

FAST ESD RESPONSE

**Extremely Low Dynamic
Resistance and Most
Suitable for DC Powered
Interfaces**

Best-in-Class
Clamping with
Surge-Tolerant
Unidirectional
ESD Protection

High surge protection and fast ESD performance in an industry-standard package (1610) with extremely low dynamic resistance provides the most appropriate solution for DC interfaces

Protects Vbus lines on fast-charging interfaces like USB 2.0 and Type C USB 3.1



1.6x1.0mm
DFN

Typical End Products Application:

- USB Interfaces
- Test Equipment / Instrumentation
- Point-of-Sale Terminals
- Medical Equipment
- Notebooks / Desktops / Servers
- Computer Peripherals
- Automotive Electronics



Samples



Datasheet

High surge tolerance and extremely low dynamic resistance in a small 1.6x1.0mm DFN package ensures better protection during extreme surge or ESD events

Features

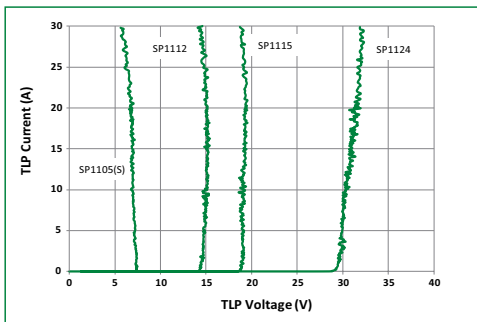
- Extremely low dynamic resistance (R_{DYN})
- Unidirectional design offers the best R_{DYN}
- Flat surge performance across current profiles
- High surge tolerance in the case of 5V@80A (8/20 μ s) waveform
- 5V, 12V, 15V and 24V options directly address PoweredUSB profiles
- Industry-standard 1610 package available in standard and low profiles

Benefits

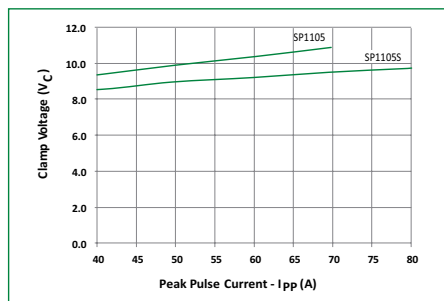
- Faster ESD response time, which translates into better ESD performance
- Most appropriate solution for DC powered interfaces
- Better protection during extreme surge or ESD events
- Multiple solutions available within a single footprint

Very low dynamic resistance and very good clamping performance translates into better ESD performance.

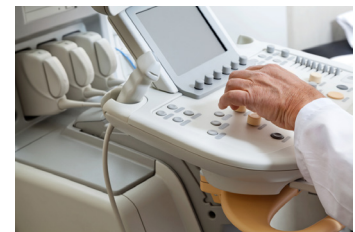
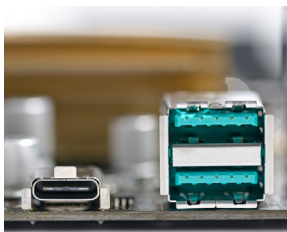
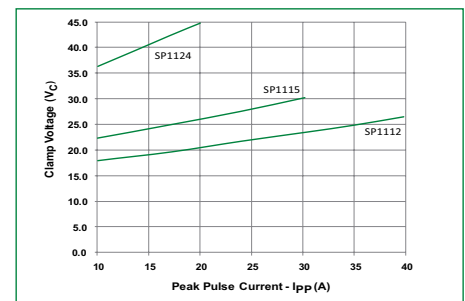
SP11xx Transmission Line Pulsing (TLP) Plot



SP1105, SP1105S Clamping voltage vs. I_{pp} for 8/20 μ s waveshape



SP1112, SP1115, SP1124 Clamping voltage vs. I_{pp} for 8/20 μ s waveshape



Part Number	Reverse Standoff Voltage	Clamping Voltage @ 1A	Dynamic Resistance	Peak Pulse Current (8/20 μ s)	ESD (contact)
SP1105-01UTG	5V	7.3V (typ)	0.05 Ω (typ)	70A (max)	\pm 30kV
SP1105S-01UTG	5V	8.3V@40A (typ)	0.05 Ω (typ)	80A (max)	\pm 30kV
SP1112-01UTG	12V	15.2V (typ)	0.05 Ω (typ)	40A (max)	\pm 30kV
SP1115-01UTG	15V	19.3V (typ)	0.05 Ω (typ)	30A (max)	\pm 30kV
SP1124-01UTG	24V	29.8V (typ)	0.10 Ω (typ)	20A (max)	\pm 30kV