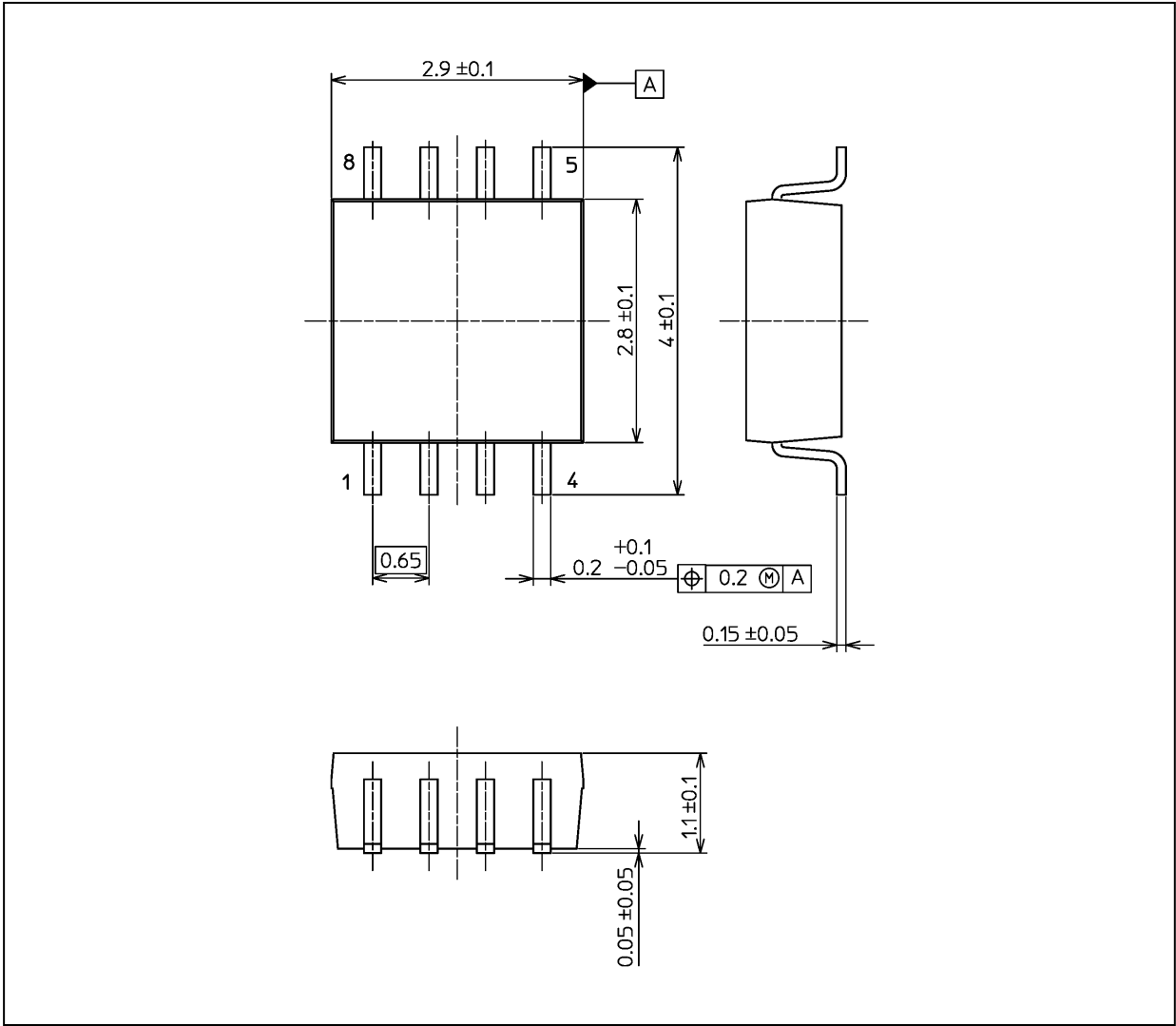
9.6. AC Characteristics (Note) (Unless otherwise specified, $T_a = -40$ to $125\text{ }^{\circ}\text{C}$, Input: $t_r = t_f = 3\text{ ns}$)

| Characteristics | Symbol | Test Condition | V_{CC} (V) | C_L (pF) | Min | Max | Unit |
|---|----------------------|--------------------------|----------------|------------|-----|------|------|
| Maximum clock frequency | f_{MAX} | $RL = 500\text{ }\Omega$ | 1.8 ± 0.15 | 50 | 34 | — | MHz |
| | | | 2.5 ± 0.2 | | 90 | — | |
| | | | 3.3 ± 0.3 | | 135 | — | |
| | | | 5.0 ± 0.5 | | 162 | — | |
| Propagation delay time (CK-Q, \bar{Q}) | t_{PLH}, t_{PHL} | $RL = 1\text{ M}\Omega$ | 1.8 ± 0.15 | 15 | 2.1 | 26.0 | ns |
| | | | 2.5 ± 0.2 | | 1.7 | 10.0 | |
| | | | 3.3 ± 0.3 | | 1.3 | 6.2 | |
| | | | 5.0 ± 0.5 | | 1.0 | 4.3 | |
| | | $RL = 500\text{ }\Omega$ | 3.3 ± 0.3 | 50 | 1.5 | 8.8 | |
| | | | 5.0 ± 0.5 | | 1.3 | 4.9 | |
| Propagation delay time (CLR, PR-Q, \bar{Q}) | t_{PLH}, t_{PHL} | $RL = 1\text{ M}\Omega$ | 1.8 ± 0.15 | 15 | 2.1 | 24.0 | ns |
| | | | 2.5 ± 0.2 | | 1.7 | 9.7 | |
| | | | 3.3 ± 0.3 | | 1.3 | 6.2 | |
| | | | 5.0 ± 0.5 | | 1.0 | 4.3 | |
| | | $RL = 500\text{ }\Omega$ | 3.3 ± 0.3 | 50 | 1.5 | 7.7 | |
| | | | 5.0 ± 0.5 | | 1.0 | 4.8 | |
| Minimum setup time | t_s | $RL = 500\text{ }\Omega$ | 2.5 ± 0.2 | 50 | 4.1 | — | ns |
| | | | 3.3 ± 0.3 | | 2.5 | — | |
| | | | 5.0 ± 0.5 | | 1.7 | — | |
| Minimum hold time | t_h | $RL = 500\text{ }\Omega$ | 2.5 ± 0.2 | 50 | 2.9 | — | ns |
| | | | 3.3 ± 0.3 | | 1.5 | — | |
| | | | 5.0 ± 0.5 | | 1.1 | — | |
| Minimum pulse width (CK) | $t_{W(L)}, t_{W(H)}$ | $RL = 500\text{ }\Omega$ | 2.5 ± 0.2 | 50 | 3.6 | — | ns |
| | | | 3.3 ± 0.3 | | 3.3 | — | |
| | | | 5.0 ± 0.5 | | 3.2 | — | |
| Minimum pulse width (CLR, PR) | $t_{W(L)}$ | $RL = 500\text{ }\Omega$ | 2.5 ± 0.2 | 50 | 3.6 | — | ns |
| | | | 3.3 ± 0.3 | | 3.3 | — | |
| | | | 5.0 ± 0.5 | | 3.2 | — | |
| Minimum removal time | t_{rem} | $RL = 500\text{ }\Omega$ | 2.5 ± 0.2 | 50 | 4.4 | — | ns |
| | | | 3.3 ± 0.3 | | 2.5 | — | |
| | | | 5.0 ± 0.5 | | 1.4 | — | |

Note: For devices with the ordering part number ending in J(CT).

Package Dimensions

Unit: mm



Weight: 21 mg (typ.)

| Package Name(s) |
|-----------------|
| JEDEC: SOT-505 |
| Nickname: SM8 |

RESTRICTIONS ON PRODUCT USE

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