

20Gbps 1:2 Signal Switch For DP2.1, HDMI2.1, MIPI DPHY/CPHY, USB3.2

Description

The DIODES PI3WVR14412Q is a multi-standard video switch with wide voltage range capability. It supports DisplayPort 1.3/1.4/2.1, HDMI 1.4/2.0/2.1, MIPI DPHY/CPHY, USB3.2, and emerging and proprietary standards.

The PI3WVR14412Q can pass high-speed signals up to 1.2V peak-to-peak differential, with a common-mode voltage from 0 to VDD 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, the PI3WVR14412Q also switches the DDC and HPD signals or AUX and HPD signals using the DDC/ AUX and HPD channel switch.

Application(s)

- Advanced Driver Assistance Systems (ADAS)
- Automotive Infotainment & Cluster
- Rear Seat Entertainment
- Automotive Head Units
- Aerospace & Defense

Features

- Supports DP2.1, HDMI2.1, MIPI DPHY/CPHY, USB3.2, LVDS Electrical Standard Compatible
- Data Rate Up to 20Gbps for 4-Lanes of High-Speed Channel
- Supports DDC and HPD Switch @ HDMI
- Supports Up to 720Mbps AUX Channel @ DP
- Insertion Loss: -2.0dB @10GHz
- Return Loss: -10dB @10GHz
- Low Channel-to-Channel Crosstalk: -30dB @10GHz
- Low Off-Isolation: -15dB @10GHz
- Low Bit-to-Bit Skew: 5ps @Typical
- Power Supply: 3.3V
- Supports AEC-Q100 Grade 2, -40°C to 105°C
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- The PI3WVR14412Q is suitable for automotive applications requiring specific change control; this part is AEC-Q100 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.
<https://www.diodes.com/quality/product-definitions/>
- Packaging (Pb-free & Green):
 - 40-Pin, TQFN (ZLC), 0.4mm pitch

Ordering Information

Ordering Code	Package Code	Package Description
PI3WVR14412Q2ZLCEX	ZLC	40-contact, 3 x 6mm (TQFN)

Notes:

- Q = Automotive Compliant
- 2 = AEC-Q100 Grade Level
- 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.
4. Automotive products are AEC-Q100 qualified and are PPAP capable. Refer to <https://www.diodes.com/quality/>.