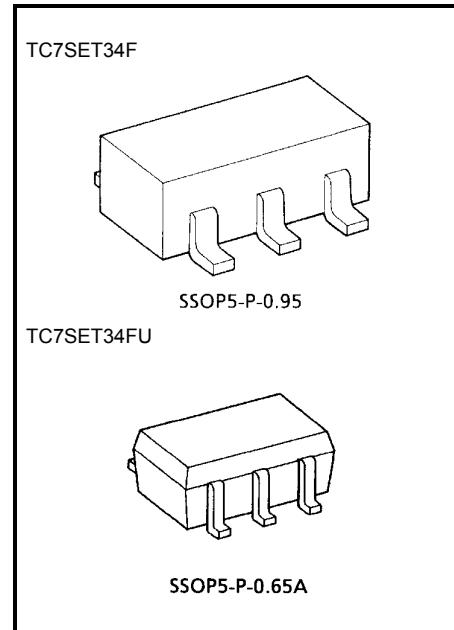


TC7SET34F, TC7SET34FU

Non-Invert Buffer

Features

- High speed $t_{pd} = 5.0$ ns (typ.)
at $V_{CC} = 5$ V
- Low power dissipation $I_{CC} = 2$ μ A (max)
at $T_a = 25^\circ\text{C}$
- Compatible with TTL outputs... $V_{IL} = 0.8$ V (max.)
 $V_{IH} = 2.0$ V (min.)
- 5.5V tolerant input.



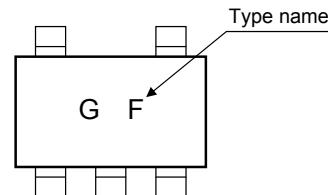
Weight
SSOP5-P-0.95 : 0.016 g (typ.)
SSOP5-P-0.65A : 0.006 g (typ.)

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

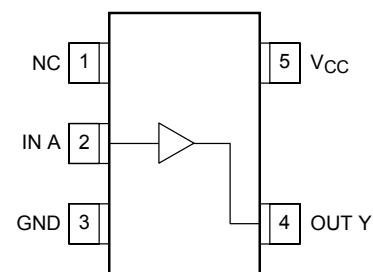
Characteristics	Symbol	Rating	Unit
Supply voltage range	V_{CC}	-0.5~7.0	V
DC input voltage	V_{IN}	-0.5~7.0	V
DC output voltage	V_{OUT}	-0.5~ $V_{CC} + 0.5$	V
Input diode current	I_{IK}	-20	mA
Output diode current	I_{OK}	± 20	mA
DC output current	I_{OUT}	± 25	mA
DC V_{CC} /ground current	I_{CC}	± 50	mA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

Note: 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.).

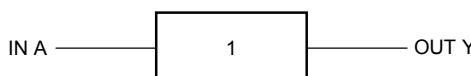
Marking



Pin Assignment (top view)



Logic Diagram



Truth Table

INPUT	OUTPUT
A	Y
L	L
H	H

Operating Ranges

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)	Ta = 25°C			Ta = -40~85°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}	I _{OH} = -50 μA	4.5	4.4	4.5	—	4.4	V
			I _{OH} = -8 mA	4.5	3.94	—	—	3.80	
Low-level output voltage	V _{OL}	V _{IN} = V _{IH} or V _{IL}	I _{OL} = 50 μA	4.5	—	0.0	0.10	—	V
			I _{OL} = 8 mA	4.5	—	—	0.36	—	
Input leakage current	I _{IN}	V _{IN} = 5.5 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 V Other Input : V _{CC} or GND	5.5	—	—	1.35	—	1.50	mA

AC Characteristics (input: t_r = t_f = 3 ns)

Characteristics	Symbol	Test Condition	Ta = 25°C			Ta = -40~85°C		Unit	
			V _{CC} (V)	C _L (pF)	Min	Typ.	Max		
Propagation delay time	t _{PLH} t _{PHL}	5.0 ± 0.5	15	—	5.0	7.0	1.0	8.0	ns
			50	—	8.0	10.5	1.0	12.0	
Input capacitance	C _{IN}			—	4	10	—	10	pF
Power dissipation capacitance	C _{PD}	(Note)		—	17	—	—	—	pF

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

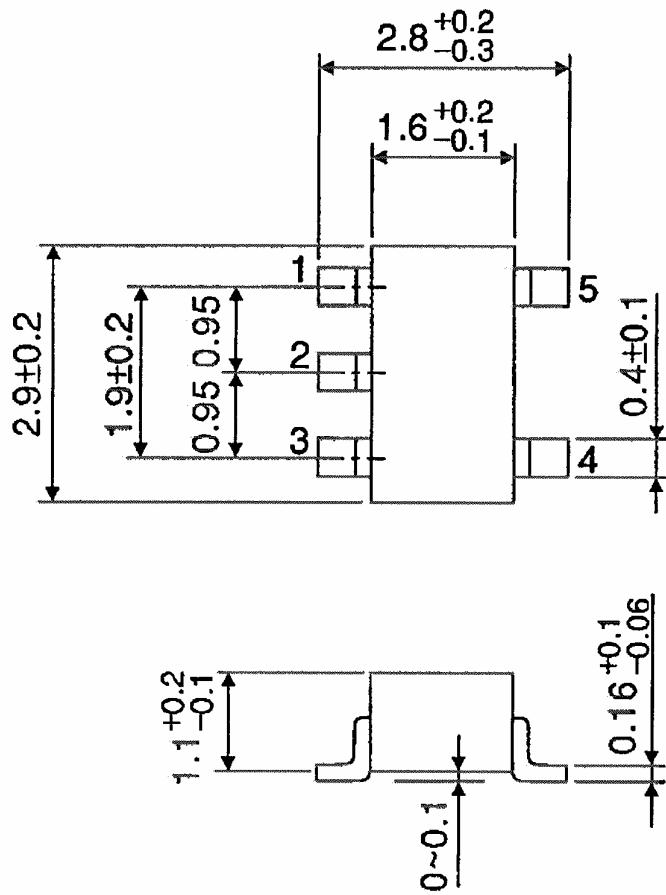
Average operating current can be obtained by the equation:

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

Package Dimensions

SSOP5-P-0.95

Unit : mm

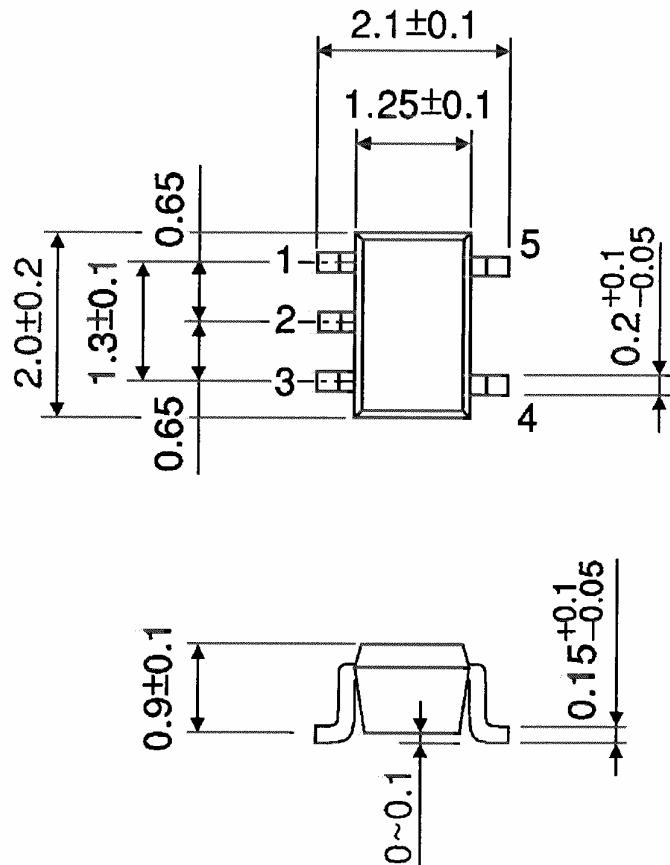


Weight: 0.016 g (typ.)

Package Dimensions

SSOP5-P-0.65A

Unit : mm



Weight: 0.006 g (typ.)

RESTRICTIONS ON PRODUCT USE

20070701-EN GENERAL

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