Maximum Ratings

(Above which the useful life may be impaired. For user guidelines, not tested.)

Storage Temperature	–65°C to +150°C
Ambient Temperature with Power Applied	–40°C to +85°C
Supply Voltage to Ground Potential (Input & V_{CC} Only)	–0.5V to +4.6V
Supply Voltage to Ground Potential (Outputs & D/O Only)	–0.5V to +4.6V
DC Input Voltage	–0.5V to +5.5V
DC Output Current	120mA
Power Dissipation	1.0W

Note:
Stresses greater than those listed under MAXIMUM RATINGS may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect reliability.

DC Electrical Characteristics (Over Operating Range, T_A = –40°C to +85°C, V_{CC} = 3.3V ± 10%)

Parameters	Description	Test Conditions[1]	Min	Typ.[2]	Max	Units
V_{IH}	Input HIGH Voltage	Guaranteed Logic HIGH Level	2.0			V
V_{IL}	Input LOW Voltage	Guaranteed Logic Low Level	–0.5		0.8	
I_{IH}	Input HIGH Current	V_{CC} = Max, V_{IN} = V_{CC}			±1	µA
I_{IL}	Input LOW Current	V_{CC} = Max, V_{IN} = GND			±1	
I_{OZH}	High-Impedance Output Current	0 ≤ A, B ≤ V_{CC}			±1	
V_{IK}	Clamp Diode Voltage	V_{CC} = Min, I_{IN} = –18mA		–0.73	–1.2	V
R_{ON}	Switch On Resistance[3]	V_{CC} = Min, V_{IN} = 0.0V I_{ON} = 48mA or 64mA		5	7	Ω
		V_{CC} = Min, V_{IN} = 0.0V I_{ON} = 48mA or 64mA		8	15	

Capacitance (T_A = 25°C, f = 1 MHz)

Parameters[4]	Description	Test Conditions	Typ.	Units
CIN	Input Capacitance	V_{IN} = 0V	3.5	pF
COFF	A/B Capacitance, Switch Off		5.0	
CON	A/B Capacitance, Switch On		10.0	

Notes:
1. For Max. or Min. conditions, use appropriate value specified under Electrical Characteristics for the applicable device type.
2. Typical values are at VCC = 3.3V, TA = 25°C ambient and maximum loading.
3. Measured by the voltage drop between A and B pin at indicated current through the switch. ON resistance is determined by the lower of the voltages on the two (A,B) pins.
4. This parameter is determined by device characterization but is not production tested.

Power Supply Characteristics

Parameters	Description	Test Conditions(1)	Min.	Typ.(2)	Max.	Units
ICC	Quiescent Power Supply Current	V_{CC} = Max, V_{IN} = GND or V_{CC}		260	500	µA
DICC	Supply Current per Input @ TTL HIGH	V_{CC} = Max, V_{IN} = 3.0V(3)			750	

Notes:
1. For Max. or Min. conditions, use appropriate value specified under Electrical Characteristics for the applicable device.
2. Typical values are at VCC = 3.3V, +25°C ambient.
3. Per TTL driven input (control inputs only); A and B pins do not contribute to ICC.

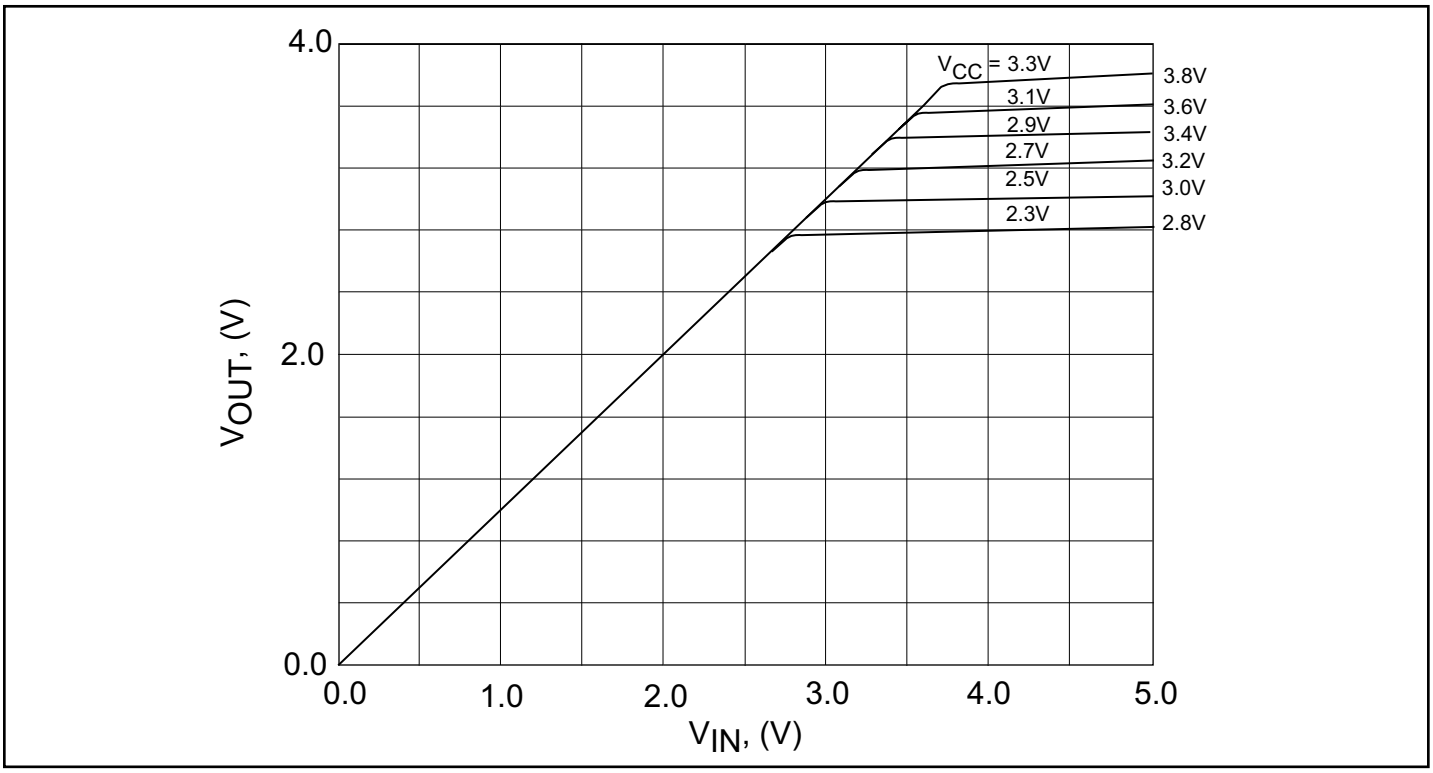
Switching Characteristics over 3.3V Operating Range

Parameters	Description	Conditions(1)	Com.		Units
			Min	Max	
tPLH tPHL	Propogation Delay(2,3) Ax to Bx, Bx to Ax	C_L = 50pF R_L = 500-ohm		0.25	ns
tPZH tPZL	Bus Enable Time $\overline{BE}$x to Ax or Bx	C_L = 50pF R_L = 500-ohm R = 500-ohm	1.5	6.5	
tPHZ tPLZ	Bus Disable Time $\overline{BE}$x to Ax or Bx		1.5	5.5	

Switching Characteristics over 2.5V Operating Range

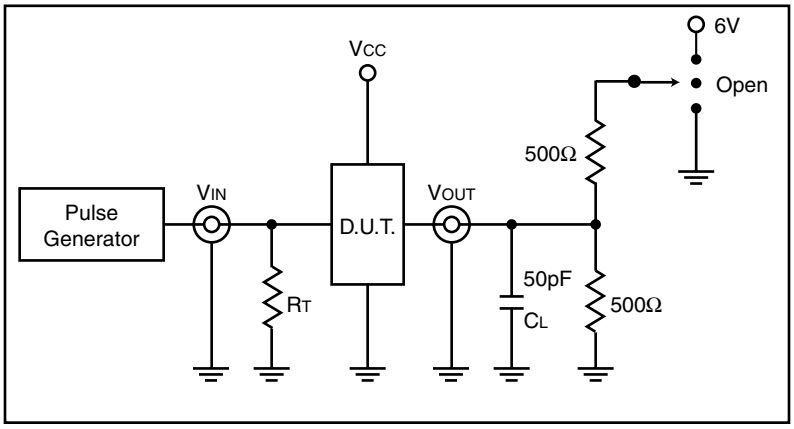
Parameters	Description	Conditions(1)	Com.		Units
			Min	Max	
tPLH tPHL	Propogation Delay(2,3) Ax to Bx, Bx to Ax	C_L = 50pF R_L = 500-ohm		0.25	ns
tPZH tPZL	Bus Enable Time $\overline{BE}$x to Ax or Bx	C_L = 50pF R_L = 500-ohm R = 500-ohm	1.5	9.8	
tPHZ tPLZ	Bus Disable Time $\overline{BE}$x to Ax or Bx		1.5	8.3	

Notes:
1. See test circuit and waveforms.
2. This parameter is guaranteed but not tested on Propagation Delays.
3. The bus switch contributes no propagational delay other than the RC delay of the ON resistance of the switch and the load capacitance. The time constant for the switch alone is of the order of 0.25ns for 50pF load. Since this time constant is much smaller than the rise/fall times of typical driving signals, it adds very little propagational delay to the system. Propagational delay of the bus switch when used in a system is determined by the driving circuit on the driving side of the switch and its interaction with the load on the driven side.



Output Voltage vs. Input Voltage over Various Supply Voltages

Test Circuit



Switch Position

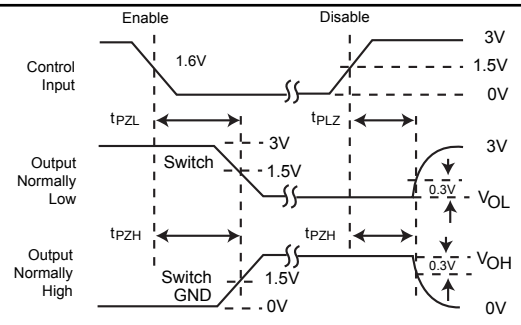
Test	Switch
Disable LOW	6V
Enable LOW	6V
Disable HIGH	GND
Enable HIGH	GND
t_{PD}	Open

Definitions:

C_L = Load capacitance (includes jig and probe capacitance)

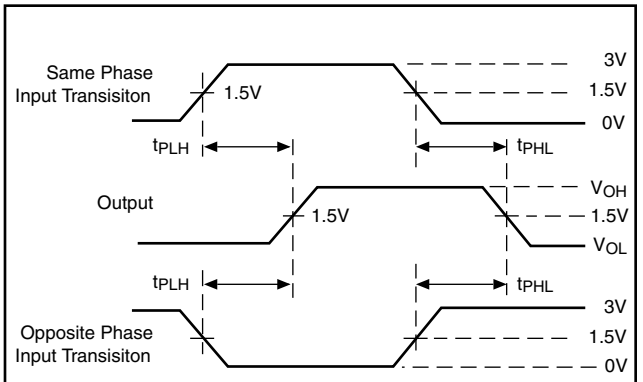
R_T = Termination resistance (should be equal to Z_{OUT} of the pulse generator)

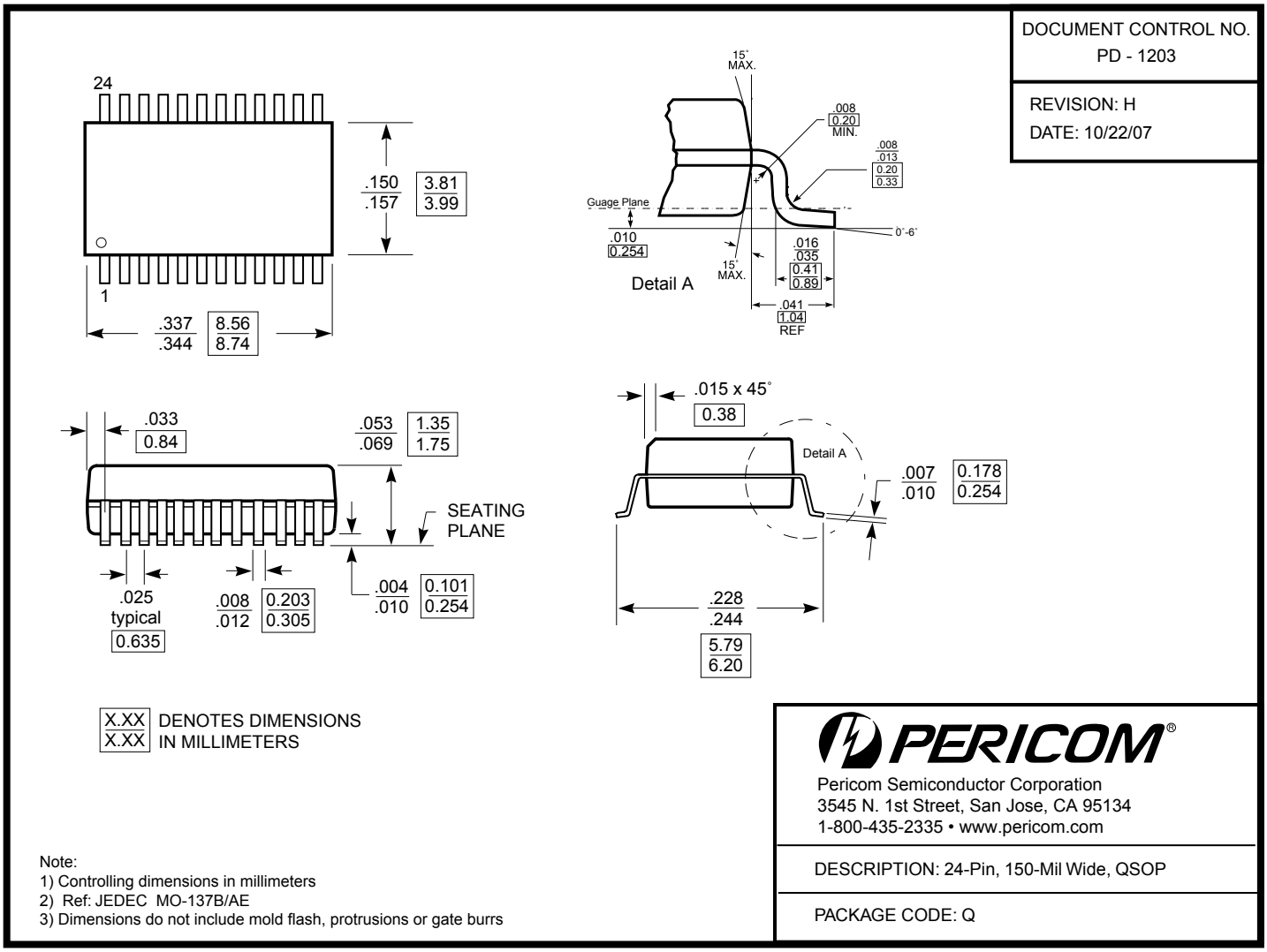
Enable and Disable Timing



1. Input Control Enable = Low Input Control Device = High
2. Pulse Generator total pulses
   Rate ≤1.0 MHz; Z_{OUT}≤50-Ohms; t_F, t_R ≤2.5ns

Propagation Delay





Ordering Information

Ordering Code	Package Code	Package Description
PI3C3384QE	Q	Pb-Free & Green, 24-pin QSOP

Notes:

1. Thermal characteristics can be found on the company web site at www.pericom.com/packaging/
2. E = Pb-free and Green
3. Adding an X suffix = Tape/Reel