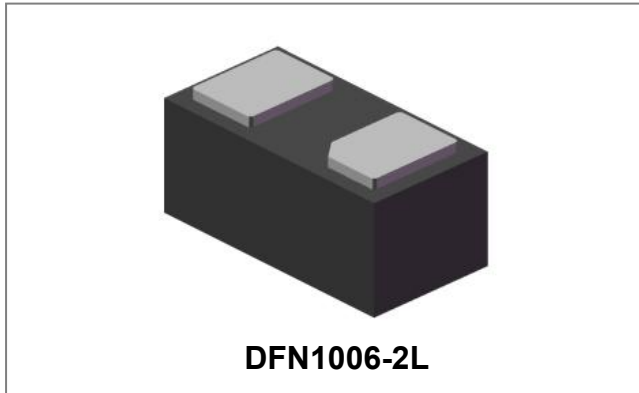


## SESD5V0V1BLA Bidirectional ESD Diode



### Description

SESD5V0V1BLA is a very low capacitance bidirectional ElectroStatic Discharge (ESD) protection diodes. It's designed in a DFN1006 leadless ultra small Surface Mounted Device (SMD) plastic package to protect one signal line from the damage caused by ESD and other transients.

### Circuit Diagram



### Features

- Ultra small SMD plastic package
- Bidirectional ESD protection of one line
- Max. Peak pulse power: P<sub>pp</sub>=40W
- Low clamping voltage: V<sub>CL</sub>=12V
- Ultra low leakage current
- ESD protection up to 30KV
- IEC 61000-4-2(ESD)±15KV(air),±8KV(contact)
- IEC 61000-4-5 (surge) ;4A (8/20us)
- This is a Halogen Free Device

### Applications

- Computers and peripherals
- Communication systems
- Audio and video equipment
- Portable electronics
- Cellular handsets and accessories
- 10/100 Mbit/s Ethernet
- Subscriber Identity Module card protection
- FireWire

### Mechanical Characteristics

- DFN1006-2L package
- Marking: X1
- Molding compound flammability rating: UL 94V-0

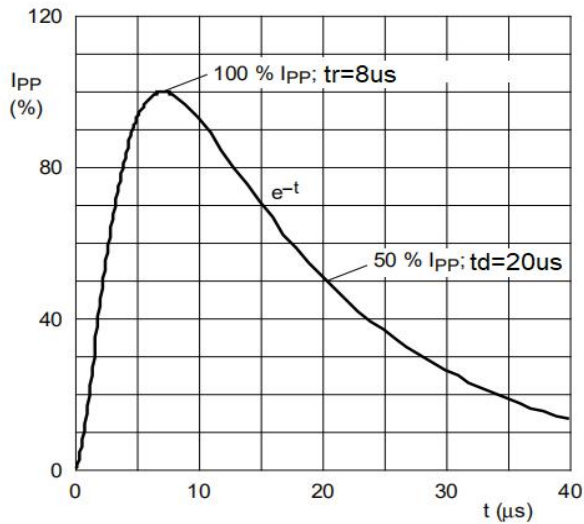
**Maximum Ratings**

Characteristics	Symbol	Max.	Units
Peak Pulse Power (tp=8/20us)	P <sub>PK</sub>	40	Watts
Peak Pulse Current (tp=8/20us)	I <sub>PP</sub>	4	A
Lead Soldering Temperature	T <sub>L</sub>	260(10 seconds)	°C
Operating Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-65 to +150	°C

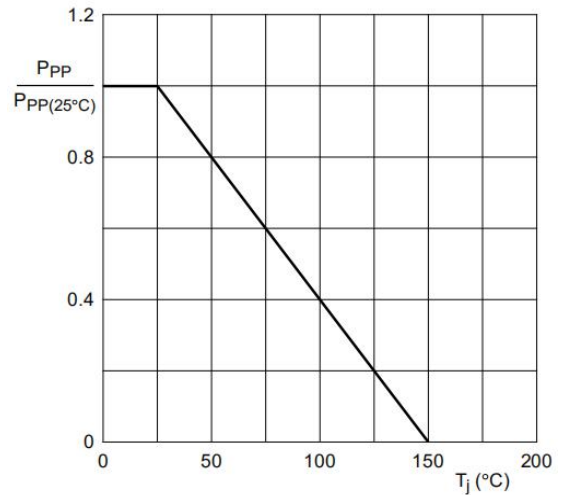
**Electrical Characteristics(T=25°C unless otherwise specified)**

Characteristics	Symbol	Condition	Min.	Typ.	Max.	Units
Reverse Stand-Off Voltage	V <sub>RWM</sub>				5.0	V
Breakdown Voltage	V <sub>BR</sub>	I <sub>R</sub> =5mA	5.8	7.5	7.8	V
Reverse Leakage Current	I <sub>RM</sub>	V <sub>RWM</sub> =5V, T=25°C			10	nA
Clamping Voltage	V <sub>C</sub>	I <sub>PP</sub> =4A, tp=8/20us			12	V
Diode Capacitance	C <sub>d</sub>	V <sub>R</sub> =0V, f=1MHz		11.4	13	pF
Differential Resistance	R <sub>dif</sub>	I <sub>R</sub> =5mA			35	Ω

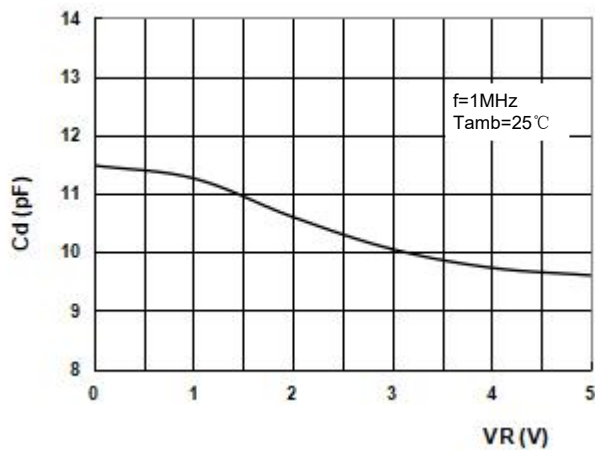
**Ratings and Characteristics Curves**



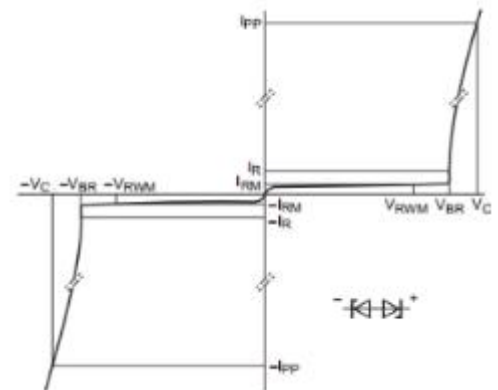
**Fig 1. 8/20us Pulse Waveform**



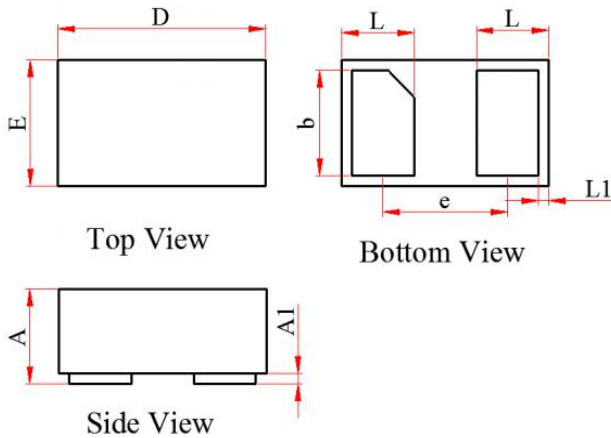
**Fig 2. Relative Variation of Peak Pulse Power as a function of Junction Temperature**



**Fig3. Capacitance as a function of Reverse Voltage**



**Fig4. Characteristics for a Bidirectional ESD Protection Diode**

**Mechanical Dimensions**


Symbol	Dimension In Millimeters			Dimension In Inches		
	Normal	Min	Max	Normal	Min	Max
A	--	0.400	0.500	--	0.016	0.020
Al	--	--	0.075	--	--	0.003
D	1.000	0.950	1.050	0.039	0.037	0.041
E	0.600	0.550	0.650	0.024	0.022	0.026
b	0.500	0.450	0.550	0.020	0.018	0.022
L	0.350	0.300	0.400	0.014	0.012	0.016
L1	0.050 REF			0.002 REF		
e	0.600 BSC			0.024 BSC		

**Marking Diagram**


X1 = device code

**Ordering Information:**

Device	Package	Shipping
SESD5V0V1BLA	DFN1006-2L	10000pcs/ reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**DISCLAIMER:**

1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the SMC Diode Solutions sales department for the latest version of the datasheet(s).

2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment, and safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement.

3- In no event shall SMC Diode Solutions be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). SMC Diode Solution assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.

4- In no event shall SMC Diode Solutions be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.

5- No license is granted by the datasheet(s) under any patents or other rights of any third party or SMC Diode Solutions.

6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of SMC Diode Solutions.

7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations..