Features

Ultra small package: 1.0x0.6x0.5mm

* Ultra low capacitance: 8pF typical
* Ultra low leakage: nA level
* Low operating voltage: 12V
* Low clamping voltage
* 2-pin leadless package
* Complies with following standards:
* – IEC 61000-4-2 (ESD) immunity test

Air discharge: ±30kV

Contact discharge: ±30kV

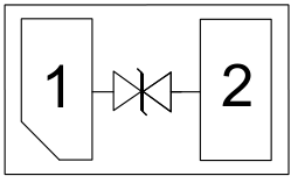
– IEC61000-4-5 (Lightning) 8A (8/20μs)

* RoHS Compliant

AEC-Q101 qualified (Automotive grade with suffix "Q".)

Exsemi technology

Circuit Diagram



Package Outline

Transparent top view

AA: Device Marking

Code Dot denotes Pin1

Description

The EP1211D2 is a bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping volt-age, making this device an ideal solution for protect-ing voltage sensitive data and power line. The EP1211D2 complies with the IEC 61000-4-2 (ESD) standard 4 with ±15 kV air and ±8 kV contact dis-charge. It is assembled into an ultra-small 1.0x0.6x0.5mm lead-free 0402 package. The small size and high ESD surge protection make EP1211D2 an ideal choice to protect cell phone, digital cameras, audio players and many other portable appli-cations.

Applications

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

Ordering Information

Part Number	Packaging	Reel Size
EP1211D2	10000/Tape & Reel	7 inch

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

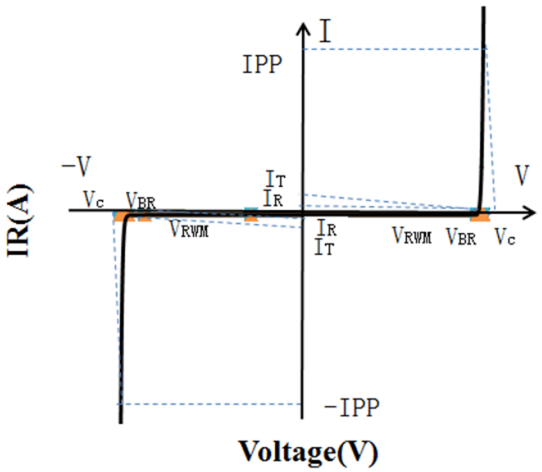
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	150	W
Peak Pulse Current (8/20μs)	IPP	8	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	VESD	±30 ±30	kV
Operating Temperature Range	TJ	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

Electrical Characteristics (T_A=25°C unless otherwise specified)

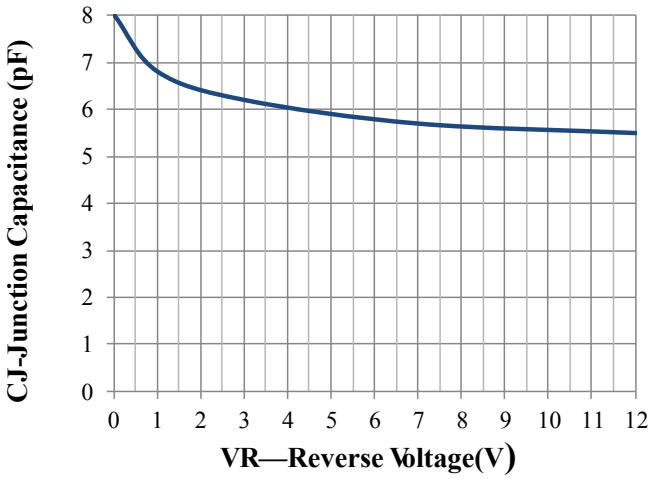
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				12. 0	V
Breakdown Voltage	V_{BR}	I_T = 1mA	13.0			V
Reverse Leakage Current	I_R	V_{RWM} = 12V			0.2	μA
Clamping Voltage	V_C	I_{PP} = 8A (8 x 20μs pulse)		18. 0	21.0	V
Junction Capacitance	C_J	VR = 0V, f = 1MHz		8	12	pF

Portion Electronics Parameter

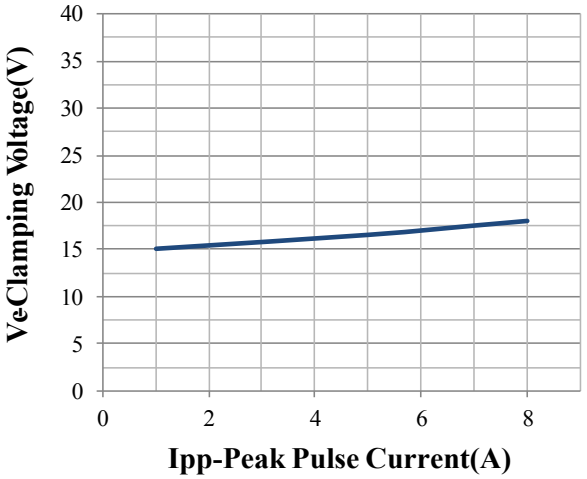
Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
Vc	Clamping Voltage @Ic



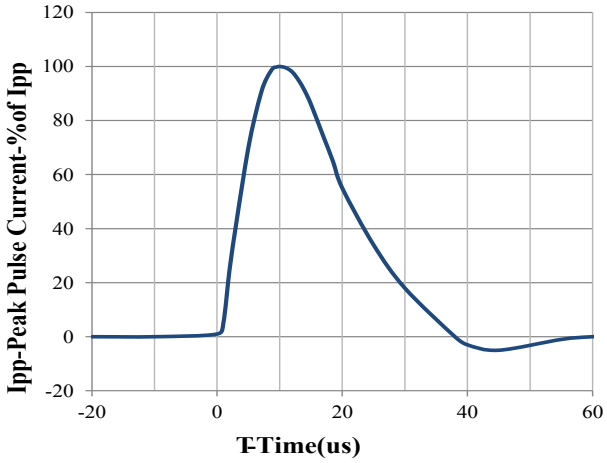
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



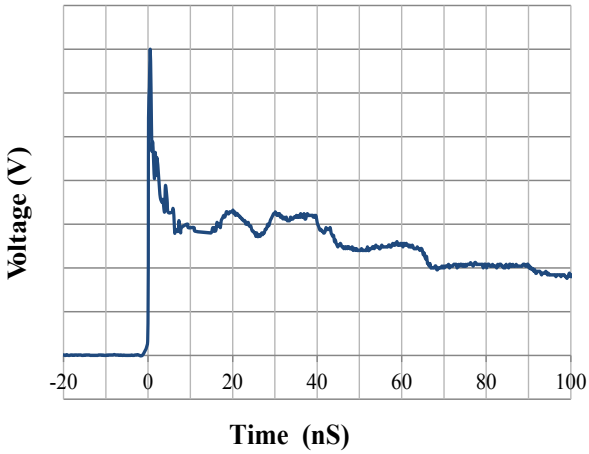
Junction Capacitance vs. Reverse Voltage



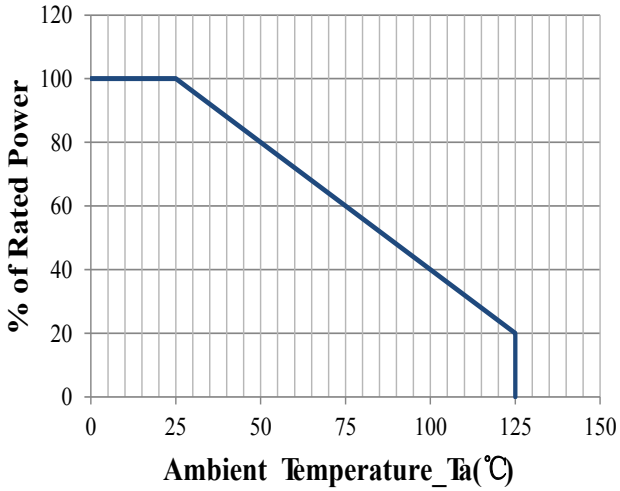
Clamping Voltage vs. Peak Pulse Current



8 X 20us Pulse Waveform

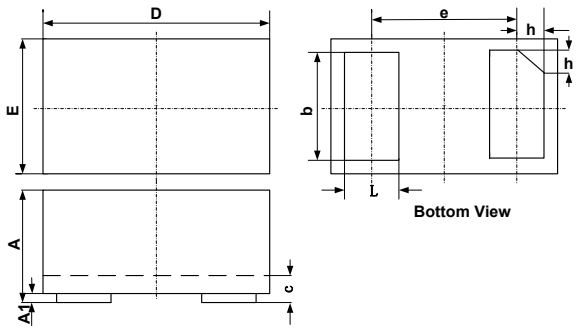


IEC61000-4-2 Pulse Waveform



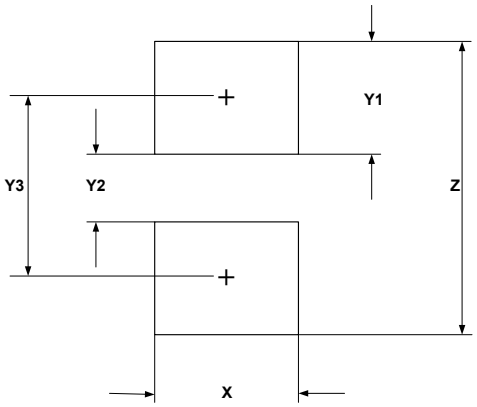
Power Derating Curve

DFN1006-2(0402)Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.45	0.50	0.55	0.018	0.020	0.022
c	0.12	0.15	0.18	0.005	0.006	0.007
D	0.95	1.00	1.05	0.037	0.039	0.041
e	0.65 BSC			0.026 BSC		
E	0.55	0.60	0.65	0.022	0.024	0.026
L	0.20	0.25	0.30	0.008	0.010	0.012
h	0.07	0.12	0.17	0.003	0.005	0.007

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.60	0.024
Y1	0.50	0.020
Y2	0.30	0.012
Y3	0.80	0.032
Z	1.30	0.052