

PI2SSD3212A1

1.8V, 14 Bit 2:1 eMMC/DDR Signal Switch

Description

This 14-bit signal switch is designed for eMMC HS200 and HS400 bus with speed up to 400MB/s, 1.8V or 1.2V I/Os. HS200 is the high Speed interface timing mode of up to 200MB/s at 200MHz Single Data Rate Bus and HS400 up to 400MB/s at 200MHz Dual Data Rate Bus.

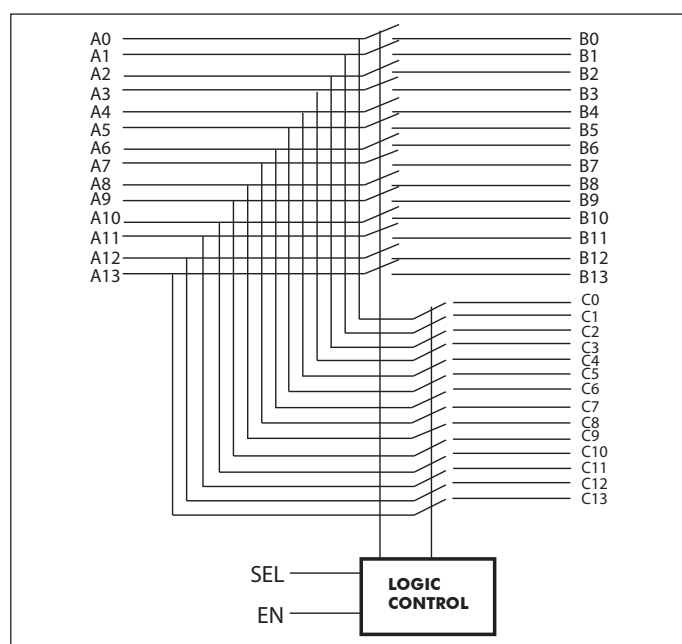
In addition, it supports POD_12, SSTL_135, SSTL_15 or SSTL_18 signaling and CMOS select input signals. It can be used for DDR2, DDR3 or DDR4 memory bus switch with speed up to 5Gbps. It supports DDR3 800~2133Mbps, DDR4 1600~4266Mbps.

The PI2SSD3212A1 has a 1:2 demux or 2:1 mux topology. All 14-bit channels can be switched to one of the two ports simultaneously with the SEL input. This device also allows all ports to be disconnected.

The PI2SSD3212A1 uses Diodes' proprietary high speed switch technology providing consistent high bandwidth across all channels, with very little insertion loss, cross-talk, and bit to bit skew.

It is available in a 48-pin TFBGA 4.5x4.5x0.8mm package.

Block Diagram



Features

- 14 Bit 2:1 Switch that Supports eMMC HS200 and HS400 Up to 400MB/s and DDR3 800~2133Mbps, DDR4 1600~4266Mbps
- Single Power Supply: 1.8V
- SEL and Global Enable
- 150µA Typical Operating Current at 1.8V VDD
- High Impedance and Low Coff Channel Output when Disabled or Deselected
- Low R_{ON} : 4Ω Typical
- -3dB Bandwidth: 2.8GHz
- Low Insertion Loss: -0.35dB @ 400MHz
- Low Return Loss: -23dB @ 400MHz
- Low Cross-talk for High Speed Channels: -26dB @ 400MHz
- High Off-Isolation: -28dB @ 400MHz
- Low Bit-to-Bit Skew: 10ps Typical
- ESD: 2KV HBM
- Packaging (Pb-free and Green)
 - 48-Pin, 4.5 x 4.5 x 0.8mm, TFBGA (NC)
- 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](https://www.diodes.com/quality/product-definitions/) or your local Diodes representative.

Application(s)

- High Speed Multiplexing
- eMMC Modules
- DDR3/DDR4 Memory Bus Systems

Ordering Information

Orderable Part Number	Package Code	Package Description
PI2SSD3212A1NCEX	NC	48-Pin, Thin Fine Pitch Ball Grid Array (TFBGA)

Notes:

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

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.