

**APPROVAL DRAWING**

Surge Components product name
SES5VD923-2B TR (RoHS compliant)

**CONTENTS**

1. DESCRIPTION
2. FEATURE
3. APPLICATION
4. ELECTRICAL CHARACTERISTICS
5. ABSOLUTE MAXIMUM RATING
6. TYPICAL CHARACTERISTICS
7. PRODUCT DIMENSION AND PAD SIZE

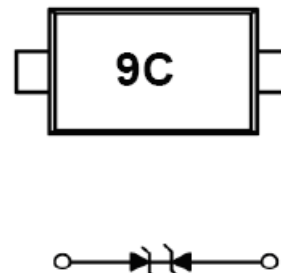
Surge Components, Inc.

Customer Acknowledgement
--------------------------

Manufacturer Surge Components, Inc.
2009-05-06

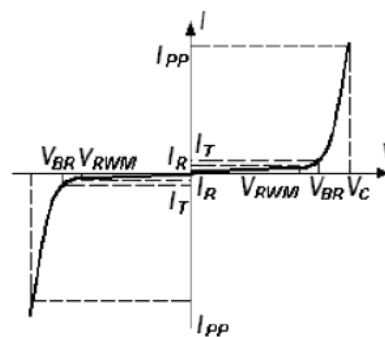
## 1. DESCRIPTION

The SES5VD923-2B ESD protector is designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebook computers, and PDA's. They feature large cross-sectional area junctions for conducting high transient currents, offer desirable electrical characteristics for board level protection, such as fast response time, lower operating voltage, lower clamping voltage and no device degradation when compared to MLVs. The SES5VD923-2B protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events. The SES5VD923-2B is available in a SOD-923 package with working voltages of 5 volt. It gives designer the flexibility to protect one unidirectional line in applications where arrays are not practical. Additionally, it may be "sprinkled" around the board in applications where board space is at a premium. It may be used to meet the ESD immunity requirements of IEC 61000-4-2, Level 4 ( $\pm 15\text{kV}$  air,  $\pm 8\text{kV}$  contact discharge)



## 2. FEATURE

- 100 Watts peak pulse power ( $t_p=8/20\mu\text{s}$ )
- Transient protection for data lines to
  - IEC 61000-4-2(ESD) $\pm 25\text{kV}$ (air), $\pm 10\text{kV}$ (contact)
  - IEC 61000-4-4(EFT) 40A(5/50ns)
  - IEC 61000-4-5(Lightning) 24A(8/20 $\mu\text{s}$ )
- Small package for use in portable electronics
- Suitable replacement for MLV's in ESD protection applications
- Protect one I/O or power line
- Low clamping voltage
- Stand off voltage : 5V
- Low leakage current
- Solid-state silicon-avalanche technology
- Small body Outline Dimensions: 1.0mm\*0.6mm\*0.5mm
- Equivalent to 0402 package



### 3. APPLICATION

- Cell Phone Handsets and Accessories
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Cordless Phones
- Digital Cameras
- Peripherals
- MP3 Players

### 4. ELECTRICAL CHARACTERISTICS PER LINE@25°C (UNLESS OTHERWISE SPECIFIED)

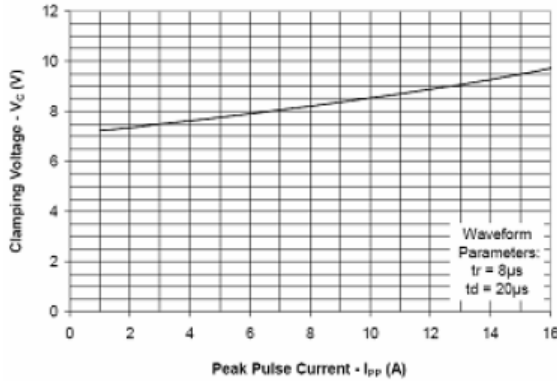
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Working Voltage	$V_{RWM}$				5	V
Breakdown Voltage	$V_{BR}$	$I_t=1mA$	5.6	6.7	7.8	V
Reverse Leakage Current	$I_R$	$V_{RWM}=5V$ $T=25^\circ C$			1	$\mu A$
Clamping Voltage	$V_C$	$I_{PP}=5A$ $T_P=8/20\mu S$			9.8	V
Junction Capacitance	$C_J$	$V_R=0V$ $f=1MHz$		8	15	pF

### 5. ABSOLUTE MAXIMUM RATING @25°C

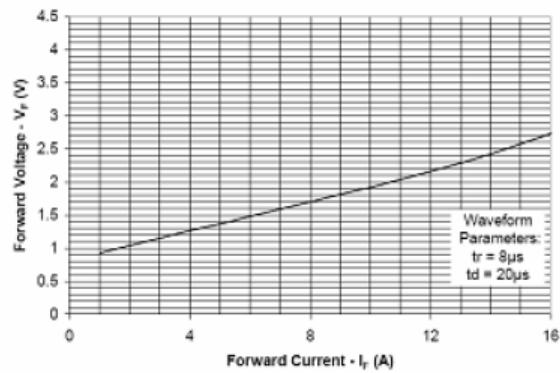
Rating	Symbol	Value	Units
Peak Pulse Power( $t_p=8/20\mu s$ )	$P_{PP}$	100	W
Maximum peak pulse current( $t_p=8/20\mu s$ )	$I_{PP}$	16	A
Lead Soldering temperature	$T_L$	260(10 sec)	$^\circ C$
Operating Temperature	$T_j$	-55 to +125	$^\circ C$
Storage Temperature	$T_{STG}$	-55 to +150	$^\circ C$

## 6. TYPICAL CHARACTERISTICS

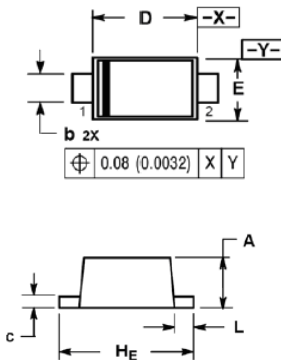
**Figure 1.**  
Clamping Voltage vs. Peak Pulse Current



**Figure 2.**  
Forward Voltage vs. Forward Current



## 7. PRODUCT DIMENSION AND PAD SIZE.



### NOTES:

1. CONTROLLING DIMENSION: MILLIMETERS.
2. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.36	0.40	0.43	0.014	0.016	0.017
b	0.15	0.20	0.25	0.006	0.008	0.010
c	0.07	0.12	0.17	0.003	0.005	0.007
D	0.75	0.80	0.85	0.030	0.031	0.033
E	0.55	0.60	0.65	0.022	0.024	0.026
HE	0.95	1.00	1.05	0.037	0.039	0.041
L	0.05	0.10	0.15	0.002	0.004	0.006

### SOLDERING FOOTPRINT\*

