10Gbps ReDriverBoosts Signal Quality of High-Speed USB Interfaces

The PI3EQX1004E and PI3EQX1002E are 2- and 1-port, respectively, linear ReDrivers compliant with USB 3.1 Gen 2 10Gbps. Both are backwards compatible with USB 3.1 Gen 1, 5Gbps.

The devices offer ultra-small and thin package types to reduce PCB size and total BOM cost.

They have adjustable linear equalization, output swing, and flat gain to optimize performance over a variety of physical media by reducing intersymbol interference.

With Diodes’ intelligent patented technology, these devices extend PCB trace lengths while minimizing cost and power consumption.

They operate from a supply voltage of 3.3V.

The PI3EQX1004E is available in the UQFN-34, and the PI3EQX1002E is available in the TQFN-24.

**DIODES Advantage**

- **10Gbps, 2-port and 1-port Linear ReDrivers**
  Supports USB 3.1 Gen 2 and backward compatible to USB 3.1 Gen 1.

- **Ultra Small and Thin Packages Reduce PCB Size and Cost**
  PI3EQX1004E: UQFN-34L, 2.5mm x 4.5mm x 0.6mm
  PI3EQX1002E: TQFN-24L, 2.5mm x 2.5mm x 0.75mm

- **Adjustable Linear Receiver Equalization, Output Swing, and Flat Gain**
  Compensates signal loss of PCB trace length with different settings.

**Applications**

- Laptop PC
- Tablet PC
- Desktop PC
- Gaming
- TV
- Workstation
- Server
- Embedded/Industrial PC
Announcement
New Product
Application Usage

February 2020

USB 3.1 Gen 2, 10Gbps ReDriver Portfolio

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Channels</th>
<th>Data Rate (Gbps)</th>
<th>Lanes/Ports</th>
<th>Output Swing Max (mV)</th>
<th>Programming Interface</th>
<th>Packages</th>
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</thead>
<tbody>
<tr>
<td>PI3EQX1002B1</td>
<td>USB 3.1 Gen 2 ReDriver</td>
<td>2</td>
<td>10</td>
<td>1/1</td>
<td>N/A</td>
<td>Pinstrap</td>
<td>TQFN (ZL30) 2.5mm x 4.5mm</td>
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<tr>
<td>PI3EQX1002E</td>
<td>USB 3.1 Gen 2 ReDriver, Ultra-small package type</td>
<td>2</td>
<td>10</td>
<td>1/1</td>
<td>1000</td>
<td>Pinstrap</td>
<td>TQFN (ZR24) 2.5mm x 2.5mm</td>
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<tr>
<td>PI3EQX1004B1</td>
<td>USB 3.1 Gen 2 ReDriver</td>
<td>4</td>
<td>10</td>
<td>2/2</td>
<td>1000</td>
<td>Pinstrap</td>
<td>TQFN (ZH42) 3.5mm x 9.0mm</td>
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<tr>
<td>PI3EQX1004E</td>
<td>USB 3.1 Gen 2 ReDriver, Ultra-small package type</td>
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<td>10</td>
<td>2/2</td>
<td>1000</td>
<td>Pinstrap</td>
<td>UQFN (ZTF34) 2.5mm x 4.5mm</td>
</tr>
</tbody>
</table>

Ordering Information

<table>
<thead>
<tr>
<th>Ordering Code</th>
<th>Packaging Code</th>
<th>Package Description</th>
<th>Quantity per Reel</th>
<th>Reel Size</th>
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</thead>
<tbody>
<tr>
<td>PI3EQX1004EZTFEX</td>
<td>ZTF34</td>
<td>34-contact UQFN (2.5mm x 4.5mm x 0.75mm)</td>
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<tr>
<td>PI3EQX1002EZREX</td>
<td>ZR24</td>
<td>24-contact TQFN (2.5mm x 2.5mm x 0.55mm)</td>
<td>3500</td>
<td>7”</td>
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</tbody>
</table>

To find out more information:
https://www.diodes.com/part/PI3EQX1004E
https://www.diodes.com/part/PI3EQX1002E