

**Features**

- 350W peak pulse power (8/20µs)
- Ultra low capacitance: 1pF typical
- Ultra low leakage: nA level
- Low operating voltage: 15V
- Low clamping voltage
- Protects one power line or data line
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge: ±30kV  
Contact discharge: ±30kV
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 10A (8/20µs)
- RoHS Compliant

**Mechanical Characteristics**

- Package: SOD-323
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram

**Applications**

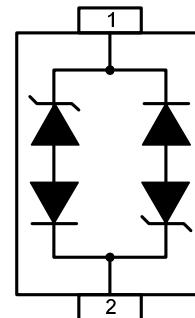
- USB Ports
- Smart Phones
- Wireless Systems
- Ethernet 10/100/1000 Base T

**Description**

The ESD1510LG is a 15V bi-directional TVS diode,utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines.The ESD1510LG has a low capacitance with a typical value at 1pF, and complies with the IEC 61000-4-2 (ESD) standard with ±15kV air and ±8kV contact discharge. It is assembled into a lead-free SOD-323 package. The small size, low capacitance and high ESD surge protection make ESD1510LG an ideal choiceto protect cell phone, wireless systems, and communication equipment.



**Dimensions and Pin Configuration**



Circuit and Pin Schematic

**Part Number Code**

<b>E</b>	<b>S</b>	<b>D</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>L</b>	<b>1</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>

Product Type	
ESD	TSK Electrostatic suppressor ESD Type

Reverse Working Voltage (V)	
3V3	3.3V
05	5V
16	16V

Line	
1	1-Line
2	2-Line
3	3-Line

Capacitance Type	
L	Low
X	Normal

directional	
0	Bi
1	Uni

Size	
1	0201
2	0402
3	DFN0603
4	DFN1006

★ Code 4 to 9 is optional

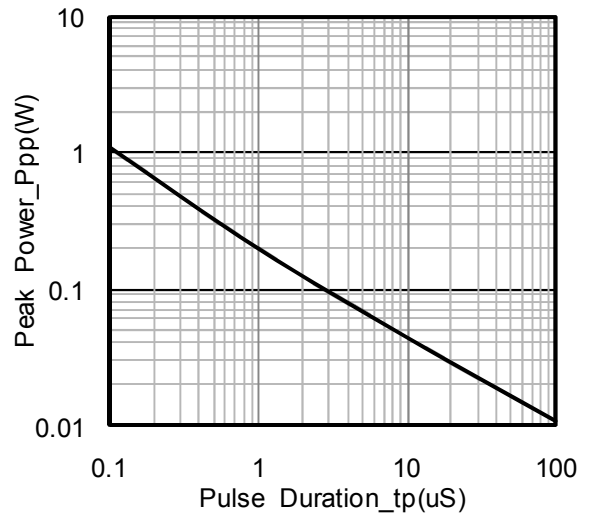
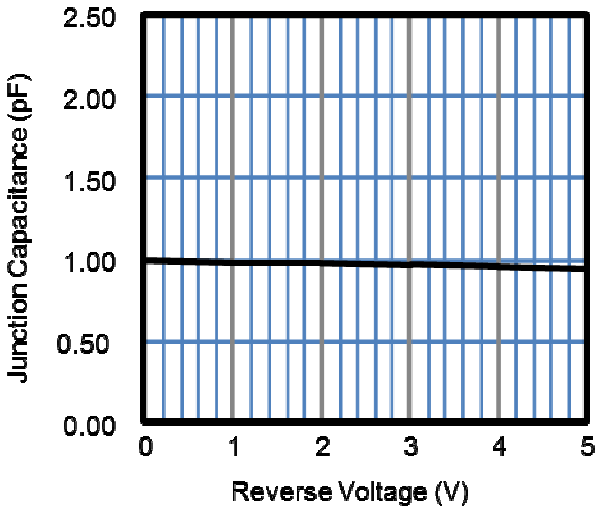
### Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppk	350	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	I <sub>PP</sub>	10	A
ESD per IEC 61000-4-2 (Air)	ESD	$\pm 30$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 30$	
Junction Temperature	T <sub>J</sub>	+150 MAX	$^{\circ}\text{C}$
Ambient Temperature	T <sub>amb</sub>	-55 to +150	$^{\circ}\text{C}$
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	$^{\circ}\text{C}$

### Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ unless otherwise specified)

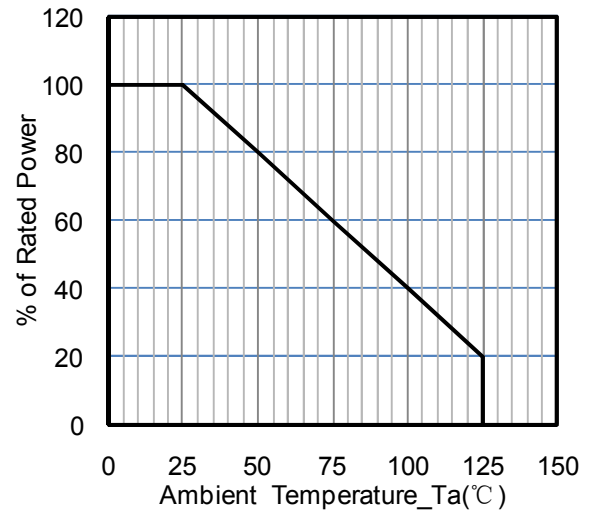
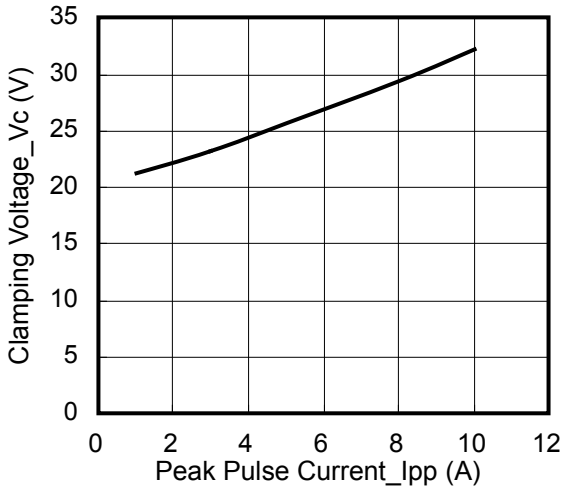
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	RWM			15	V	
Breakdown Voltage	BR	16.7			V	I <sub>T</sub> = 1mA
Reverse Leakage Current	I <sub>R</sub>			0.2	$\mu\text{A}$	RWM = 15V
Clamping Voltage	C			22	V	I <sub>PP</sub> = 1A (8 x 20 $\mu\text{s}$ pulse)
Clamping Voltage	C			35	V	I <sub>PP</sub> = 10A (8 x 20 $\mu\text{s}$ pulse)
Junction Capacitance	C <sub>J</sub>		1		pF	V <sub>R</sub> = 0V, f = 1MHz

Typical Performance Characteristics (TA=25°C unless otherwise Specified)



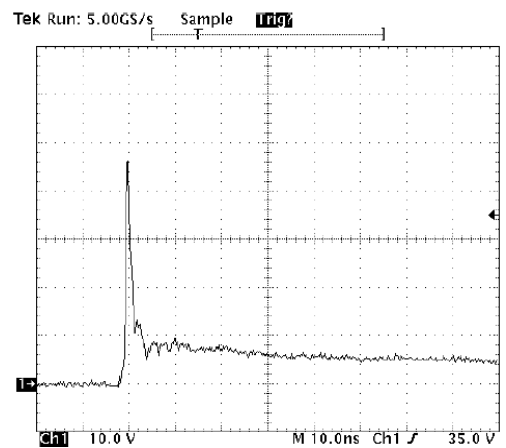
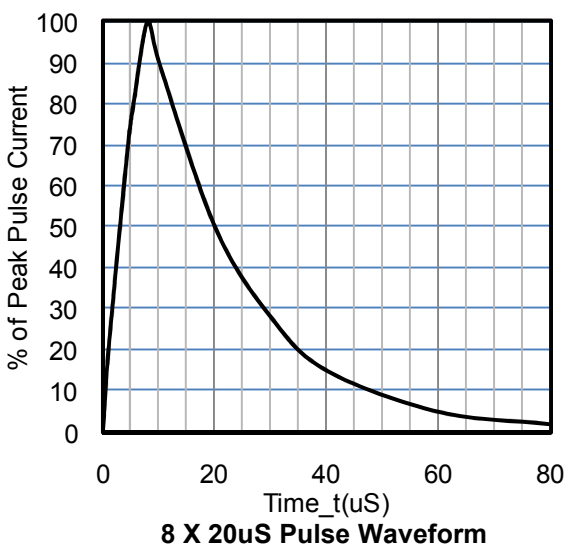
Junction Capacitance vs. Reverse Voltage

Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current

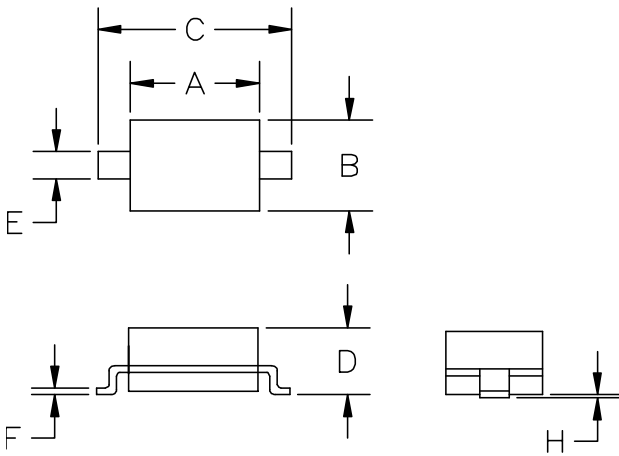
Power Derating Curve



ESD Clamping Voltage

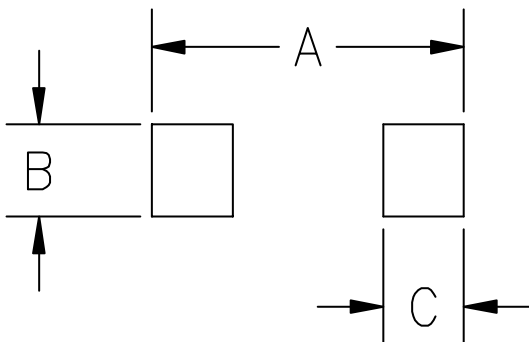
8 kV Contact per IEC61000-4-2

SOD-323 Package Outline Drawing



SYM	DIMENSIONS			
	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.50	1.80	0.060	0.071
B	1.20	1.40	0.045	0.054
C	2.30	2.70	0.090	0.107
D	-	1.10	-	0.043
E	0.30	0.40	0.012	0.016
F	0.10	0.25	0.004	0.010
H	-	0.10	-	0.004

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
A	3.15	0.120
B	0.80	0.031
C	0.80	0.031

Ordering Information

Part Number	Packaging	Reel Size
ESD1510LG	3000/Tape & Reel	7 inch