

## Description

The PESD12VV1BL,315-JSM is designed to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space is at a premium.

## Features

- ◆ Small Body Outline Dimensions:  
1.00 mm x 0.60 mm  
Low Body Height: 0.50 mm
  - ◆ Low Leakage
  - ◆ Response Time is Typically < 1 ns
  - ◆ ESD Rating of Class 3 (> 16 kV) per Human Body Model
  - ◆ IEC61000-4-2 Level 4 ESD Protection
- We declare that the material of product compliance with RoHS requirements.

## Applications

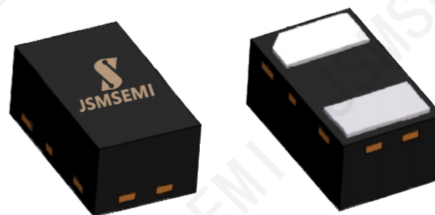
- ◆ Cellular phones audio
- ◆ MP3 players
- ◆ Digital cameras
- ◆ Portable applications
- ◆ mobile phone

## MAXIMUM RATINGS

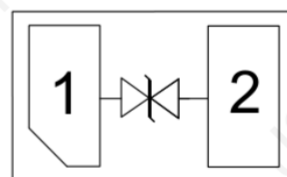
Rating	Symbol	Value	Unit
IEC 61000-4-2 (ESD) Air Contact Contact discharge		±25 ±25	kV kV
ESD Voltage Per Human Body Model		16	kV
Total Power Dissipation on FR-5 Board (Note 1) @ T <sub>A</sub> =25°C	PD	150	mW
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to 150	°C
Lead Solder Temperature – Maximum (10 Second Duration)	TL	260	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Rating are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. FR-5 = 1.0\*0.75\*0.62 in.



DFN1006

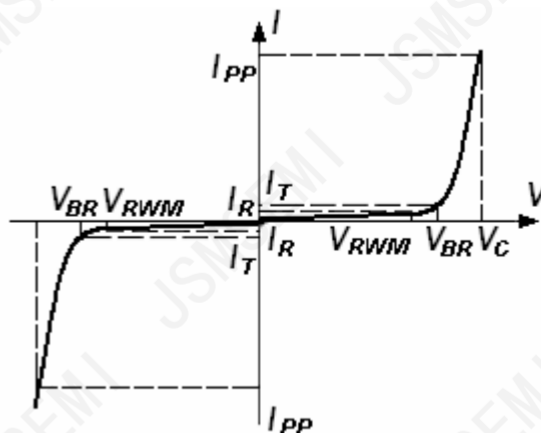


Circuit Diagram

**ELECTRICAL CHARACTERISTICS**

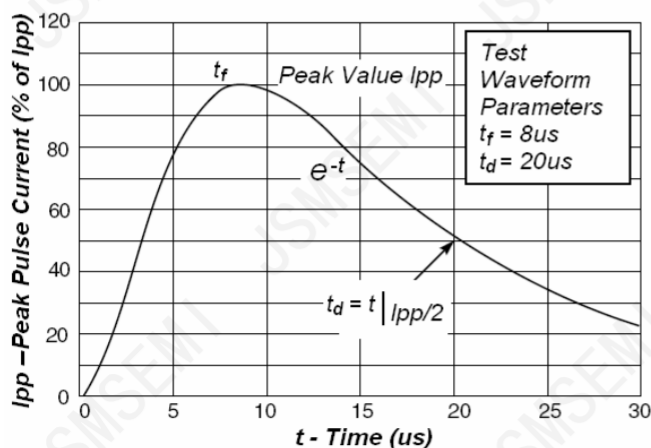
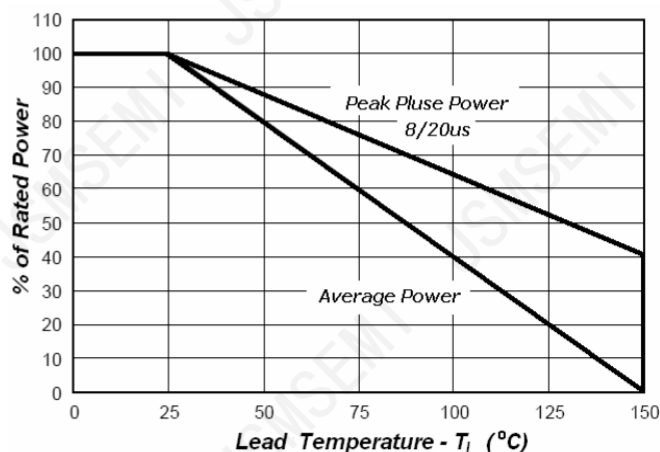
 (T<sub>A</sub> = 25°C unless otherwise noted)

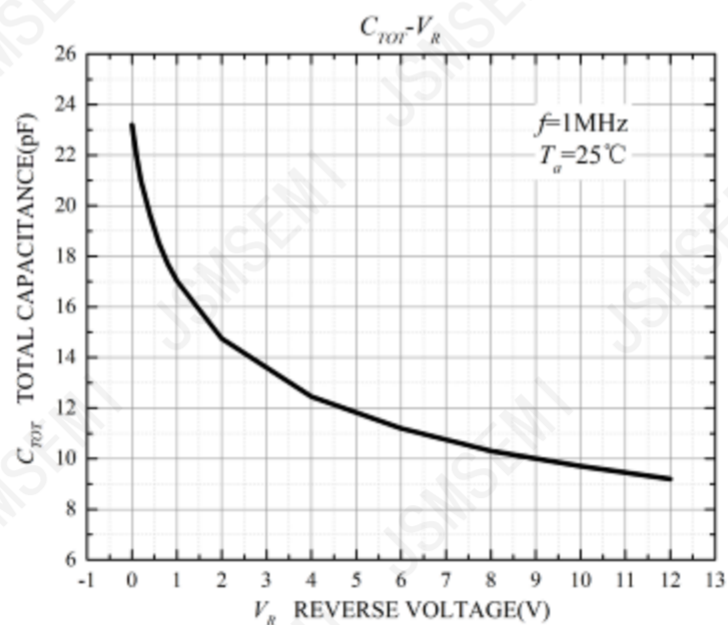
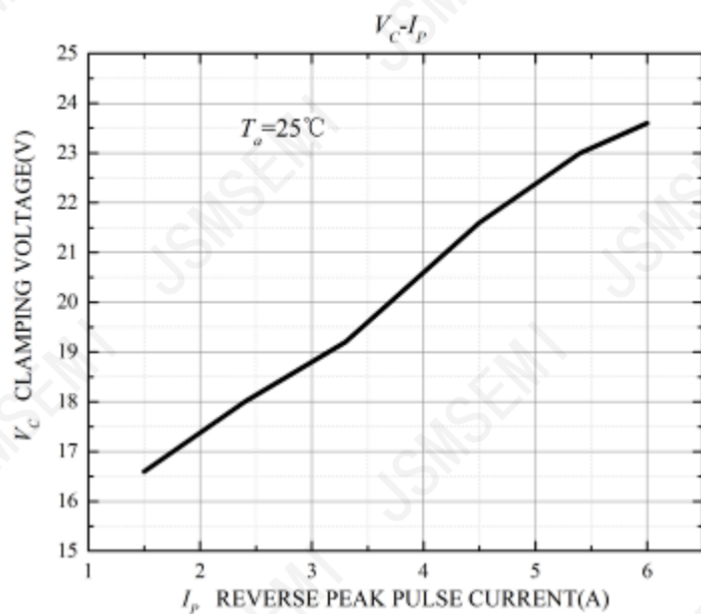
Symbol	Parameter
I <sub>PP</sub>	Maximum Reverse Peak Pulse Current
V <sub>C</sub>	Clamping Voltage @ I <sub>PP</sub>
V <sub>RWM</sub>	Working Peak Reverse Voltage
I <sub>R</sub>	Maximum Reverse Leakage Current @ V <sub>RWM</sub>
V <sub>BR</sub>	Breakdown Voltage @ I <sub>T</sub>
I <sub>T</sub>	Test Current
I <sub>F</sub>	Forward Current
V <sub>F</sub>	Forward Voltage @ I <sub>F</sub>
P <sub>pk</sub>	Peak Power Dissipation
C	Max. Capacitance @V <sub>R</sub> = 0 and f = 1 MHz


**ELECTRICAL CHARACTERISTICS**

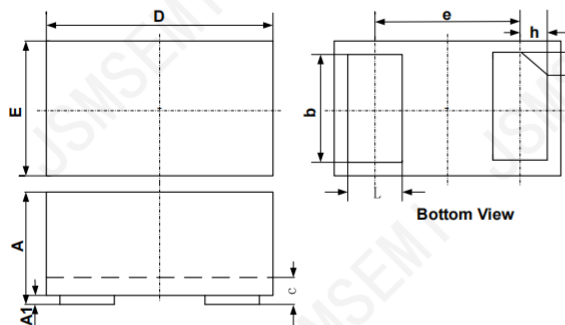
Device	V <sub>RWM</sub> (V)	I <sub>R</sub> (μA) @ V <sub>RWM</sub>	V <sub>BR</sub> (V) @ I <sub>T</sub> (Note 1)		I <sub>T</sub> (mA)	I <sub>PP</sub> (A)	V <sub>C</sub> (V) @ Max I <sub>PP</sub>	P <sub>PK</sub> (W) (8*20 μs)	C (pF)		
	Max	Max	Min	Max		Max	Max	Max	Min	Typ	Max
PESD12VV1BL,315	12	1.0	13.3	16	1.0	4	25	100		5	

1. V<sub>BR</sub> is measured with a pulse test current I<sub>T</sub> at an ambient temperature of 25°C
2. Surge current waveform per Figure 1.


**Fig1. Pulse Waveform**

**Fig2 Power Derating**

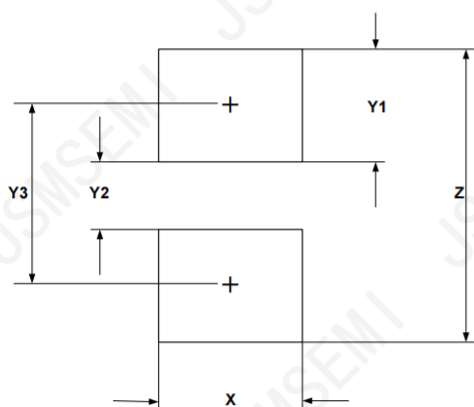


## DFN1006-2(0402)Package Outline Drawing



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

## Revision History

Rev.	Change	Date
V1.0	Initial version	2/23/2024

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