Product Overview

**Isolated USB Repeater**

---

**Example:** Provide High-Voltage Protection and Enhanced Signal Integrity for USB 2.0

**Design Considerations**

- How to Implement an Isolated USB 2.0 High Speed, Type-C® DRP
- Compensate for Channel Loss with Equalizer Settings on High-Speed USB Isolators
- Protect your Designs with Low-Emissions USB 2.0 Compliant 480 Mbps Isolators

**What do Isolated USB Repeaters Provide?**

- Compliance with the low-speed, full-speed, and high-speed USB 2.0 standard
- Built-in high-speed test mode that is required for end-equipment USB 2.0 compliance tests
- Built-in equalizer and pre-emphasis for channel loss compensation
- Support Charging Downstream Port (CDP) advertising, role-reversing, and auto speed detection
- Support sleep power management state
- Meets CISPR32 Class B radiated emissions

Need additional assistance? Ask our engineers a question on the TI E2ETM Isolation Support Forum

### Recommended Parts

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Isolated</th>
<th>USB2.0 Speed</th>
<th>Features</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISOUSB211DP</td>
<td>Reinforced</td>
<td>480Mbps</td>
<td>Equalizer and pre-emphasis, support HS test mode, auto speed detection, role-reversal, CPD advertising, and SSOP-28 package</td>
<td>Factory automation and control: Programmable logic controller, Industrial PC Motor drive: Servo motor drive, AC Inverter Medical: Patient monitor, CPAP machine Test and measurement: Semiconductor tester, Instrumentation</td>
</tr>
<tr>
<td>ISOUSB111DW</td>
<td>Reinforced</td>
<td>12Mbps</td>
<td>Auto speed detection, role-reversal, CPD advertising.</td>
<td></td>
</tr>
<tr>
<td>ISOUSB111DX</td>
<td>Reinforced</td>
<td>12Mbps</td>
<td>Auto speed detection, role-reversal, CPD advertising in ultra-small package.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ESD Device Name</th>
<th>Working Voltage</th>
<th>Clamping Voltage</th>
<th>Capacitance</th>
<th>IEC 61000-4-2 Rating</th>
<th>IEC 61000-4-5 Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESD341 (Data)</td>
<td>3.6 V</td>
<td>8.8 V</td>
<td>0.66 pF</td>
<td>30 kV</td>
<td>5.4 A</td>
</tr>
<tr>
<td>ESD441 (Power)</td>
<td>5.5 V</td>
<td>7.6 V</td>
<td>1.0 pF</td>
<td>30 kV</td>
<td>4.4 A</td>
</tr>
</tbody>
</table>

---

Copyright © 2023 Texas Instruments Incorporated
IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATA SHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES “AS IS” AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, regulatory or other requirements.

These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI’s products are provided subject to TI’s Terms of Sale or other applicable terms available either on ti.com or provided in conjunction with such TI products. TI’s provision of these resources does not expand or otherwise alter TI’s applicable warranties or warranty disclaimers for TI products.

TI objects to and rejects any additional or different terms you may have proposed.

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
Copyright © 2023, Texas Instruments Incorporated