

**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.

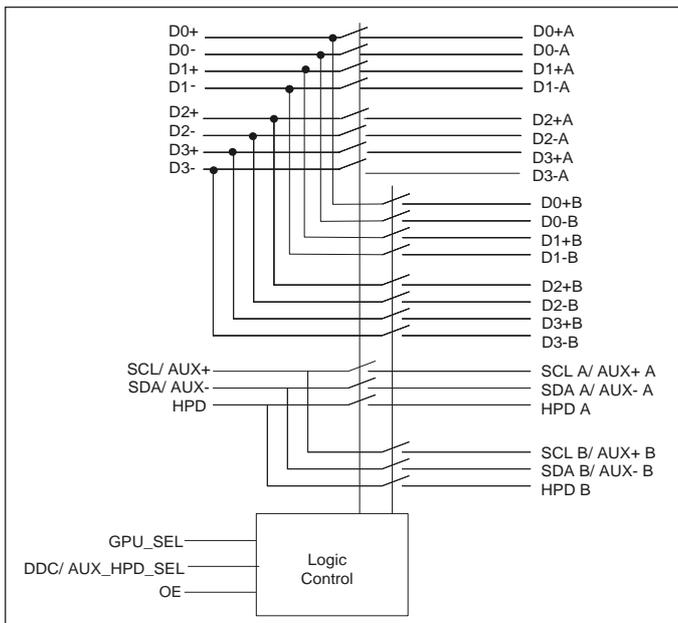
The PI3WVR13412 can pass high-speed signals up to 1.2V peak-to-peak differential with a common-mode voltage from 0 to 3.4V for TMD5 signal.

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**



**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%
  - Packaging (Pb-free & Green):
    - 42-pin, 3.5mm x 9mm, TQFN (ZH)
  - 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.
- <https://www.diodes.com/quality/product-definitions/>

**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

**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.