

**4-Channel 2:1 Mux/DeMux, Enable Low 1.8V/2.5V/3.3V, High-Bandwidth, Hot Plug**

**Description**

The DIODES PI3CH3257 is a 4-channel, 2:1 Multiplexer/ Demultiplexer with tri-state outputs. The switch introduces no additional ground bounce noise or propagation delay.

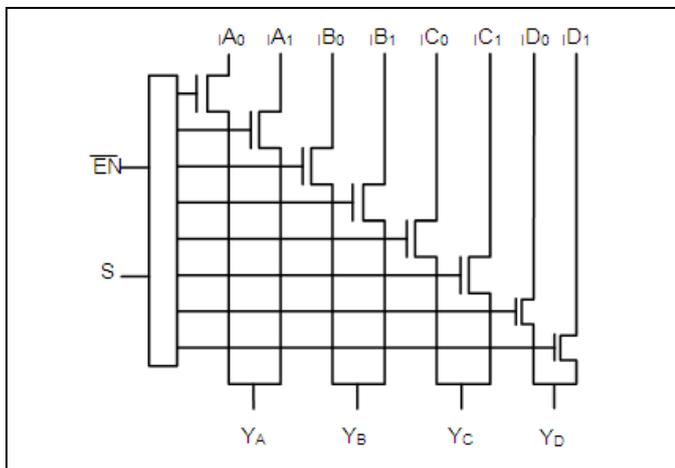
The PI3CH3257 device is very useful in switching signals that have high bandwidth (500 MHz).

**Truth Table**

EX	S	YA	YB	YC	YD	Function
H	X	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Disable
L	L	IA0	IB0	IC0	ID0	S = 0
L	H	IA1	IB1	IC1	ID1	S = 1

Note: H=High Voltage Level; L=Low Voltage Level

**Block Diagram**



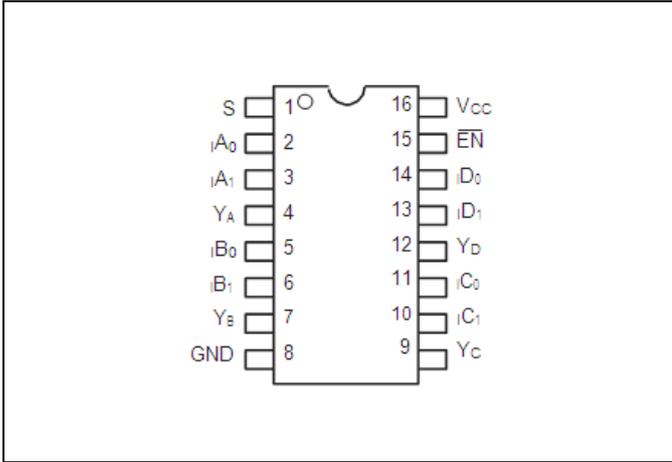
**Features**

- Near-Zero Propagation Delay
- 4Ω Switches Connect Inputs to Outputs
- High Signal Passing Bandwidth (500MHz)
- Beyond Rail-to-Rail Switching
  - 0 to 5V Switching with 3.3V Power Supply
  - 0 to 3.3V Switching with 2.5V Power Supply
  - 0 to 2.5V Switching with 1.8V Power Supply
- 5V I/O Tolerant with Supply in OFF and ON State
- 1.8V, 2.5V and 3.3V Supply Voltage Operation
- Hot Insertion Capable
- Industrial Operating Temperature: -40°C to +85°C
- 8kV ESD Protection (Human Body Model)
- Latch-Up Performance: >200mA per JESD17
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](#) or your local Diodes representative.   
<https://www.diodes.com/quality/product-definitions>
- Packaging (Pb-free & Green available):
  - 16-pin, 173-mil Wide Plastic, TSSOP (L)
  - 16-pin, 150-mil Wide Plastic, QSOP (Q)
  - 16-pin, 1.8x2.6mm, UQFN (ZTA)

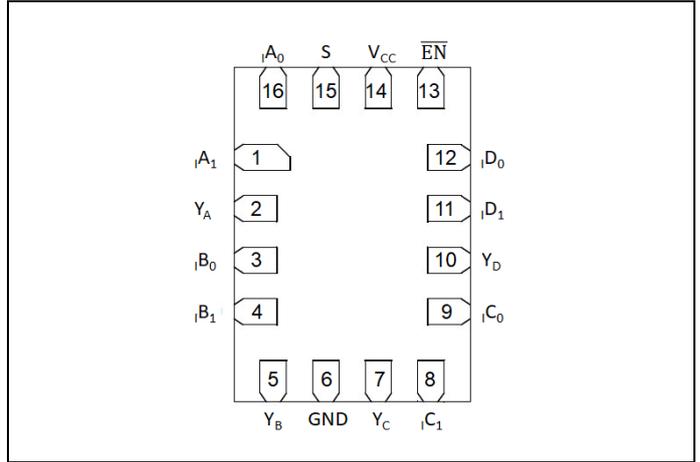
Notes:

1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

**Pin Configuration**



TSSOP/QSOP Top View



UQFN 1.8x2.6 Top View

**Pin Description**

TSSOP/QSOP Pin#	UQFN Pin#	Pin Name	Description
1	15	S	Select Inputs
2, 3, 5, 6, 11, 10, 14, 13	16, 1, 3, 4, 9, 8, 12, 11	iA <sub>0</sub> , iA <sub>1</sub> , iB <sub>0</sub> , iB <sub>1</sub> , iC <sub>0</sub> , iC <sub>1</sub> , iD <sub>0</sub> , iD <sub>1</sub>	Data Inputs
4, 7, 9, 12	2, 5, 7, 10	Y <sub>A</sub> , Y <sub>B</sub> , Y <sub>C</sub> , Y <sub>D</sub>	Data Outputs
8	6	GND	Ground
15	13	$\overline{\text{EN}}$	Enable
16	14	V <sub>CC</sub>	Power
—	Center Pad	GND	—

## Maximum Ratings

Storage Temperature .....	-65°C to +150°C
Supply Voltage to Ground Potential .....	-0.5V to +4.6V
DC Input Voltage .....	-0.5V to +6.0V
DC Output Current .....	64mA
Power Dissipation .....	0.35W
Junction Temperature (T <sub>j</sub> ) .....	125°C
ESD (All Pins) .....	.8KV (HBM) and 1KV (CDM)

**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

3.3V Supply (Over Operating Range, T<sub>A</sub> = -40°C ~ +85°C, V<sub>CC</sub> = 3.3V ± 10%, unless otherwise noted)

Symbol	Description	Test Conditions <sup>(1)</sup>	Min	Typ <sup>(2)</sup>	Max	Unit
V <sub>IH</sub>	Control Input HIGH Voltage	Guaranteed Logic HIGH Level	2.0	—	—	V
V <sub>IL</sub>	Control Input LOW Voltage	Guaranteed Logic LOW Level	-0.5	—	0.8	V
V <sub>IK</sub>	Clamp Diode Voltage	V <sub>CC</sub> = Max., I <sub>IN</sub> = -18mA	—	-1.3	-1.8	V
I <sub>IH</sub>	Input HIGH Current	V <sub>CC</sub> = Max., V <sub>IN</sub> = V <sub>CC</sub>	—	—	±1	μA
I <sub>IL</sub>	Input Low Current	V <sub>CC</sub> = Max., V <sub>IN</sub> = GND	—	—	±1	μA
I <sub>OZH</sub>	High-Impedance Current <sup>(3)</sup>	0 ≤ Y, I <sub>n</sub> ≤ V <sub>CC</sub>	—	—	±1	μA
I <sub>OFF</sub>	Power-Off Leakage Current	V <sub>CC</sub> = 0V, V <sub>IN</sub> = 0V to 5.5V	—	—	1	μA
R <sub>ON</sub>	Switch On-Resistance <sup>(4)</sup>	V <sub>CC</sub> = 3V, V <sub>IN</sub> = 0.0V I <sub>ON</sub> = 30mA	—	3.5	6	Ω
		V <sub>CC</sub> = 3V, V <sub>IN</sub> = 2.4V I <sub>ON</sub> = -15mA	—	4	8	

**Notes:**

- For maximum or minimum conditions, use appropriate value specified under Electrical Characteristics for the applicable device type.
- Typical values are at V<sub>CC</sub> = 3.3V, T<sub>A</sub> = 25°C ambient and maximum loading.
- Not more than one output should be shorted at one time. Duration of the test should not exceed one second.
- Measured by the voltage drop between Y and In pin at indicated current through the switch. ON resistance is determined by the lower of the voltages on the two (Y, In) pins.

2.5V Supply (Over Operating Range, T<sub>A</sub> = -40°C ~ +85°C, V<sub>CC</sub> = 2.5V ± 10%, unless otherwise noted)

Symbol	Description	Test Conditions <sup>(1)</sup>	Min	Typ <sup>(2)</sup>	Max	Unit
V <sub>IH</sub>	Control Input HIGH Voltage	Guaranteed Logic HIGH Level	1.7	—	V <sub>CC</sub> +0.3	V
V <sub>IL</sub>	Control Input LOW Voltage	Guaranteed Logic LOW Level	-0.3	—	0.7	V
V <sub>IK</sub>	Clamp Diode Voltage	V <sub>CC</sub> = Max., I <sub>IN</sub> = -18mA	—	-1.3	-1.8	V
I <sub>IH</sub>	Input HIGH Current	V <sub>CC</sub> = Max., V <sub>IN</sub> = V <sub>CC</sub>	—	—	±1	μA
I <sub>IL</sub>	Input Low Current	V <sub>CC</sub> = Max., V <sub>IN</sub> = GND	—	—	±1	μA
I <sub>OZH</sub>	High-Impedance Current <sup>(3)</sup>	0 ≤ Y, I <sub>n</sub> ≤ V <sub>CC</sub>	—	—	±1	μA
I <sub>OFF</sub>	Power-Off Leakage Current	V <sub>CC</sub> = 0V, V <sub>IN</sub> = 0V to 5.5V	—	—	1	μA
R <sub>ON</sub>	Switch On-Resistance <sup>(4)</sup>	V <sub>CC</sub> = 2.3V, V <sub>IN</sub> = 0.0V I <sub>ON</sub> = 30mA	—	4	8	Ω
		V <sub>CC</sub> = 2.3V, V <sub>IN</sub> = 1.7V I <sub>ON</sub> = -15mA	—	4	9	

**Notes:**

- For maximum or minimum conditions, use appropriate value specified under Electrical Characteristics for the applicable device type.
- Typical values are at V<sub>CC</sub> = 2.5V, T<sub>A</sub> = 25°C ambient and maximum loading.
- Not more than one output should be shorted at one time. Duration of the test should not exceed one second.
- Measured by the voltage drop between Y and In pin at indicated current through the switch. ON resistance is determined by the lower of the voltages on the two (Y, In) pins.

1.8V Supply (Over Operating Range,  $T_A = -40^{\circ}\text{C} \sim +85^{\circ}\text{C}$ ,  $V_{CC} = 1.8\text{V} \pm 10\%$ , unless otherwise noted)

Symbol	Description	Test Conditions <sup>(1)</sup>	Min	Typ <sup>(2)</sup>	Max	Unit
$V_{IH}$	Control Input HIGH Voltage	Guaranteed Logic HIGH Level	1.2	—	$V_{CC}+0.3$	V
$V_{IL}$	Control Input LOW Voltage	Guaranteed Logic LOW Level	-0.3	—	0.6	V
$V_{IK}$	Clamp Diode Voltage	$V_{CC} = \text{Max.}$ , $I_{IN} = -18\text{mA}$	—	-1.3	-1.8	V
$I_{IH}$	Input HIGH Current	$V_{CC} = \text{Max.}$ , $V_{IN} = V_{CC}$	—	—	$\pm 1$	$\mu\text{A}$
$I_{IL}$	Input Low Current	$V_{CC} = \text{Max.}$ , $V_{IN} = \text{GND}$	—	—	$\pm 1$	$\mu\text{A}$
$I_{OZH}$	High-Impedance Current <sup>(3)</sup>	$0 \leq Y, \text{In} \leq V_{CC}$	—	—	$\pm 1$	$\mu\text{A}$
$I_{OFF}$	Power-Off Leakage Current	$V_{CC} = 0\text{V}$ , $V_{IN} = 0\text{V to } 5.5\text{V}$	—	—	1	$\mu\text{A}$
$R_{ON}$	Switch On-Resistance <sup>(4)</sup>	$V_{CC} = 1.65\text{V}$ , $V_{IN} = 0.0\text{V}$ $I_{ON} = 30\text{mA}$	—	6	10	$\Omega$
		$V_{CC} = 1.65$ , $V_{IN} = 1.05\text{V}$ $I_{ON} = -15\text{mA}$	—	10	15	

Notes:

- For maximum or minimum conditions, use appropriate value specified under Electrical Characteristics for the applicable device type.
- Typical values are at  $V_{CC} = 1.8\text{V}$ ,  $T_A = 25^{\circ}\text{C}$  ambient and maximum loading.
- Not more than one output should be shorted at one time. Duration of the test should not exceed one second.
- Measured by the voltage drop between Y and In pin at indicated current through the switch. ON resistance is determined by the lower of the voltages on the two (Y, In) pins.

## Capacitance

 $T_A = 25^{\circ}\text{C}$ ,  $f = 1\text{MHz}$ 

Symbol <sup>(1)</sup>	Description	Test Conditions	Typ.	Max.	Unit
$C_{IN}$	Input Capacitance	$V_{IN} = 0\text{V}$	1.6	3.5	pF
$C_{OFF(IN)}$	In Capacitance, Switch Off		3.2	5	
$C_{OFF(Y)}$	Y Capacitance, Switch Off		4.9	7	
$C_{ON}$	Y/In Capacitance, Switch On		8.4	13	

Note:

- These parameters are determined by device characterization but are not production tested

## Power Supply Characteristics

Symbol	Description	Test Conditions <sup>(1)</sup>	Min	Typ	Max	Unit
$I_{CC}$	Quiescent Power Supply Current	$V_{CC} = 3.6\text{V}$ , $V_{IN} = \text{GND or } V_{CC}$	—	0.1	0.5	mA

Note:

- For maximum or minimum conditions, use appropriate value specified under Electrical Characteristics for the applicable device.

## Dynamic Electrical Characteristics

 Over Operating Range,  $T_A = -40^{\circ}\text{C} \sim +85^{\circ}\text{C}$ ,  $V_{CC} = 3.3\text{V} \pm 10\%$ 

Symbol	Description	Test Conditions	Min	Typ	Max	Unit
$X_{TALK}$	Crosstalk	See Test Diagram	—	-60	—	dB
$O_{IRR}$	Off-Isolation	See Test Diagram	—	-60	—	
BW	-3dB Bandwidth	See Test Diagram	—	500	—	MHz

## Switch Characteristics

### Over 3.3V Operating Range

Symbol	Description	Test Conditions <sup>(1)</sup>	Min	Typ	Max	Unit
t <sub>PLH</sub> , t <sub>PHL</sub>	Propagation Delay <sup>(2, 3)</sup> Y to In, In to Y	See Test Diagram	—	—	0.3	ns
t <sub>PZH</sub> , t <sub>PZL</sub>	Enable Time S or $\overline{\text{EN}}$ to Y or In	See Test Diagram	1.5	—	5.5	
t <sub>PHZ</sub> , t <sub>PLZ</sub>	Disable Time S or $\overline{\text{EN}}$ to Y or In	See Test Diagram	1.5	—	6	

Note:

1. See test circuit and waveforms.
2. This parameter is guaranteed but not tested on propagation delays.
3. The switch contributes no propagation 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 0.30ns for 10pF load. Because this time constant is much smaller than the rise/fall times of typical driving signals, it adds very little propagation delay to the system. Propagation delay of the 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.

### Over 2.5V Operating Range

Symbol	Description	Test Conditions <sup>(1)</sup>	Min	Typ	Max	Unit
t <sub>PLH</sub> , t <sub>PHL</sub>	Propagation Delay <sup>(2, 3)</sup> Y to In, In to Y	See Test Diagram	—	—	0.3	ns
t <sub>PZH</sub> , t <sub>PZL</sub>	Enable Time S or $\overline{\text{EN}}$ to Y or In	See Test Diagram	1.5	—	6.5	
t <sub>PHZ</sub> , t <sub>PLZ</sub>	Disable Time S or $\overline{\text{EN}}$ to Y or In	See Test Diagram	1.5	—	6	

Note:

1. See test circuit and waveforms.
2. This parameter is guaranteed but not tested on propagation delays.
3. The switch contributes no propagation 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 0.30ns for 10pF load. Because this time constant is much smaller than the rise/fall times of typical driving signals, it adds very little propagation delay to the system. Propagation delay of the 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.

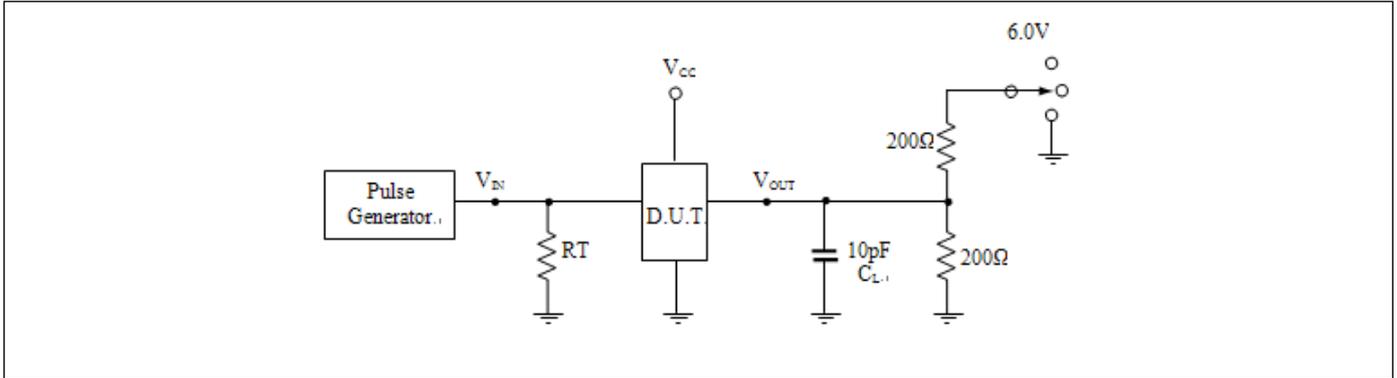
### Over 1.8V Operating Range

Symbol	Description	Test Conditions <sup>(1)</sup>	Min	Typ	Max	Unit
t <sub>PLH</sub> , t <sub>PHL</sub>	Propagation Delay <sup>(2, 3)</sup> Y to In, In to Y	See Test Diagram	—	—	0.3	ns
t <sub>PZH</sub> , t <sub>PZL</sub>	Enable Time S or $\overline{\text{EN}}$ to Y or In	See Test Diagram	1.5	—	20	
t <sub>PHZ</sub> , t <sub>PLZ</sub>	Disable Time S or $\overline{\text{EN}}$ to Y or In	See Test Diagram	1.5	—	12	

Notes:

1. See test circuit and waveforms.
2. This parameter is guaranteed but not tested on propagation delays.
3. The switch contributes no propagation 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 0.30ns for 10pF load. Because this time constant is much smaller than the rise/fall times of typical driving signals, it adds very little propagation delay to the system. Propagation delay of the 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.

**Test Circuit for Electrical Characteristics**



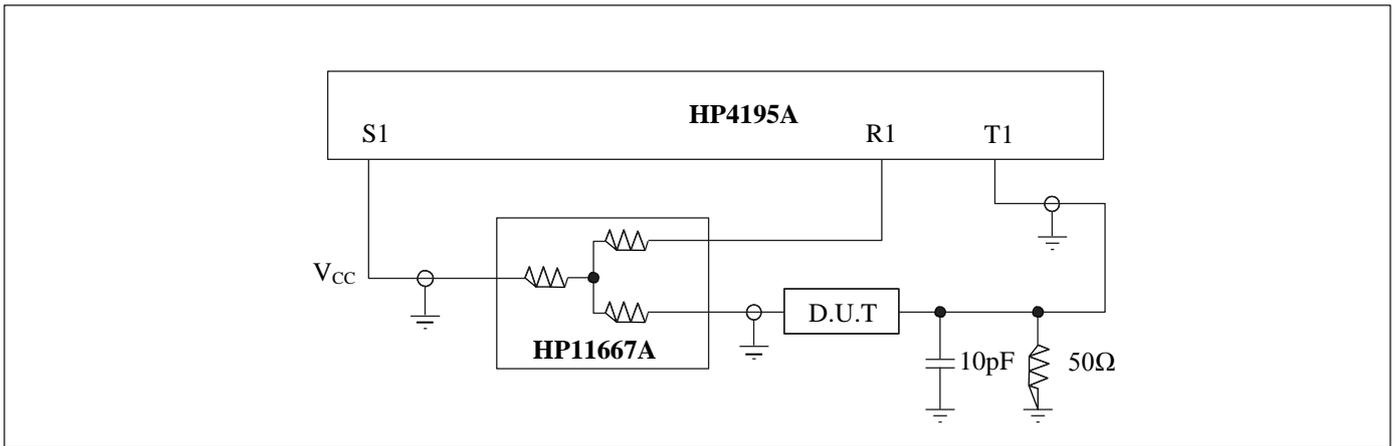
Notes:

1.  $C_L$  = Load capacitance: includes jig and probe capacitance.
2.  $R_T$  = Termination resistance: should be equal to  $Z_{OUT}$  of the pulse generator.
3. All input impulses are supplied by generators having the following characteristics:  $PRR \leq 10$  MHz,  $Z_O = 50\Omega$ ,  $t_R \leq 2.5$ ns,  $t_F \leq 2.5$ ns.
4. The outputs are measured one at a time with one transition per measurement.

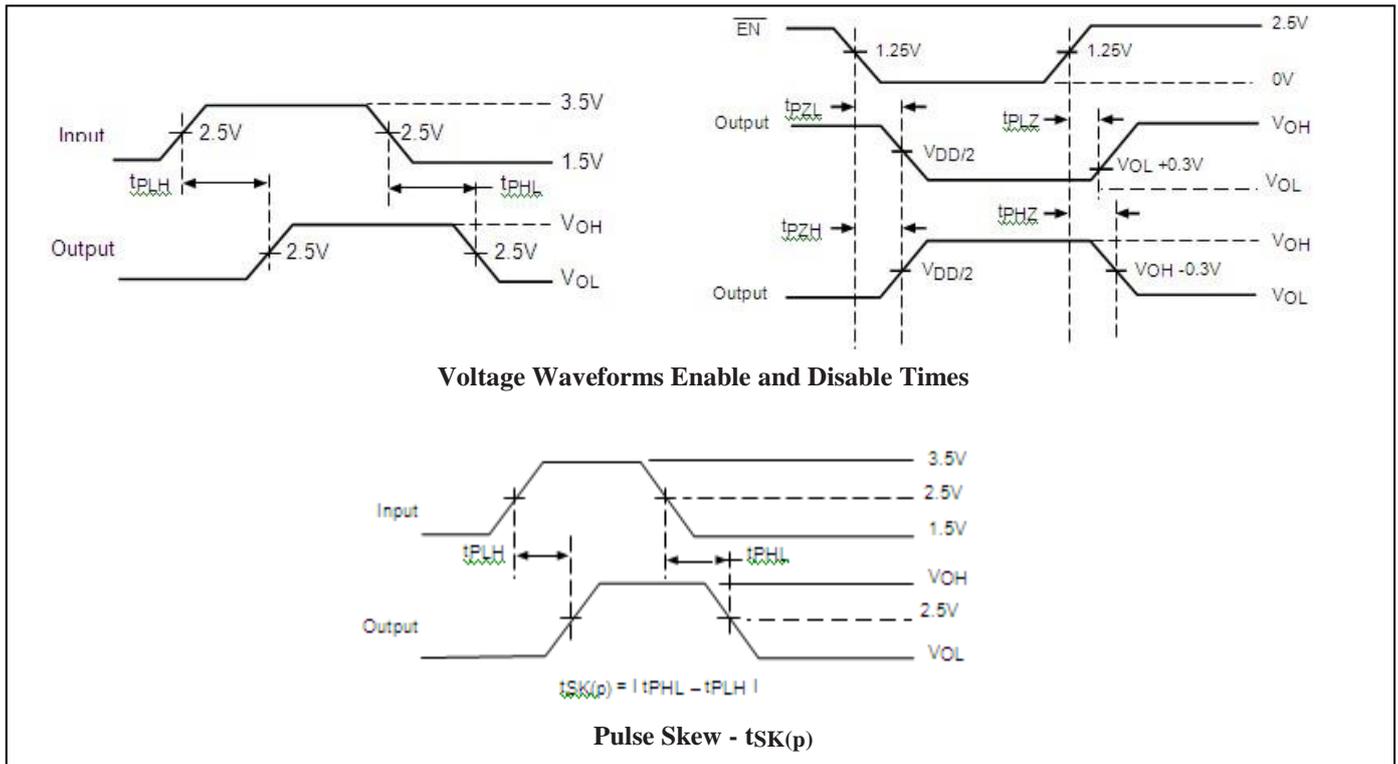
**Switch Positions**

Test	Switch
tPLZ, tPZL	6.0V
tPHZ, tPZH	GND
Prop Delay	Open

**Test Circuit for Dynamic Electrical Characteristics**



## Switching Waveforms



## Applications Information

### Logic Inputs

The logic control inputs can be driven up to 3.6V regardless of the supply voltage. For example given a +3.3V supply,  $\overline{EN}$  may be driven LOW to 0V and HIGH to 3.6V. Driving  $\overline{EN}$  Rail-to-Rail® minimizes power consumption.

### Hot Insertion

For Datacom and Telecom applications that have ten or more volts passing through the backplane, a high voltage from the power supply can be seen at the device input pins during hot insertion. The PI3CH360 devices have maximum limits of 6V and 120mA for 20ns. If the power is higher, applied for a longer time, or repeatedly reaches the maximum limits, the devices can be damaged.

## Part Marking

### L Package

PI3CH 3257LE YYWWXX
---------------------------

YY: Date Code (Year)  
WW: Date Code (Workweek)  
1st X: Assembly Site Code  
2nd X: Wafer Fab Site Code  
Bar above Fab Code means Cu wire

### Q Package

PI3CH 3257QE YWXX
-------------------------

Y: Date Code (Year)  
W: Date Code (Workweek)  
1st X: Assembly Site Code  
2nd X: Wafer Fab Site Code  
Bar above Fab Code means Cu wire

### ZTA Package

yB YW
----------

yB = PI3CH3257ZTAE  
Y: Date Code (Year)  
W: Date Code (Workweek)

**Mechanical Information**

**16-TSSOP (L)**

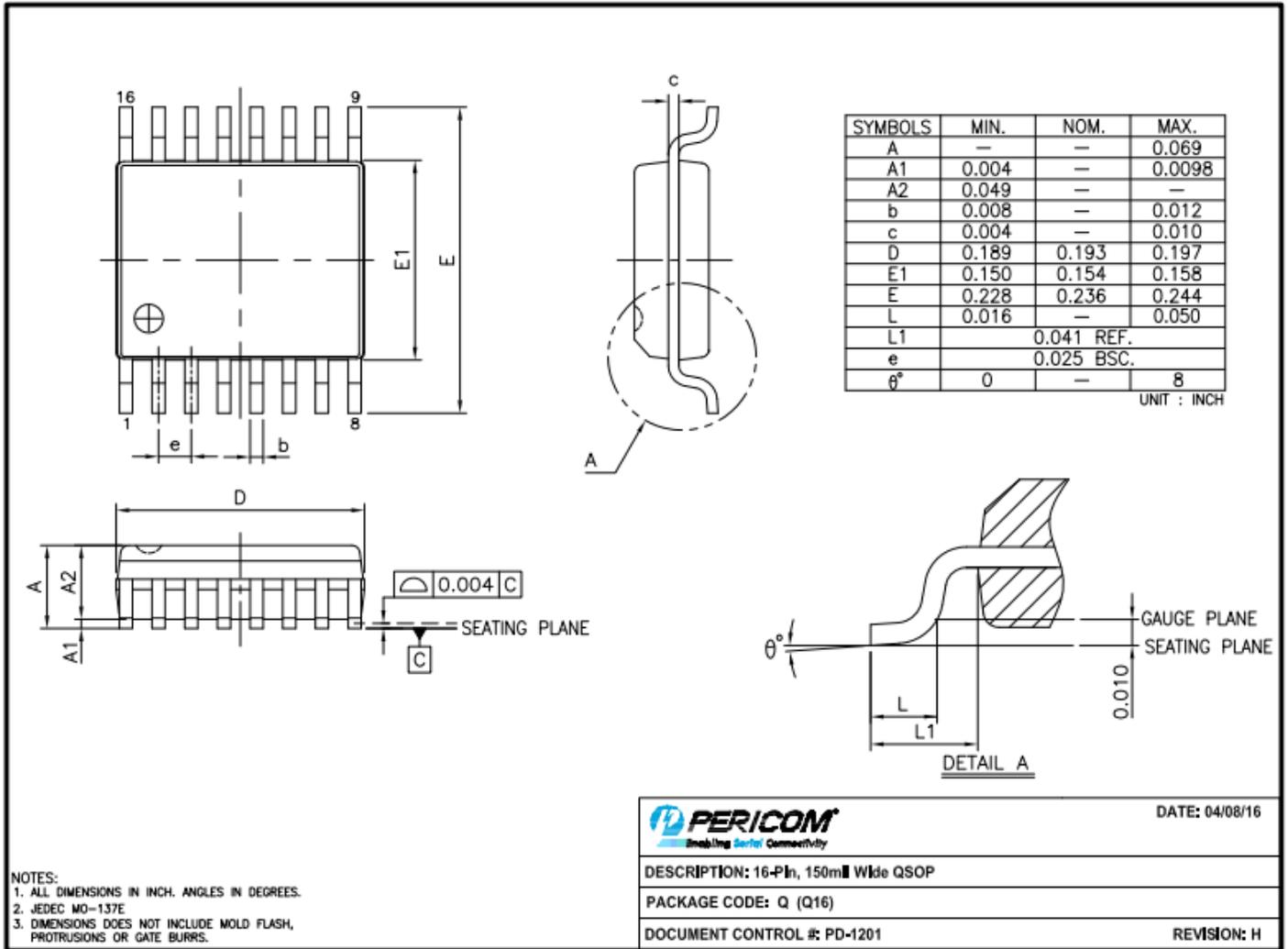
SYMBOLS	MIN.	NOM.	MAX.
A	-	-	1.20
A1	0.05	-	0.15
A2	0.80	1.00	1.05
b	0.19	-	0.30
c	0.09	-	0.20
D	4.90	5.00	5.10
E1	4.30	4.40	4.50
E	6.20	6.40	6.60
a	0.65 BSC		
L1	1.00 REF		
L	0.45	0.60	0.75
S	0.20	-	-
$\theta$	0°	-	8°

**NOTES:**  
 1. ALL DIMENSIONS IN MILLIMETERS. ANGLES IN DEGREES.  
 2. JEDEC MO-153F  
 3. DIMENSIONS DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

		DATE: 03/24/16
DESCRIPTION: 16-Pin, 173m Wide TSSOP		
PACKAGE CODE: L (L16)		
DOCUMENT CONTROL #: PD-1310	REVISION: G	

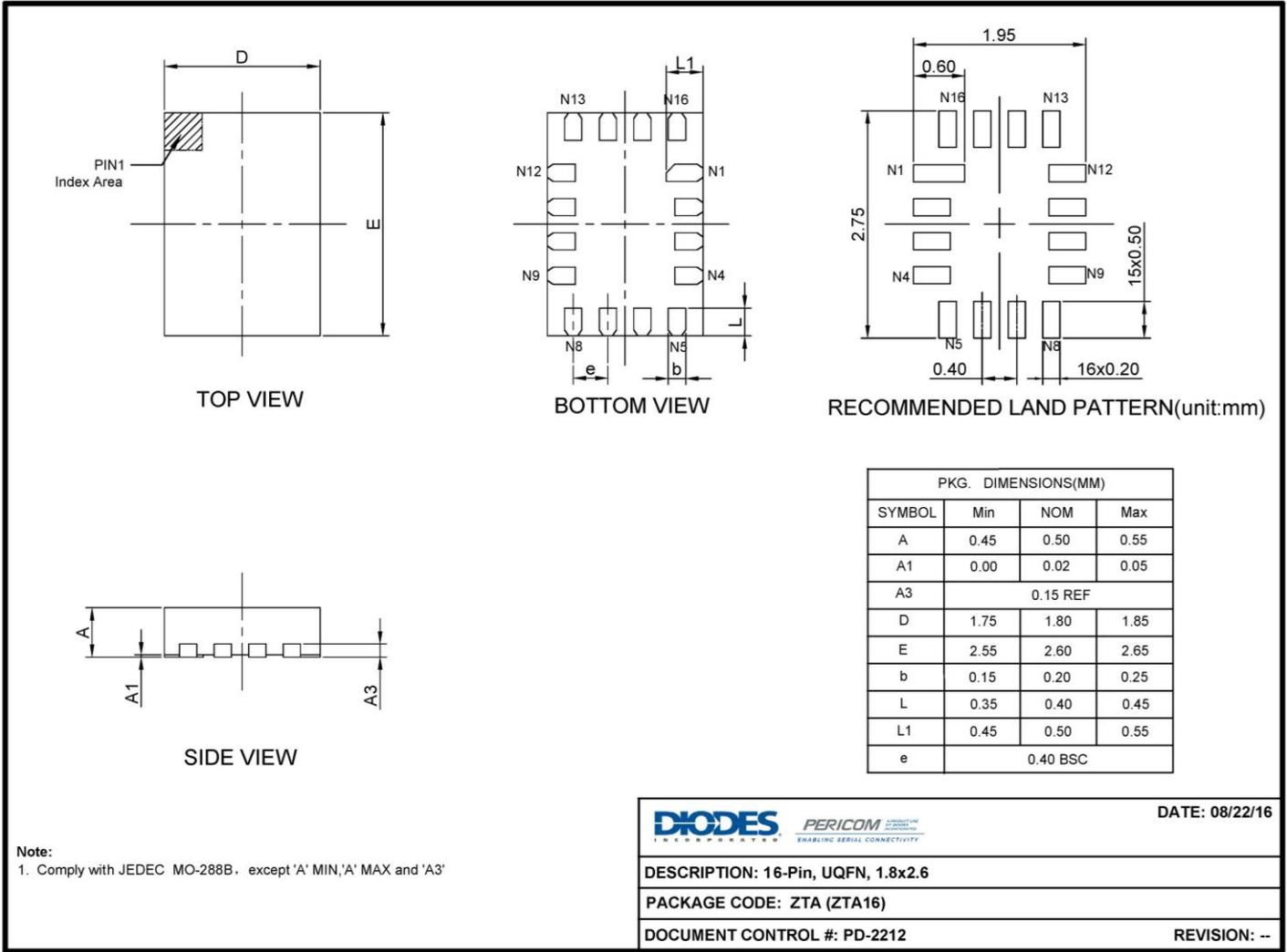
16-0061

16- QSOP (Q)



16-0058

**16-UQFN (ZTA)**



16-0164

**For latest package information:**

Please see <http://www.diodes.com/design/support/packaging/pericom-packaging/packaging-mechanicals-and-thermal-characteristics/>.

**Ordering Information**

Part Numbers	Package Code	Package Description	Pin 1 Orientation
PI3CH3257LEX	L	16-Pin, 173mil Wide (TSSOP)	Top Right Corner
PI3CH3257QEX	Q	16-Pin, 150mil Wide (QSOP)	Top Right Corner
PI3CH3257ZTAEX	ZTA	16-pin, 1.8x2.6mm (UQFN)	Top Right Corner
PI3CH3257ZTAEX-13R	ZTA	16-pin, 1.8x2.6mm (UQFN), 12mm width carrier tape	Top Left Corner

- Notes:
- No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
  - See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  - Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  - E = Pb-free and Green
  - X suffix = Tape/Reel
  - For packaging details, go to our website at: <https://www.diodes.com/assets/MediaList-Attachments/Diodes-Package-Information.pdf>

### IMPORTANT NOTICE

1. DIODES INCORPORATED (Diodes) AND ITS SUBSIDIARIES MAKE NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO ANY INFORMATION CONTAINED IN THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).
2. The Information contained herein is for informational purpose only and is provided only to illustrate the operation of Diodes' products described herein and application examples. Diodes does not assume any liability arising out of the application or use of this document or any product described herein. This document is intended for skilled and technically trained engineering customers and users who design with Diodes' products. Diodes' products may be used to facilitate safety-related applications; however, in all instances customers and users are responsible for (a) selecting the appropriate Diodes products for their applications, (b) evaluating the suitability of Diodes' products for their intended applications, (c) ensuring their applications, which incorporate Diodes' products, comply the applicable legal and regulatory requirements as well as safety and functional-safety related standards, and (d) ensuring they design with appropriate safeguards (including testing, validation, quality control techniques, redundancy, malfunction prevention, and appropriate treatment for aging degradation) to minimize the risks associated with their applications.
3. Diodes assumes no liability for any application-related information, support, assistance or feedback that may be provided by Diodes from time to time. Any customer or user of this document or products described herein will assume all risks and liabilities associated with such use, and will hold Diodes and all companies whose products are represented herein or on Diodes' websites, harmless against all damages and liabilities.
4. Products described herein may be covered by one or more United States, international or foreign patents and pending patent applications. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks and trademark applications. Diodes does not convey any license under any of its intellectual property rights or the rights of any third parties (including third parties whose products and services may be described in this document or on Diodes' website) under this document.
5. Diodes' products are provided subject to Diodes' Standard Terms and Conditions of Sale (<https://www.diodes.com/about/company/terms-and-conditions/terms-and-conditions-of-sales/>) or other applicable terms. This document does not alter or expand the applicable warranties provided by Diodes. Diodes does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel.
6. Diodes' products and technology may not be used for or incorporated into any products or systems whose manufacture, use or sale is prohibited under any applicable laws and regulations. Should customers or users use Diodes' products in contravention of any applicable laws or regulations, or for any unintended or unauthorized application, customers and users will (a) be solely responsible for any damages, losses or penalties arising in connection therewith or as a result thereof, and (b) indemnify and hold Diodes and its representatives and agents harmless against any and all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim relating to any noncompliance with the applicable laws and regulations, as well as any unintended or unauthorized application.
7. While efforts have been made to ensure the information contained in this document is accurate, complete and current, it may contain technical inaccuracies, omissions and typographical errors. Diodes does not warrant that information contained in this document is error-free and Diodes is under no obligation to update or otherwise correct this information. Notwithstanding the foregoing, Diodes reserves the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. This document is written in English but may be translated into multiple languages for reference. Only the English version of this document is the final and determinative format released by Diodes.
8. Any unauthorized copying, modification, distribution, transmission, display or other use of this document (or any portion hereof) is prohibited. Diodes assumes no responsibility for any losses incurred by the customers or users or any third parties arising from any such unauthorized use.
9. This Notice may be periodically updated with the most recent version available at <https://www.diodes.com/about/company/terms-and-conditions/important-notice>

The Diodes logo is a registered trademark of Diodes Incorporated in the United States and other countries.

All other trademarks are the property of their respective owners.

© 2023 Diodes Incorporated. All Rights Reserved.

[www.diodes.com](http://www.diodes.com)