

INTERFACE APP NOTE
USB 3.1 Protection

DFN-10 PACKAGE
OBJECTIVE

Universal Serial Bus (USB) 3.1 ports at 10 Gbps are twice as fast as USB 3.0 ports, enhancing consumer applications requiring low latency and high bandwidth. The USB 3.1, Section 6.1 standard recommends that power and signal lines receive ESD protection.

BENEFIT

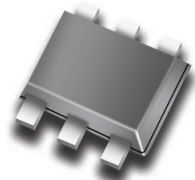
This integrated TVS diode solution is designed to protect the interface against surge events by using one device (PLR0514LC) to protect 4 lines of high-speed data, 1 device (PLR0502-6) to protect D+ and D- datalines and 1 device (PSD05) to protect the V_{CC} Bus.

COMPLIANCE

- IEC 61000-4-2 ±8kV Contact, ±15kV Air Discharge
- IEC 61000-4-4 EFT 40A, 5/50ns
- IEC 61000-4-5 Surge Secondary Lightning, 4A @ 8/20μs

SOLUTION

- 1 x PLR0514LC in DFN-10 Package
 - Stand-Off Voltage V_{WM} : 5.0 Volts
 - Breakdown Voltage $B_{V_{MIN}}$: 6.0 Volts
 - $V_C @ I_P$: 12V @ 1A
 - Leakage Current I_R : 1.0μA
 - Typ. Capacitance: 0.48pF IO to GND
- 1 x PLR0502-6 in SC-89 Package
 - Stand-Off Voltage V_{WM} : 5.0 Volts
 - Breakdown Voltage $B_{V_{MIN}}$: 6.0 Volts
 - $V_C @ I_P$: 17V @ 3A
 - Leakage Current I_R : 1.0μA
 - Max. Capacitance: 0.7pF IO to IO
- 1 x PSD05 in SOD-323 Package (V_{CC} Bus)


SC-89 PACKAGE
ALTERNATE RECOMMENDATIONS

- 1 x SRV05-4LC


SOD-323 PACKAGE
