

## ESD Protection Diode

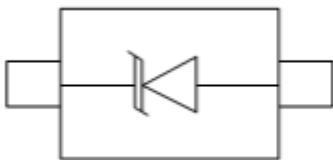
### Features

- \* Protects one power line
- \* Ultra low leakage: nA level
- \* Low operating voltage: 7V
- \* Low clamping voltage
- \* 2 pin leadless package
- \* 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) 25A (8/20 $\mu\text{s}$ )
- \* RoHS Compliant
- \* Package: SOD 523
- \* AEC-Q101 qualified (Automotive grade with suffix "Q")

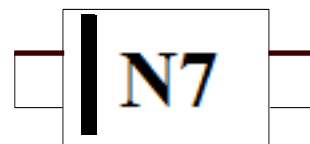
### Applications

- \* Cellular Handsets and Accessories
- \* Personal Digital Assistants
- \* Notebooks and Handhelds
- \* Portable Instrumentation
- \* Digital Cameras
- \* Peripherals
- \* Audio Players
- \* Keypads, Side Keys, LCD Displays

### Circuit Diagram



### Package Outline



#### Transparent top view

N7: Device Marking Code

Bar denotes cathode

### Ordering Information

Part Number	Packaging	Reel Size
EPD0710S5	3000/Tape & Reel	7 inch

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

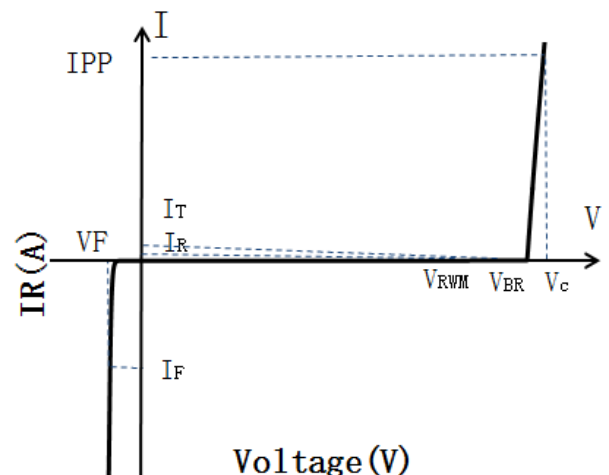
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppk	450	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	IPP	25	A
ESD per IEC 61000-4-2 (Air)	VESD	$\pm 30$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 30$	
Operating Temperature Range	TJ	-40 to +125	$^\circ\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^\circ\text{C}$

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

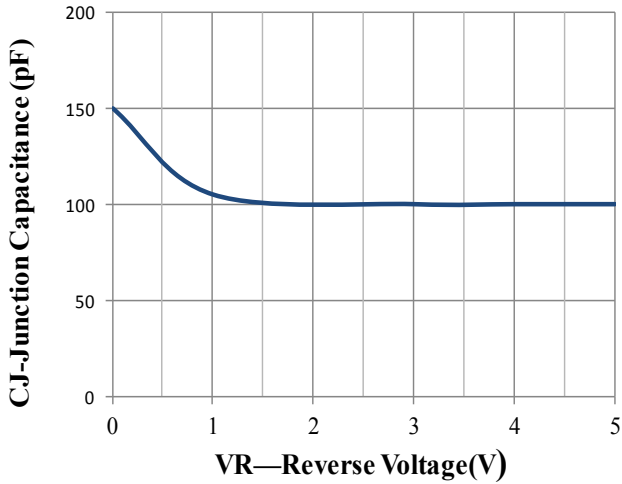
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	$V_{RWM}$				7.0	V
Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$	8.0	9.5	10.5	V
Forward Voltage	$V_F$	$I_F = 10\text{mA}$		0.7	1.2	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 7.0\text{V}$			0.5	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP} = 13\text{A}$ (8 x 20 $\mu\text{s}$ pulse)		13		V
Clamping Voltage	$V_C$	$I_{PP} = 25\text{A}$ (8 x 20 $\mu\text{s}$ pulse)		16	19	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$		150	200	pF

### Portion Electronics Parameter

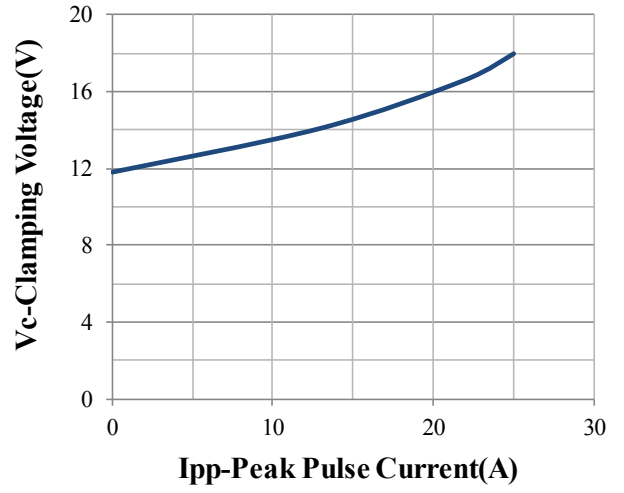
Symbol	Parameter
$I_T$	Test Current
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_C$



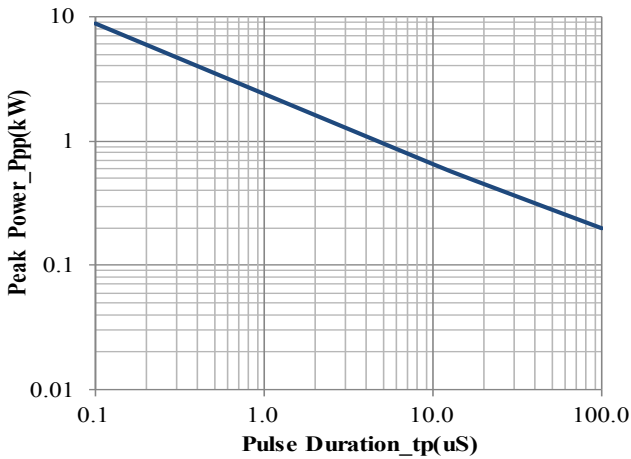
Typical Performance Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise Specified)



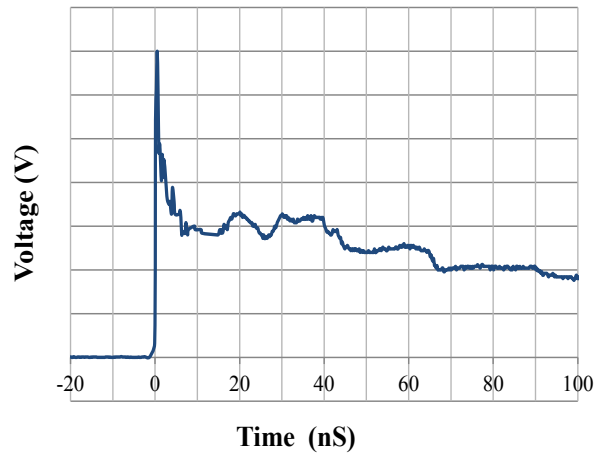
Junction Capacitance vs. Reverse Voltage



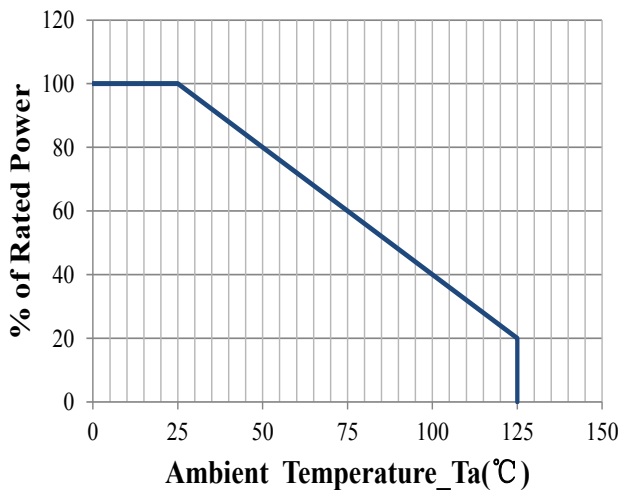
Clamping Voltage vs. Peak Pulse Current



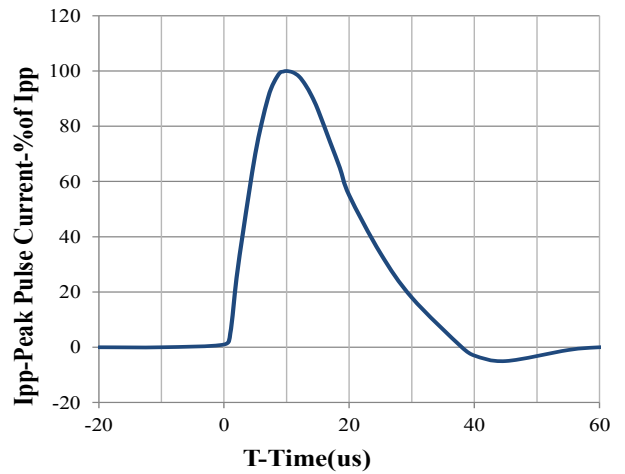
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform

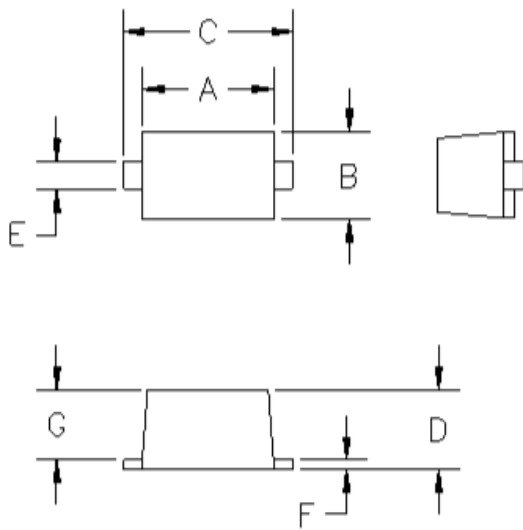


Power Derating Curve



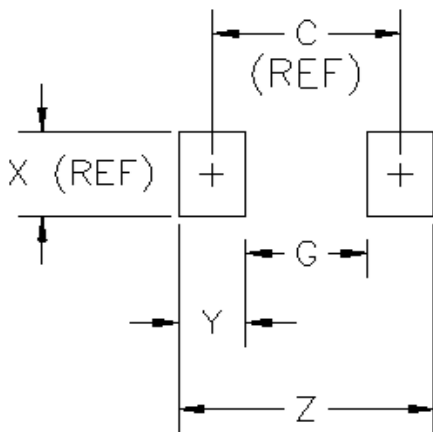
8 X 20us Pulse Waveform

**SOD-523 Package Outline Drawing**



DIMENSIONS					
DIM <sup>N</sup>	INCHES		MM		NOTE
	. MIN	MAX	MIN	MAX	
A	.043	.051	1.10	1.30	—
B	.028	.035	0.70	0.90	—
C	.059	.067	1.50	1.70	—
D	.020	.028	0.50	0.70	—
E	.010	.014	0.25	0.35	—
F	.004	.008	0.10	0.20	—
G	.020	.028	0.50	0.70	—

**Suggested Land Pattern**



DIMENSIONS					
DIM <sup>N</sup>	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
C	—	.067	—	1.70	REF
G	—	.043	—	1.10	—
X	—	.031	—	0.80	REF
Y	—	.024	—	0.60	—
Z	—	.091	—	2.30	—