High-performance ESD protection for sensitive ICs

Specifically designed for ultra-low clamping voltages, ultra-low overshoot voltages, and ultra-low capacitance, these advanced devices provide the highest levels of protection against ESD strikes for highly ESD-sensitive ICs.

**Key features**
- Best-in-class overshoot voltage for an 8 kV ESD strike
- Ultra-low clamping voltage of 7.5 V @ 30 ns after an 8 kV ESD strike
- Ultra-low capacitance: 0.95 pF
- Innovative DFN1006D-2 (SOD882D) package with solderable, tin-plated side pads

**Key benefits**
- Highest level of protection against ESD strikes for highly sensitive ICs
- Ultra-small packages for compact PCB designs

**Applications**
- High-speed data interfaces in communication, consumer, and computing markets
- Protection for highly sensitive interface controller ICs

The ultra-small process technologies used to produce today’s miniature semiconductors have the side-effect of making the ICs more vulnerable to voltage transients caused by ESD strikes. NXP’s PESD5V0X1U family supports these highly sensitive ICs by providing high-performance ESD protection.
Clamping performance of the unidirectional PESD5V0X1ULD compared to other devices with comparable capacitance (positive 8 kV ESD pulse according to IEC61000-4-2)

Compared to other devices with similar electrical parameters, PESD5V0X1U diodes have the lowest overshoot and clamping voltages after 30 ns for an 8 kV ESD pulse, according to IEC61000-4-2. The combination of extremely low capacitance and ultra-low clamping voltage makes these devices ideal for high-speed dataline protection applications.

Ultra-low clamping ESD protection diodes family

<table>
<thead>
<tr>
<th>Device</th>
<th>Capacitance max.</th>
<th>Overshoot voltage at 8 kV ESD pulse</th>
<th>Clamping voltage at 30 ns 8 kV ESD pulse</th>
</tr>
</thead>
<tbody>
<tr>
<td>PESD5V0X1ULD</td>
<td>1.15 pF</td>
<td>53 V</td>
<td>7.5 V</td>
</tr>
<tr>
<td>Competitor 1</td>
<td>0.9 pF</td>
<td>130 V</td>
<td>13.1 V</td>
</tr>
<tr>
<td>Competitor 2</td>
<td>0.6 pF</td>
<td>93 V</td>
<td>17.1 V</td>
</tr>
<tr>
<td>Competitor 3</td>
<td>2.5 pF</td>
<td>117 V</td>
<td>12.6 V</td>
</tr>
</tbody>
</table>

Packages

DFN1006D-2 (SOD882D)

SOD523 (SC-79)