

PI5C3303

SOTiny™ 2:1 Mux/DeMux Bus Switch

Features

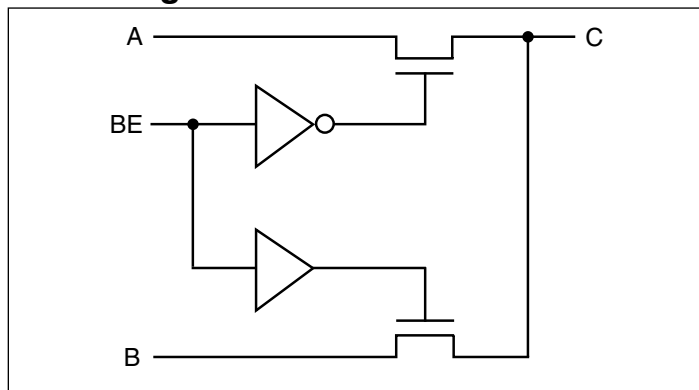
- Near-Zero propagation delay
- 5Ω switches connect inputs to outputs
- Direct bus connection when switches are ON
- Ultra Low Quiescent Power (0.1µA typical)
 - Ideally suited for notebook applications
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. “Green” Device (Note 3)
- Packaging (Pb-free & Green available):
 - 6-pin plastic SOT23 (T)

Description

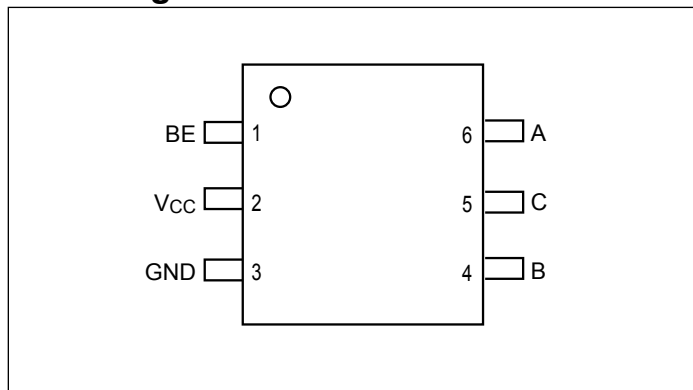
PI5C3303 is a single 2:1 Mux/DeMux digital switch designed with a fast enable. When enabled using the Bus Enable (BE) pin, the “A” or “B” pin is directly connected to the “C” pin. The bus switch introduces no additional propagation delay or additional ground bounce noise.

The PI5C3303 device has an active HIGH enable.

Block Diagram



Pin Configuration



Truth Table^(1, 2)

BE	A	B	C	Function
L	C	X	A	Connect A & C
H	X	C	B	Connect B & C

Notes:

1. H = High Voltage Level
L = Low Voltage Level
X = Don't Care
2. A = I/O at pin 6
B = I/O at pin 4
C = I/O at pin 5

Pin Description

Pin Name	Description
BE	Switch Enable
A	Bus A at pin 6
B	Bus B at pin 4
C	Bus C at pin 5
VCC	Power
GND	Ground

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.

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.....	-0.5V to +7.0V
DC Input Voltage	-0.5V to +7.0V
DC Output Current.....	120mA
Power Dissipation	0.5W

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 the Operating Range, T_A = -40°C to +85°C, V_{CC} = 5V ± 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 _{OZ}	High Impedence Output Current	V _{CC} = Max., V _{OUT} = 0V or V _{CC}			±1	
R _{ON}	Switch On-Resistance ⁽³⁾	V _{CC} = 4V, V _{IN} = 2.4V, I _{ON} = -15mA		10	20	Ω
		V _{CC} = 4.5V, V _{IN} = 0V, I _{ON} = 30mA or 64mA		4	7	
		V _{CC} = 4.5V, V _{IN} = 2.4V, I _{ON} = -15mA		7	15	

Notes:

- For Max. or Min. conditions, use appropriate value specified under Electrical Characteristics for the applicable device type.
- Typical values are at V_{CC} = 5.0V, T_A = 25°C ambient and maximum loading.
- 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.

Capacitance (T_A = 25°C, f = 1 MHz)

Parameters ⁽¹⁾	Description	Test Conditions	Typ. ⁽⁴⁾	Units
C _{IN}	Input Capacitance	V _{IN} = 0V	3	pF
C _{OFF}	A/B Capacitance, Switch Off		5	
C _{ON}	A/B Capacitance, Switch On		12	

Notes:

- 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
I _{CC}	Quiescent Power Supply Current	V _{CC} = Max.	V _{IN} = GND or V _{CC}		0.1	3.0	μA
ΔI _{CC}	Supply Current per Input @ TTL HIGH	V _{CC} = Max.	V _{IN} = 3.4V ⁽³⁾			2.5	mA

Notes:

1. For Max. or Min. conditions, use appropriate value specified under Electrical Characteristics for the applicable device.
2. Typical values are at V_{CC} = 5.0V, +25°C ambient.
3. Per TTL driven input (V_{IN} = 3.4V, control inputs only); A and B pins do not contribute to I_{CC}.

Switching Characteristics over Operating Range

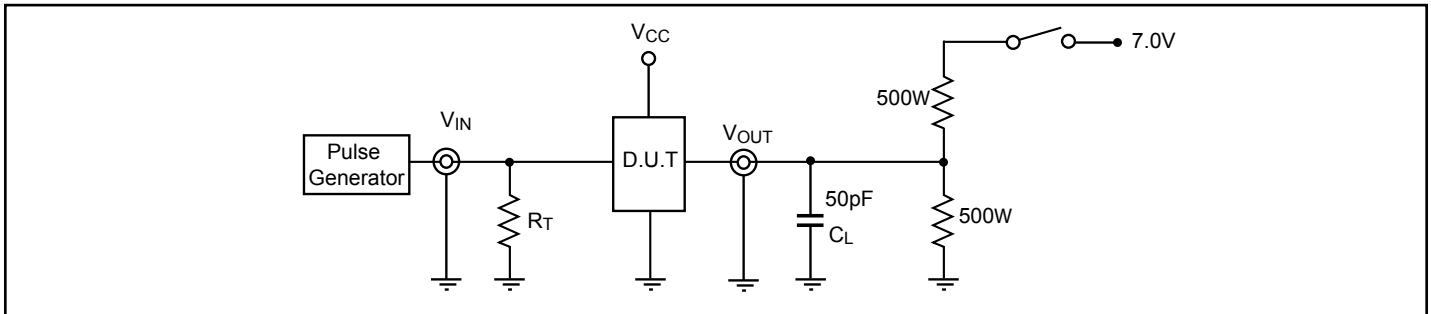
Parameters	Description	Test Conditions ⁽³⁾	V _{CC} = 4.5V		V _{CC} = 4V		Units
			Min.	Max.	Min.	Max.	
t _{PLH} t _{PHL}	Propagation Delay ^(1, 2) A to B, B to A	C _L = 50pF R _L = 500Ω		0.25		0.25	ns
t _{PZH} t _{PZL}	Bus Enable Time		1.0	4.9		5.5	
t _{PHZ} t _{PLZ}	Bus Disable Time		1.0	4.2		4.5	

Notes:

1. This parameter is guaranteed but not tested on Propagation Delays.
2. 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 his 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.
3. See test circuit and waveforms.

PI5C3303

Test Circuit



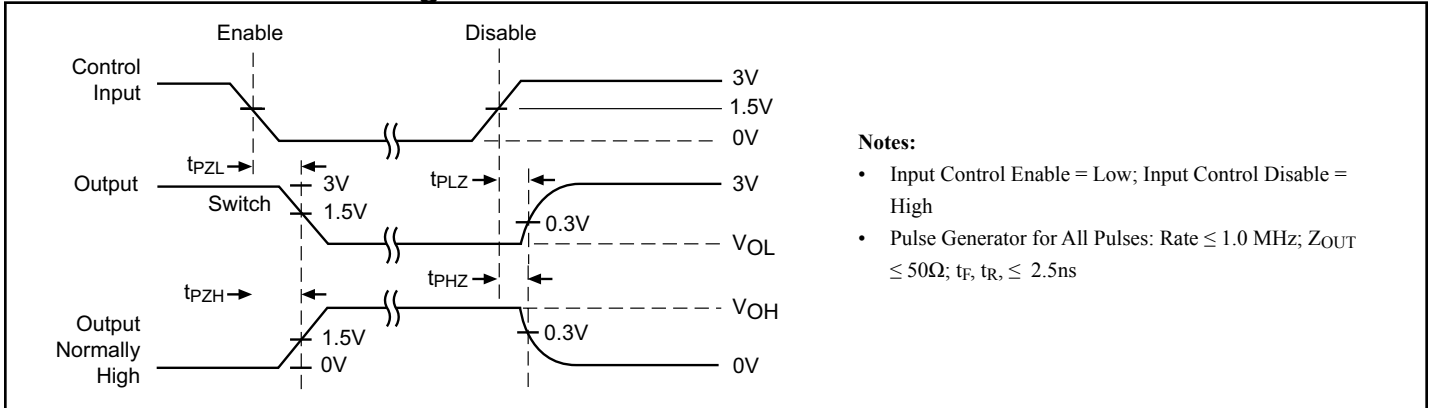
Switch Positions⁽¹⁾

Test	Switch
Open Drain Disable LOW Enable LOW	7V
All Other Inputs	Open

Notes:

1. C_L = Load Capacitance: includes jig and probe capacitance.
 R_T = Termination Resistance: should be equal to the Z_{OUT} of the Pulse Generator.

Enable and Disable Timing



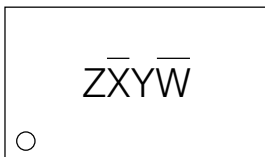
Notes:

- Input Control Enable = Low; Input Control Disable = High
- Pulse Generator for All Pulses: Rate \leq 1.0 MHz; $Z_{OUT} \leq 50\Omega$; $t_f, t_r \leq 2.5ns$

Part Marking

ZX Package - Cu

ZX = PI5C3303TE



Y: Year

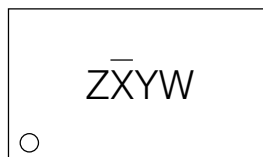
W: Workweek

Bar above X means Fab3 of MGN

Bar above W means Cu wire

ZX Package

ZX = PI5C3303TE



Y: Year

W: Workweek

Bar above X means Fab3 of MGN

PI5C3303

Packaging Mechanical:

6-SOT23 (T)

SYMBOLS	MIN.	NOM.	MAX.
A	—	—	1.45
A1	0.00	—	0.15
A2	0.90	1.15	1.30
b	0.35	—	0.50
c	0.08	—	0.22
D	2.75	2.90	3.05
E	2.60	2.80	3.00
E1	1.45	1.60	1.75
L	0.30	0.45	0.60
L1	0.60 REF		
R	0.10	—	—
R1	0.10	—	0.25
θ	0°	4°	8°
e	0.95 BSC		
e1	1.90 BSC		

NOTE :
 1. ALL DIMENSIONS IN MILLIMETERS. ANGLES IN DEGREES.
 2. DIMENSIONS EXCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
 3. REFER EIAJ SC74A AND JEDEC MO-178C.

PERICOM
Enabling Serial Connectivity

DATE: 03/30/16

DESCRIPTION: 6-Pin, Small Outline Transistor Plastic Package (SOT23)
 PACKAGE CODE: T (T6)
 DOCUMENT CONTROL #: PD-1912 REVISION: D

16-0064

For latest package info.

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

Ordering Information

Ordering Code	Package Code	Package Description
PI5C3303TEX	T	6-Pin, Small Outline Transistor Plastic Package (SOT23)

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.
4. E = Pb-free and Green
5. X suffix = Tape/Reel

IMPORTANT NOTICE

DIODES INCORPORATED MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. Diodes Incorporated does not assume any liability arising out of the application or use of this document or any product described herein; neither does Diodes Incorporated convey any license under its patent or trademark rights, nor the rights of others. Any Customer or user of this document or products described herein in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on Diodes Incorporated website, harmless against all damages.

Diodes Incorporated does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel.

Should Customers purchase or use Diodes Incorporated products for any unintended or unauthorized application, Customers shall indemnify and hold Diodes Incorporated and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.

Products described herein may be covered by one or more United States, international or foreign patents pending. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks.

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 definitive format released by Diodes Incorporated.

LIFE SUPPORT

Diodes Incorporated products are specifically not authorized for use as critical components in life support devices or systems without the express written approval of the Chief Executive Officer of Diodes Incorporated. As used herein:

A. Life support devices or systems are devices or systems which:

1. are intended to implant into the body, or
 2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.
- B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.

Customers represent that they have all necessary expertise in the safety and regulatory ramifications of their life support devices or systems, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of Diodes Incorporated products in such safety-critical, life support devices or systems, notwithstanding any devices- or systems-related information or support that may be provided by Diodes Incorporated. Further, Customers must fully indemnify Diodes Incorporated and its representatives against any damages arising out of the use of Diodes Incorporated products in such safety-critical, life support devices or systems.

Copyright © 2016, Diodes Incorporated
www.diodes.com

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)
Email: org@lifeelectronics.ru