

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: $\pm 30\text{kV}$

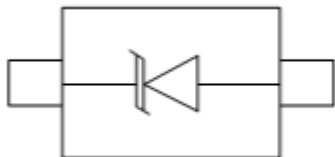
IEC61000-4-5 (Lightning) 8.8A (8/20 μs)

- RoHS Compliant
- Package: SOD-523
- AEC-Q101 qualified (Automotive grade with suffix "Q".)
- Expsemi electronics

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



Ordering Information

Part Number	Packaging	Reel Size
EPD0711S5	3000/Tape & Reel	7 inch

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

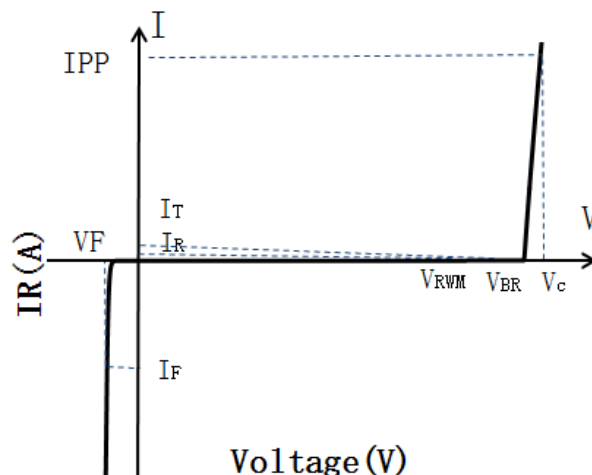
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	200	W
Peak Pulse Current (8/20 μs)	IPP	8.8	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	TJ	-40 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

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

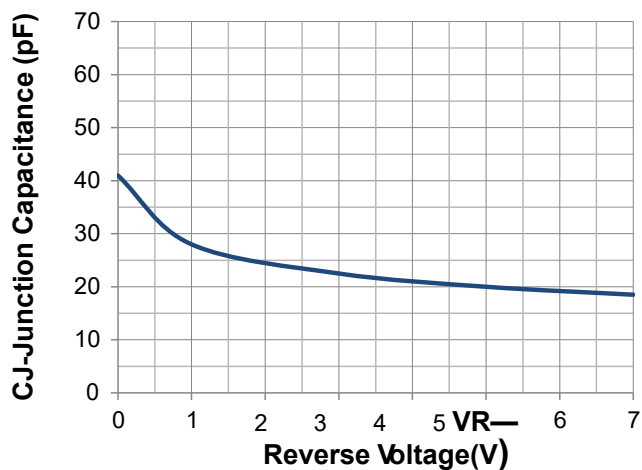
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				7.0	V
Breakdown Voltage	V_{BR}	$I_{\text{T}} = 1\text{mA}$	8.0	9.5	10.5	V
Forward Voltage	V_{F}	$I_{\text{F}} = 10\text{mA}$		0.7	1.2	V
Reverse Leakage Current	I_{R}	$V_{\text{RWM}} = 7.0\text{V}$			0.5	μA
Clamping Voltage	V_{C}	$I_{\text{PP}} = 1\text{A}$ (8 x 20 μs pulse)		11		V
Clamping Voltage	V_{C}	$I_{\text{PP}} = 8.8\text{A}$ (8 x 20 μs pulse)		16	22.7	V
Junction Capacitance	C_{J}	$V_{\text{R}} = 0\text{V}$, $f = 1\text{MHz}$		42	65	pF

Portion Electronics Parameter

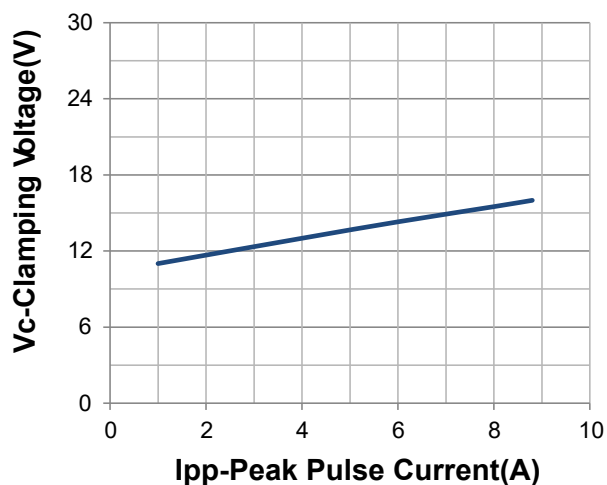
Symbol	Parameter
I_{T}	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_{C}	Clamping Voltage @ I_{C}



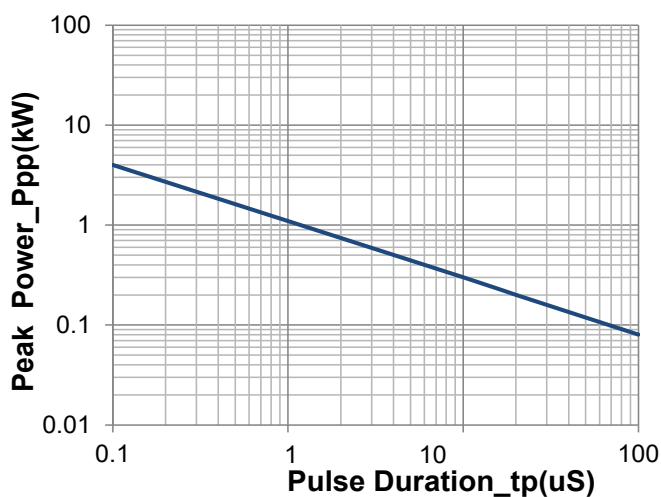
Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



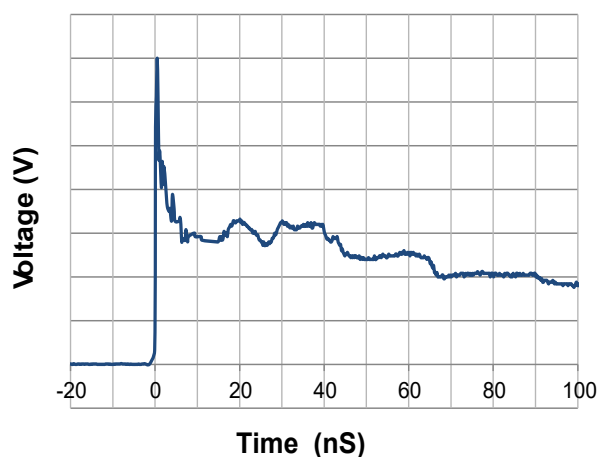
Junction Capacitance vs. Reverse Voltage



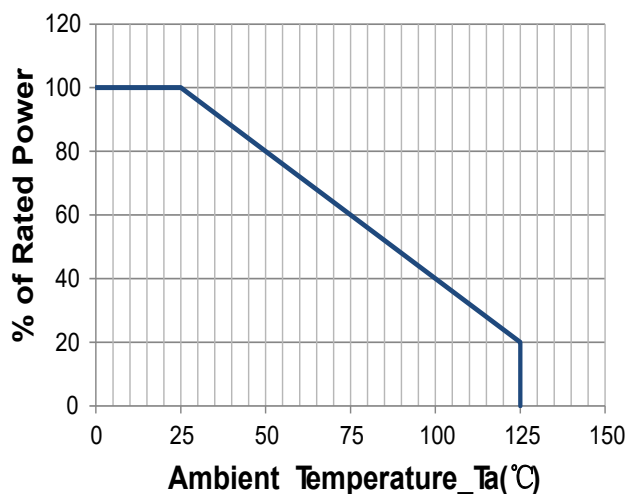
Clamping Voltage vs. Peak Pulse Current



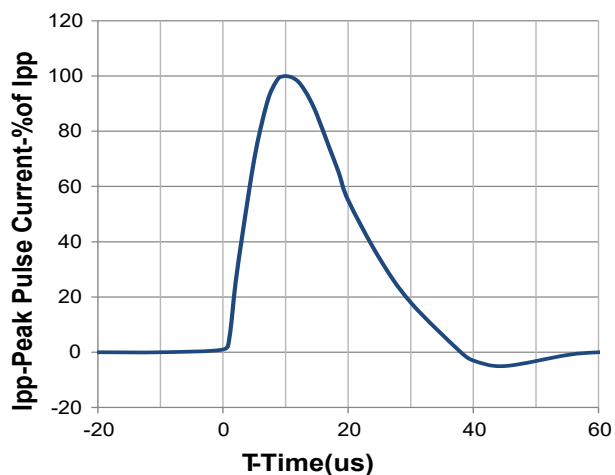
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform

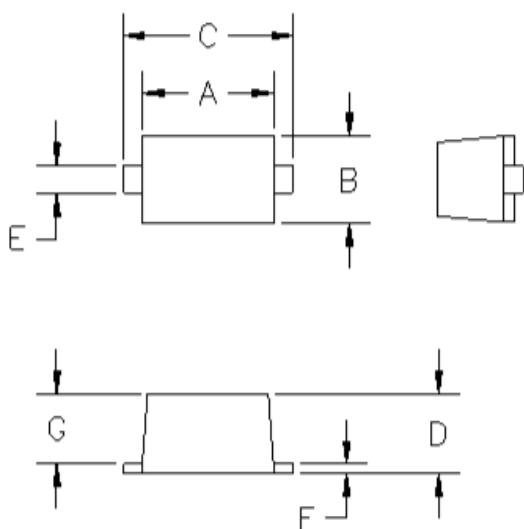


Power Derating Curve



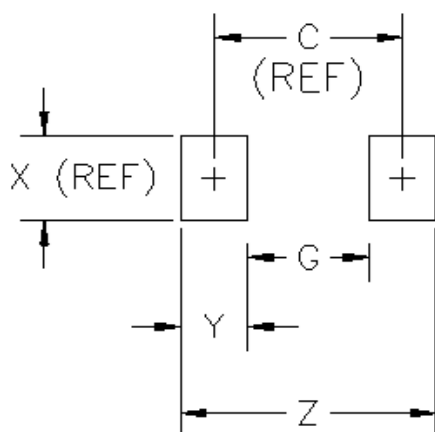
8 X 20us Pulse Waveform

SOD-523 Package Outline Drawing



DIMENSIONS					
DIM ^N	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 ^N	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	—