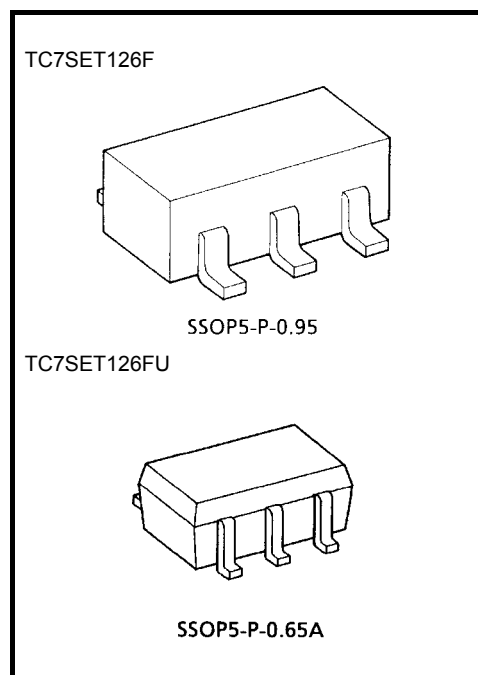


TC7SET126F, TC7SET126FU

Bus Buffer

Features

- High speed $t_{pd} = 3.7 \text{ ns (typ.)}$
at $V_{CC} = 5 \text{ V}$
- Low power dissipation $I_{CC} = 2 \mu\text{A (max)}$
at $T_a = 25^\circ\text{C}$
- Compatible with TTL outputs... $V_{IL} = 0.8 \text{ V (max.)}$
 $V_{IH} = 2.0 \text{ V (min.)}$
- 5.5V tolerant input.



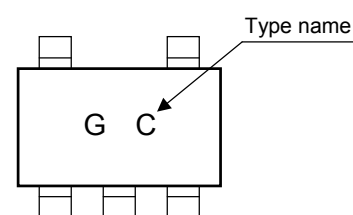
Weight

SSOP5-P-0.95 : 0.016 g (typ.)
SSOP5-P-0.65A : 0.006 g (typ.)

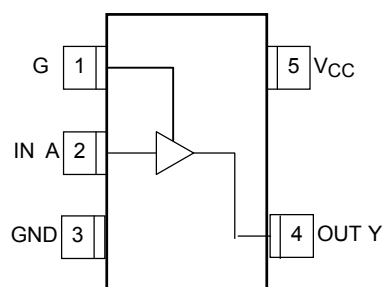
Maximum Ratings ($T_a = 25^\circ\text{C}$)

| Characteristics | Symbol | Rating | Unit |
|-----------------------------|-----------|--------------------------|------------------|
| Supply voltage range | V_{CC} | $-0.5 \sim 7.0$ | V |
| DC input voltage | V_{IN} | $-0.5 \sim 7.0$ | V |
| DC output voltage | V_{OUT} | $-0.5 \sim V_{CC} + 0.5$ | V |
| Input diode current | I_{IK} | -20 | mA |
| Output diode current | I_{OK} | ± 20 | mA |
| DC output current | I_{OUT} | ± 25 | mA |
| DC V_{CC} /ground current | I_{CC} | ± 50 | mA |
| Power dissipation | P_D | 200 | mW |
| Storage temperature | T_{stg} | $-65 \sim 150$ | $^\circ\text{C}$ |
| Lead temperature (10 s) | T_L | 260 | $^\circ\text{C}$ |

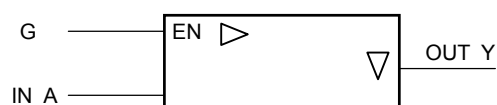
Marking



Pin Assignment (top view)



Logic Diagram



Truth Table

| G | A | Y |
|---|---|---|
| L | X | Z |
| H | L | L |
| H | H | H |

Recommended Operating Conditions

| Characteristics | Symbol | Rating | Unit |
|--------------------------|-----------|-------------|------|
| Supply voltage | V_{CC} | 4.5~5.5 | V |
| Input voltage | V_{IN} | 0~5.5 | V |
| Output voltage | V_{OUT} | 0~ V_{CC} | V |
| Operating temperature | T_{opr} | -40~85 | °C |
| Input rise and fall time | dt/dv | 0~20 | ns/V |

DC Electrical Characteristics

| Characteristics | Symbol | Test Condition | V_{CC} (V) | $T_a = 25^{\circ}\text{C}$ | | | $T_a = -40\sim 85^{\circ}\text{C}$ | | Unit |
|----------------------------------|-----------|---|-----------------------------|----------------------------|------|------------|------------------------------------|-----------|---------------|
| | | | | Min | Typ. | Max | Min | Max | |
| High-level input voltage | V_{IH} | — | 4.5~5.5 | 2.0 | — | — | 2.0 | — | V |
| Low-level input voltage | V_{IL} | — | 4.5~5.5 | — | — | 0.8 | — | 0.8 | V |
| High-level output voltage | V_{OH} | $V_{IN} = V_{IH}$ or V_{IL} | $I_{OH} = -50\ \mu\text{A}$ | 4.5 | 4.4 | 4.5 | — | 4.4 | V |
| | | | $I_{OH} = -8\ \text{mA}$ | 4.5 | 3.94 | — | — | 3.80 | |
| Low-level output voltage | V_{OL} | $V_{IN} = V_{IH}$ or V_{IL} | $I_{OL} = 50\ \mu\text{A}$ | 4.5 | — | 0.0 | 0.10 | — | V |
| | | | $I_{OL} = 8\ \text{mA}$ | 4.5 | — | — | 0.36 | — | |
| 3-state output off-state current | I_{OZ} | $V_{IN} = V_{IH}$ or V_{IL} $V_{OUT} = V_{CC}$ or GND | 5.5 | — | — | ± 0.25 | — | ± 2.5 | μA |
| Input leakage current | I_{IN} | $V_{IN} = 5.5\ \text{V}$ or GND | 0~5.5 | — | — | ± 0.1 | — | ± 1.0 | μA |
| Quiescent supply current | I_{CC} | $V_{IN} = V_{CC}$ or GND | 5.5 | — | — | 2.0 | — | 20.0 | μA |
| | I_{CCT} | Per Input : $V_{IN} = 3.4\ \text{V}$ Other Input : V_{CC} or GND | 5.5 | — | — | 1.35 | — | 1.50 | mA |

AC Characteristics (input: $t_r = t_f = 3 \text{ ns}$)

| Characteristics | Symbol | | Test Condition | | Ta = 25°C | | | Ta = -40~85°C | | Unit |
|-------------------------------|--------------------------------------|--|---------------------|---------------------|-----------|------|------|---------------|------|------|
| | | | V _{CC} (V) | C _L (pF) | Min | Typ. | Max | Min | Max | |
| Propagation delay time | t _{pLH} t _{pHL} | | 5.0 ± 0.5 | 15 | — | 3.7 | 6.0 | 1.0 | 6.9 | ns |
| | | | | 50 | — | 6.0 | 10.4 | 1.0 | 11.9 | |
| 3-state output enable time | t _{pZL} t _{pZH} | | 5.0 ± 0.5 | 15 | — | 3.6 | 5.6 | 1.0 | 6.5 | ns |
| | | | | 50 | — | 6.0 | 10.3 | 1.0 | 11.9 | |
| 3-state output disable time | t _{pLZ} t _{pHZ} | | 5.0 ± 0.5 | 50 | — | 7.3 | 10.0 | 1.0 | 11.5 | ns |
| Input capacitance | C _{IN} | | | | — | 4 | 10 | — | — | pF |
| Output capacitance | C _{OUT} | | | | — | 6 | — | — | — | pF |
| Power dissipation capacitance | C _{PD} | | | (Note) | — | 15 | — | — | — | pF |

Note: C_{PD} is defined as the value of the internal equivalent capacitance which is calculated from the operating current consumption without load.

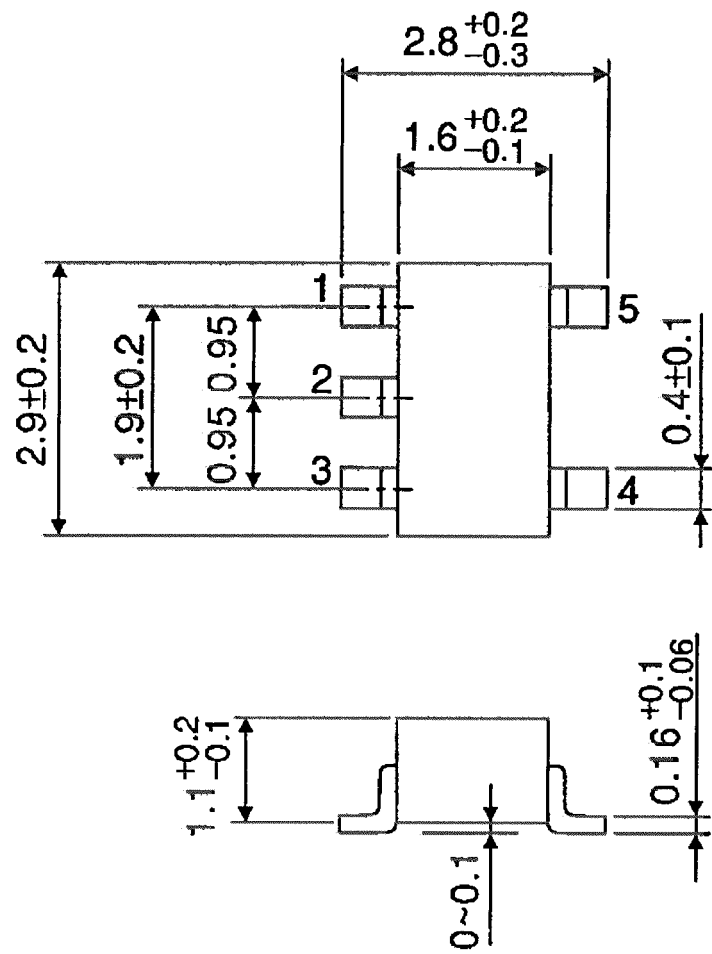
Average operating current can be obtained by the equation:

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

Package Dimensions

SSOP5-P-0.95

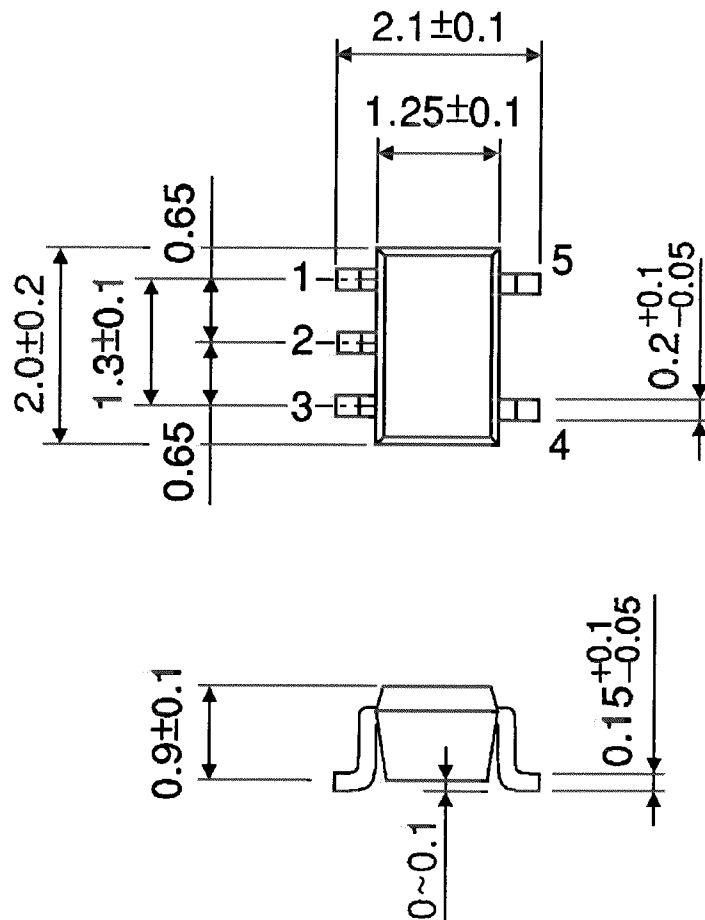
Unit : mm



Weight: 0.016 g (typ.)

SSOP5-P-0.65A

Unit : mm



Weight: 0.006 g (typ.)

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030619EBA

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