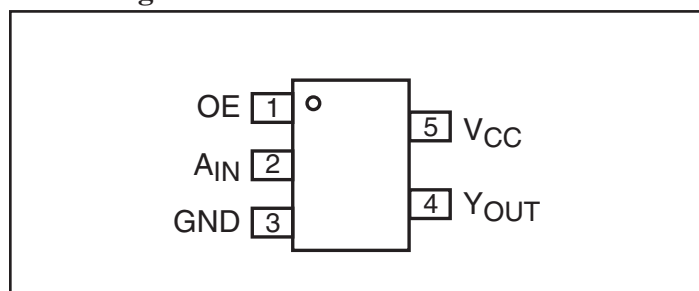
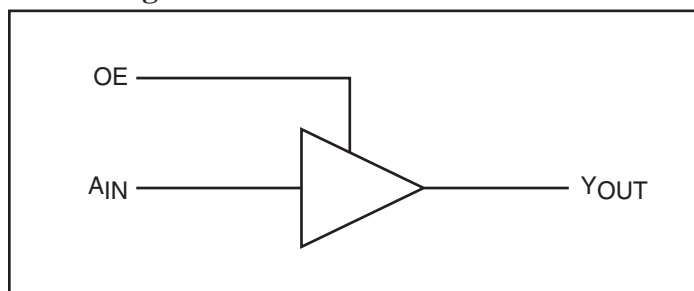


**SOTiny™ Gate ST  
Buffer with 3-State Output**
**Features**

- High-speed:  $t_{PD} = 1.8\text{ns}$  typical
- Broad operating range:  $V_{CC} = 1.8\text{V} - 3.6\text{V}$
- Power down high-impedance inputs/outputs
- High output drive:  $\pm 24\text{mA}$  at  $3\text{V } V_{CC}$
- Packaging (Pb-free & Green available):
  - 5-pin SC70 (C)

**Description**

The PI74ST1G126 is a buffer with 3-state output that operates over the 1.8V to 3.6V  $V_{CC}$  operating range.

**Pin Configuration**

**Block Diagram**

**Pin Description**

Pin Name	Description
A <sub>IN</sub>	Input
OE	Input
Y <sub>OUT</sub>	Output

**Recommended Operating Conditions<sup>(1)</sup>**

Parameter	Condition	Min.	Max.	Units
Supply Voltage ( $V_{CC}$ )		1.8	3.6	V
Input Voltage ( $V_{IN}$ )		0	5.5	
Output Voltage ( $V_{OUT}$ )		0	$V_{CC}$	
Operating Temperature		-40	85	°C
Input Rise and Fall Time ( $t_r, t_f$ )	$V_{CC} = 1.8\text{V}, 2.5\text{V} \pm 0.2\text{V}$	0	20	ns/V
	$V_{CC} = 3.3\text{V} \pm 0.3\text{V}$	0	10	

**Function Table**

Inputs		Outputs
OE	A <sub>IN</sub>	Y <sub>OUT</sub>
H	L	L
H	H	H
L	X	Z

**Notes:**

1. H = HIGH Logic Level  
L = LOW Logic Level  
X = Don't Care  
Z = HIGH Impedance State

**Notes:**

1. Unused inputs must be held HIGH or LOW. They may not float.



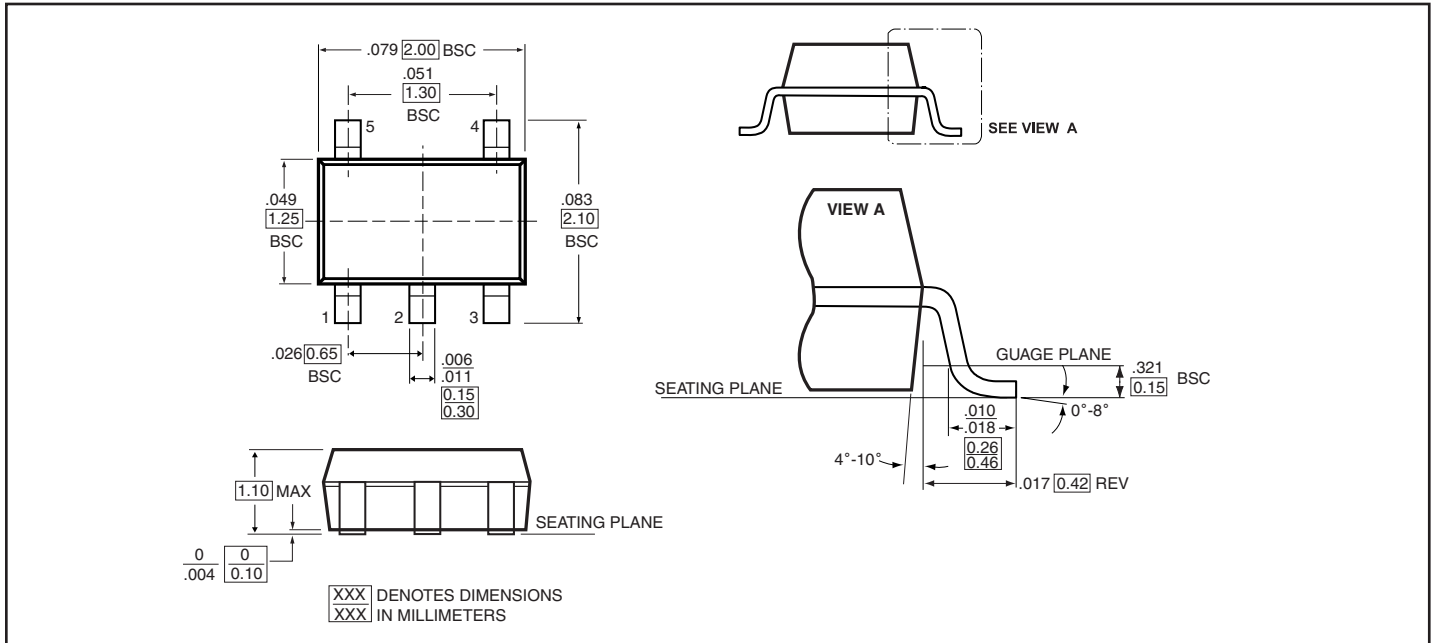
### AC Electrical Characteristics

Symbol	Parameter	V <sub>CC</sub> (V)	Conditions	T <sub>A</sub> = +25°C			T <sub>A</sub> = -40° C to +85°C		Units	Fig. No.
				Min.	Typ.	Max.	Min.	Max.		
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay	1.8 2.5±0.2 3.3±0.3	C <sub>L</sub> = 15pF, R <sub>L</sub> = 1MΩ,	2.0 0.8 0.5	2.7 1.7 1.1	3.6 2.3 2.0	2.0 0.8 0.5	4.0 2.6 2.2	ns	1 3
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay	3.3±0.3	C <sub>L</sub> = 50pF, R <sub>L</sub> = 500Ω, S <sub>1</sub> = Open	1.5	2.7	3.6	1.5	4.0		1 3
t <sub>PZL</sub> t <sub>PZH</sub>	Output Enable Time	1.8 2.5±0.2 3.3±0.3	C <sub>L</sub> = 50pF, R <sub>D</sub> = 500Ω, R <sub>U</sub> = 500, S <sub>1</sub> = GND for t <sub>PZH</sub> S <sub>1</sub> = V <sub>IN</sub> for t <sub>PZL</sub> V <sub>IN</sub> = 2 x V <sub>CC</sub>	2.0 1.5 1.5	5.9 4.0 3.0	7.8 5.4 4.1	2.0 1.5 1.5	8.6 6.0 4.5		1 3
t <sub>PLZ</sub> t <sub>PHZ</sub>	Output Disable Time	1.8 2.5±0.2 3.3±0.3	C <sub>L</sub> = 50pF, R <sub>D</sub> = 500Ω, R <sub>U</sub> = 500, S <sub>1</sub> = GND for t <sub>PHZ</sub> S <sub>1</sub> = V <sub>IN</sub> for t <sub>PLZ</sub> V <sub>IN</sub> = 2 x V <sub>CC</sub>	2.0 1.0 1.0	5.4 4.0 3.2	6.4 4.8 3.8	2.0 1.0 1.0	7.1 5.3 4.2		1 3
C <sub>IN</sub>	Input Capacitance	V <sub>IN</sub> = 0			4				pF	
C <sub>OUT</sub>	Output Capacitance	V <sub>IN</sub> = 0			8					
C <sub>PD</sub> <sup>(1)</sup>	Power Dissipation Capacitance	3.3			17					2

**Notes:**

- C<sub>PD</sub> is defined as the value of the internal equivalent capacitance which is derived from dynamic operating current consumption (I<sub>CCD</sub>) at no output loading and operating at 50% duty cycle (see Figure 2). C<sub>PD</sub> is related to I<sub>CCD</sub> dynamic operating current by the expression:  
I<sub>CCD</sub> = (C<sub>PD</sub>)(V<sub>CC</sub>)(f<sub>IN</sub>) + (I<sub>CC static</sub>).



**Packaging Mechanical: 5-Pin SC70 (C)**

**Ordering Information**

Ordering Code	Packaging Code	Package Type	Package Top Marking
PI74ST1G126CEX	C	Pb-free & Green, 5-pin SC70	AB

**Notes:**

- Thermal characteristics can be found on the company web site at [www.pericom.com/packaging/](http://www.pericom.com/packaging/)
- E = Pb-free and Green
- X suffix = Tape/Reel