

# PI3DPX1207Q

## DP-Alt DP1.4/USB3.1 10Gbps Linear Redriver with Integrated AUX Switch and AUX Listener

### Features

- 4-to-4 linear redriver channel configuration
  - Type-C DP/USB mode selection: DP only, USB only, DP/USB or USB3.2 modes
  - Latency-free USB Read/Write Transfer rate and DisplayPort Redriver Link Training for variable video frame rate control
  - DP1.4 (8.1 Gbps) and USB3.1 Gen 2 (10 Gbps) standard compliant
  - Natively supports Transparent DisplayPort Link training with Non-blocking No-latency Linear ReDriver
  - Independently controlled EQ/Gain/Swing signal outputs for DisplayPort and USB modes
  - Type-C Plug and Aux Flipping controls through I2C or pin control settings
  - Slave I2C support only. I2C speed up to 1MHz
  - Auto power saving operation for USB and DP
  - Single Power Supply: 3.3V
  - Supports AEC-Q 100 grade 3 (-40oC to +85oC)
  - Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
  - Halogen and Antimony Free. "Green" Device (Note 3)
  - The PI3DPX1207Q 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):
    - 42-Pin, TQFN (3.5mm x9mm)

### Description

PI3DPX1207Q is a USB Type-C DP-Alt mode linear redriver that supports the DP1.4 and USB3.2 spec. for data rates up to 10Gbps with AEC-Q100 grade 3 qualification. It can be configured through the I2C or pin control settings to operate in 4-channel Displayport mode, 1-port USB3.1 Gen2 and 2-channel Displayport mode, 1-port USB3.1 Gen2 mode or 2-port USB3.2 mode. The integrated AUX switch provides the flip function for the side band signal. The Displayport D3 power down function can be activated via the I2C setting or through the built-in AUX listener during pin control mode.

Each of the DP1.4 and USB3.1 Gen2 differential signals can be easily adjusted with equalization, output swing and gain values by the I2C control setting. It can optimize the DP/USB 10Gbps signal performance over a variety of physical mediums by reducing inter-symbol interference jitters.

Non-blocking Linear Redrivers provide better additive jitter performance. Linear Equalization does not block the Receiver DFE's adaptive channel controls, supporting DisplayPort Transparent LT (Link Training) without dependency of the DP-Aux channels listener.

### Applications

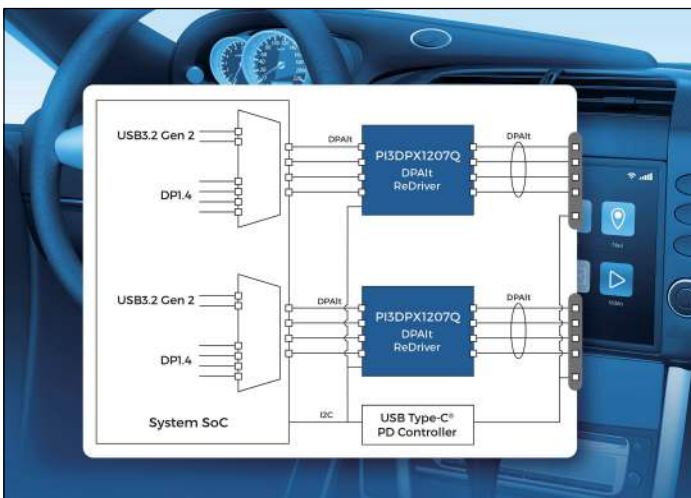
- Car Infotainment System

### Ordering Information

Part Number	Package	Description
PI3DPX1207Q3ZHEX	ZH	42-pin, Very Thin Quad Flat No-Lead (TQFN) (3.5x9mm)

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



**System with Type-C Connector**