

## ESD Protection Diode

### Features

- Ultra small package: SOD-523
- Protects one data or power line
- Ultra low leakage: nA level
- Operating voltage: 15V
- Low clamping voltage
- 2-pin leadless package
- AEC-Q101 qualified (Automotive grade with suffix "Q".)
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 30\text{kV}$
    - Contact discharge:  $\pm 30\text{kV}$
  - IEC61000-4-5 (Lightning) 10A (8/20 $\mu\text{s}$ )
- RoHS Compliant

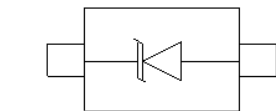
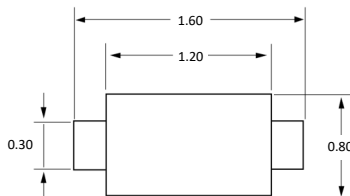
### Mechanical Characteristics

- Package: SOD-523
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Below

### Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Power Supply
- Keypads, Side Keys, LCD Displays

### Dimensions and Pin Configuration

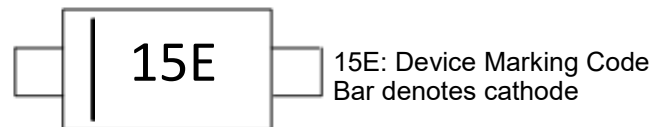


SOD-523 (Top View)

Package Dimensions (mm)

Circuit and Pin Schematic

### Marking Information



### Ordering Information

Part Number	Packaging	Reel Size
EP15D5	3000/Tape & Reel	7 inch

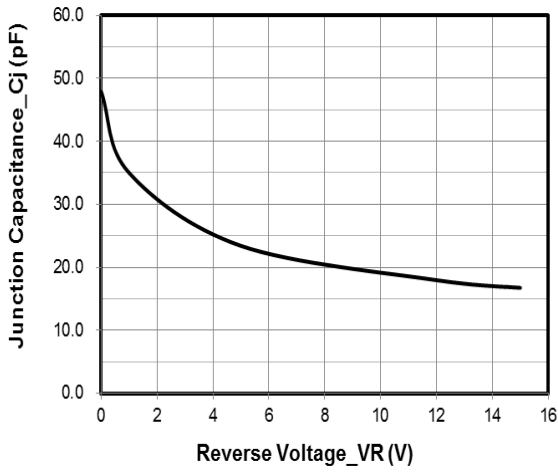
**Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppk	320	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	Ipp	10	A
ESD per IEC 61000-4-2 (Air)	VESD	$\pm 30$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 30$	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

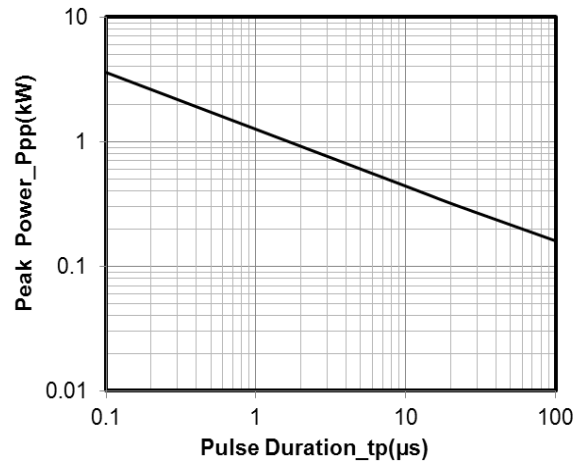
**Electrical Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			15	V	Pin 1 to Pin 2
Breakdown Voltage	VBR	16.5			V	IT = 1mA, Pin 1 to Pin 2
Reverse Leakage Current	IR			0.2	$\mu\text{A}$	VRWM = 15V, Pin 1 to Pin 2
Forward Voltage	VF			1.2	V	IF = 10mA, Pin 2 to Pin 1
Clamping Voltage	VC			23	V	IPP = 1A (8 x 20 $\mu\text{s}$ pulse), Pin 1 to Pin 2
Clamping Voltage	VC			32	V	IPP = 10A (8 x 20 $\mu\text{s}$ pulse), Pin 1 to Pin 2
Junction Capacitance	CJ		50		pF	VR = 0V, f = 1MHz

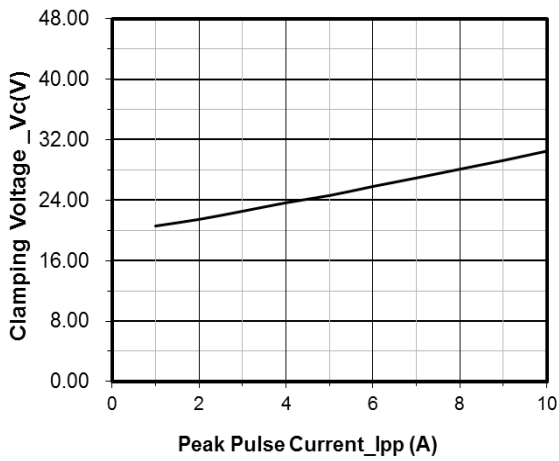
Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise Specified)



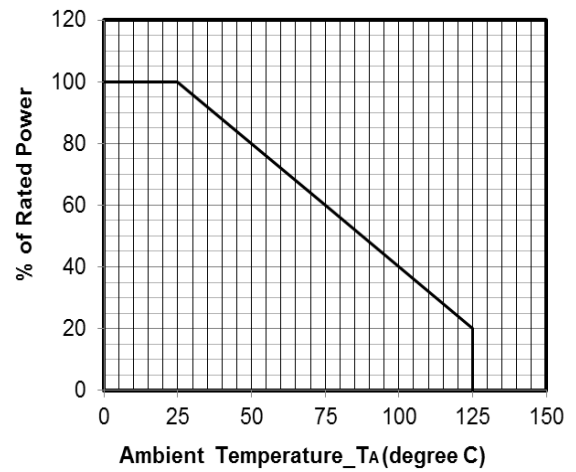
Junction Capacitance vs. Reverse Voltage



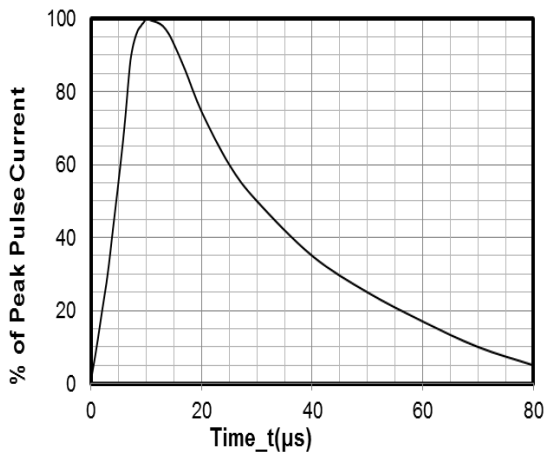
Peak Pulse Power vs. Pulse Time



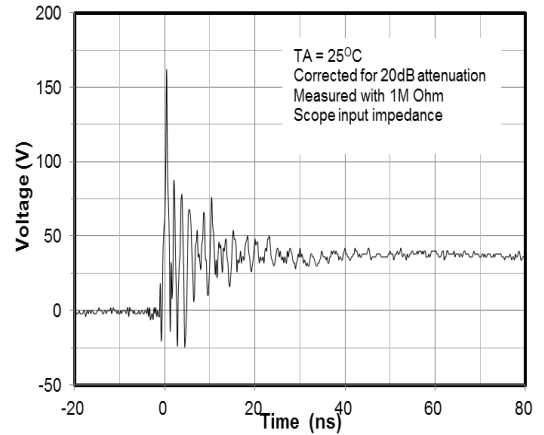
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve

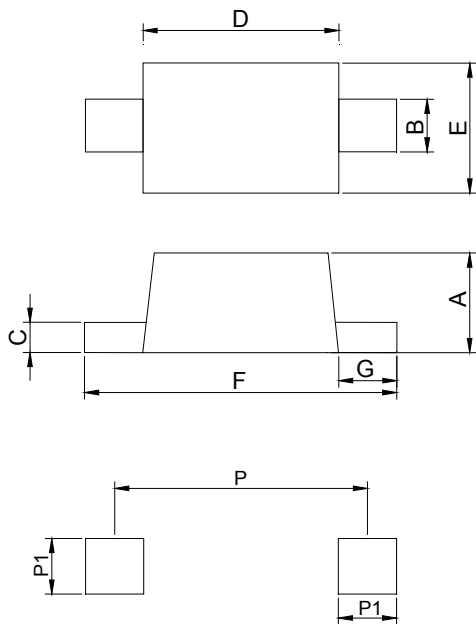


8 X 20 μs Pulse Waveform



ESD Clamping Voltage  
8 kV Contact per IEC61000-4-2

## SOD-523 Package Outline Drawing



Land Pattern

Symbol	Millimeters			Inches		
	Min	Typ	Max	Min	Typ	Max
A	0.50	0.61	0.77	0.020	0.024	0.030
B	0.25	0.30	0.40	0.010	0.012	0.016
C	0.07	0.13	0.20	0.003	0.005	0.008
D	1.10	1.20	1.30	0.043	0.047	0.051
E	0.70	0.80	0.90	0.028	0.031	0.035
F	1.50	1.60	1.70	0.059	0.063	0.067
G	0.15	0.20	0.25	0.006	0.008	0.010
P1	0.60			0.024		
P	1.42			0.056		

## ORDERING INFORMATION

PART No.	PACKAGE TYPE	QUANTITY(PCS) REEL	DESCRIPTION
EP15D5	SOD-523	5,000	7 inch reel pack