This automotive-qualified device has a line capacitance of just 0.6 pF and offers excellent protection against ESD strikes and other transients for ultra high-speed car multimedia interfaces.

**Key features**
- AEC-Q101 compliant
- 4 protected lines
- Ultra-low line capacitance $C_d = 0.6 \text{ pF}$
- Up to 8 kV ESD robustness (IEC61000-4-2)
- Ultra-small package SOT1165 (XSON10) (2.5 x 1.0 x 0.5 mm)

**Key benefits**
- Integrated solution for protection of high-speed interfaces up to 3.2 Gbits per line
- Designed for use in automotive environments
- Maximum PCB design flexibility with easy routing and reduced board space

**Key applications**
- ESD protection for ultra high-speed interfaces (LVDS, HDMI, etc.)
- Central information display
- Driver instruments
- In-seat multimedia screens
- Front and rear cameras

Many graphical ICs for ultra high-speed interfaces offer only a minimal level of internal protection against transient voltages. As a result, an ESD strike on the IC interface can cause a malfunction or even destroy the IC. In order to meet the extremely high reliability standards of automotive environments, an additional external ESD protection on the interface is compulsory.

The PESD1LVDS is designed for protection against ESD strikes on high-speed data lines in automotive applications. It offers an optimal ESD protection up to 8 kV (IEC61000-4-2) for four ultra high-speed data lines and is qualified for use in automotive applications.
### PESD1LVDS electrical parameters

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_{rev}$</td>
<td>Reverse standoff voltage</td>
<td>-</td>
<td>-</td>
<td>5.5 V</td>
</tr>
<tr>
<td>$V_{ESD}$</td>
<td>ESD robustness IEC61000-4-2</td>
<td>-</td>
<td>-</td>
<td>8 kV</td>
</tr>
<tr>
<td>$V_{br}$</td>
<td>Breakdown voltage</td>
<td>6 V</td>
<td>-</td>
<td>9 V</td>
</tr>
<tr>
<td>$I_{FS}$</td>
<td>Maximum leakage current @ $V_T = 3$ V</td>
<td>-</td>
<td>-</td>
<td>1 μA</td>
</tr>
<tr>
<td>$V_f$</td>
<td>Forward voltage</td>
<td>-</td>
<td>0.7 V</td>
<td>-</td>
</tr>
<tr>
<td>$C_{Lax}$</td>
<td>Line capacitance @ $f = 1$ MHz, $V_{Lax} = 2.5$ V</td>
<td>-</td>
<td>0.6 pF</td>
<td>-</td>
</tr>
<tr>
<td>$\Delta C_{Lax}$</td>
<td>Line capacitance difference @ $f = 1$ MHz, $V_{Lax} = 2.5$ V</td>
<td>-</td>
<td>0.05 pF</td>
<td>-</td>
</tr>
</tbody>
</table>

### Eye diagram for HDMI

340 MHz pixel clock (3.4 Gb/s data rate)

![Eye diagram for HDMI](image)

### Mixed-mode differential and common-mode insertion loss (typ). Normalized to 100 Ω

![Mixed-mode insertion loss graph](image)

### Application diagram

![Application diagram](image)

### Pass-through routing

![Pass-through routing](image)