

**PI3WVR13412**

**DisplayPort 1.3/1.4, HDMI 2.0 Video Switch**

**Description**

The PI3WVR13412 is a multi-standard video switch with wide voltage range capability. It supports DisplayPort 1.3/1.4, HDMI 2.0, and emerging and proprietary standard.

The PI3WVR13412 can pass high-speed signals up to 1.2V peak-to-peak differential with a common-mode voltage from 0 to 3.4V for TMDS signal.

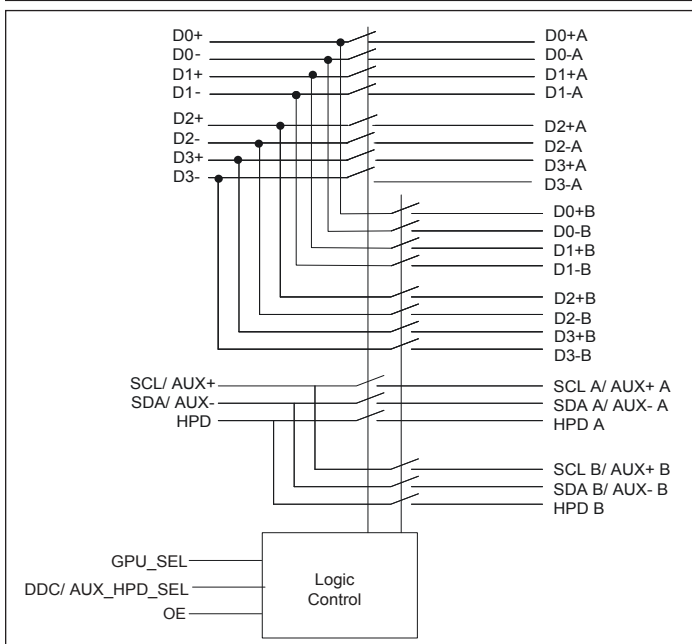
The wide voltage range allows DC-coupled multi-standard operation. Eliminating AC coupling capacitors saves board space and improves signal integrity for dense PCB design.

In addition to four high-speed lanes, PI3WVR13412 also switches the DDC and HPD signals or AUX and HPD signals using the DDC/AUX and HPD channel mux/demux.

**Application(s)**

- Routing of DisplayPort Video Signals with Low-Signal Attenuation Between Source and Sink for PC and Monitor
- Routing of HDMI 2.0 Video Signals with Low-Signal Attenuation Between Source and Sink for 4K2K Ultra-High Definition Video Display and Broadcast Video Equipment

**Block Diagram**



**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.

**Features**

- DisplayPort 1.3/1.4, HDMI 2.0 Electrical Standard Compatible
- 4-lane, 1:2 and 2:1 Switches that Support RBR, HBR1, HBR2, and HBR3
- Data Rate: 8.1Gbps for High-Speed Channels
- Supports DDC with HPD Channel Mux/Demux at HDMI
- Supports 720Mbps High-Speed DP AUX at DP
- -1.6dB Insertion Loss for High-Speed Channels at 4.05GHz
- -3dB Bandwidth for High-Speed Channels: 7GHz
- Return loss for High-Speed Channels at 4.05GHz: -11dB
- Low Crosstalk for High-Speed Channels: -35dB at 4.05GHz
- Low Off Isolation for High-Speed Channels: -20dB at 4.05GHz
- Low Channel-to-Channel Skew, 35ps max
- Low Bit-to-Bit Skew, 5ps typical (between '+' and '-' bits)
- V<sub>DD</sub> Operating Range: 3.3V ±10%
- ESD Tolerance: 1.5kV HBM
- 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):
  - 42-pin, TQFN (ZH)

**Ordering Information**

Orderable Part Number	Package Code	Package Description
PI3WVR13412ZHEX	ZH	42-contact, Very Thin Quad Flat No-Lead (TQFN)

**Notes:**

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