Surge Components, Inc.

APPROVAL DRAWING

Surge Components product name
SES12VD523-2U TR (RoHS compliant)

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Customer Acknowledgement	Manufacturer Surge Components, Inc. 2010-10-22

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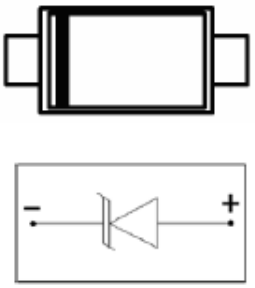
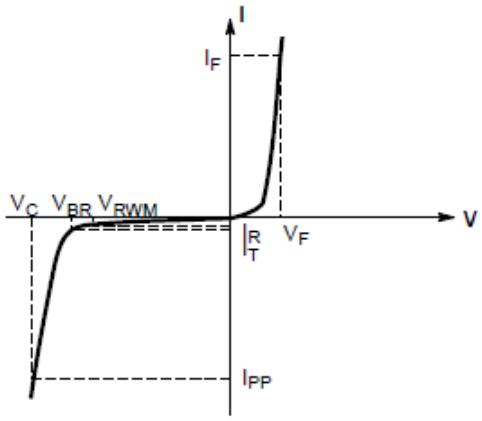
1. DESCRIPTION

The SES12VD523-2U ESD protector is designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebook computers, and PDAs. They feature large cross-sectional area junctions for conducting high transient currents, offer desirable electrical characteristics for board level protections, such as fast response time, lower operating voltage, lower clamping voltage and no device degradation when compared to MLVs. The SES12VD523-2U protects sensitive semiconductor components from damage or upset due to electrostatic discharge(ESD) and other voltage induced transient events. The SES12VD523-2U is available in a SOD-523 package with working Voltages of 12 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 IEC61000-4-2, Level 4(±15kV air, ±8kV contact discharge)



2. FEATURE

- 350 Watts peak pulse power (tp=8/20us)
- Transient protection for data lines to
  IEC 61000-4-2(ESD) ±25kV（air）,±30kV(contact)
  IEC 61000-4-4(EFT) 40A(5/50ns)
  IEC 61000-4-5(Lightning) 24A (8/20us)
- Small package for use in portable electronics
- Suitable replacement for MLVs in ESD protection applications
- Protect one I/O or power line
- Low clamping voltage
- Stand off voltages:12V
- Low leakage current
- Solid-state silicon-avalanche technology
- Small body outline Dimensions: 1.6mm×0.8mm×0.6mm



Uni−Directional TVS

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2. APPLICATION

- Laptop computers
- Cellular phones
- Digital cameras
- PDAs

3. ELECTRICAL CHARACTERISTICS PER LINE@25℃(UNLESS OTHERWISE SPECIFIED)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse stand-off voltage	V_{RWM}				5	V
Reverse Breakdown voltage	V_{BR}	I_t = 1mA	6			V
Reverse Leakage Current	I_R	V_{RWM} = 5V			1	μA
Clamping Voltage	V_C	I_{PP} = 1A t_P = 8/20μs			9.8	V
Clamping Voltage	V_C	I_{PP}=42A t_P = 8/20μs			14.5	V
Junction Capacitance	C_j	V_R=0V f = 1MHz		300		pF

4. ABSOLUTE MAXIMUM RATING @25℃

Rating	Symbol	Value	Units
Unidirectional Peak Pulse Power (t_p=8/20μS)	P_{pp}	500	W
Operating Temperature	T_J	-55 to +150	℃
Storage Temperature	T_{STG}	-55 to +150	℃

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5.TYPICAL CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

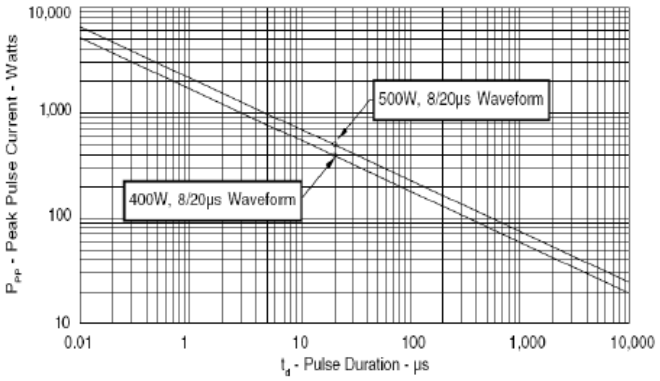


FIGURE 2
PULSE WAVE FORM

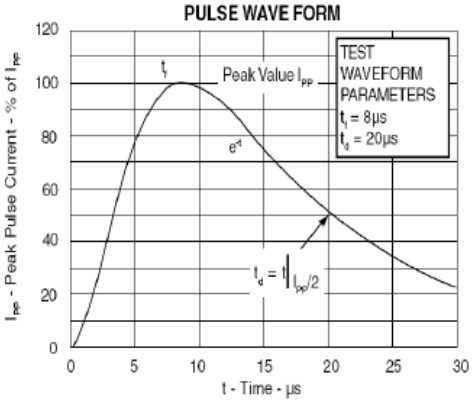
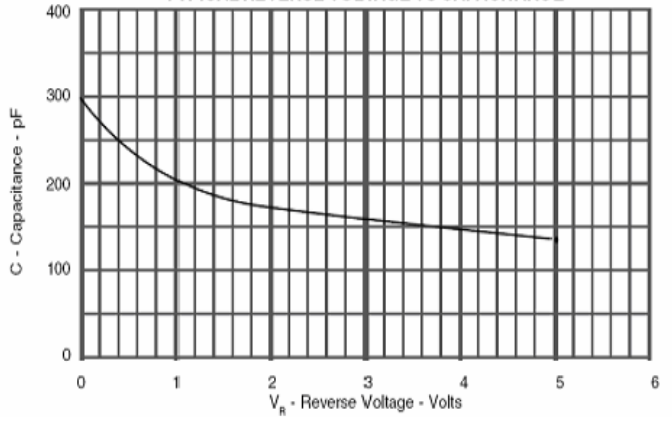


FIGURE 3
TYPICAL REVERSE VOLTAGE VS CAPACITANCE



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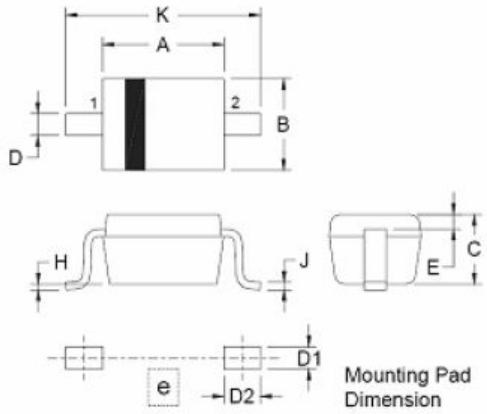
6. PRODUCT DIMENSION AND PAD SIZE.

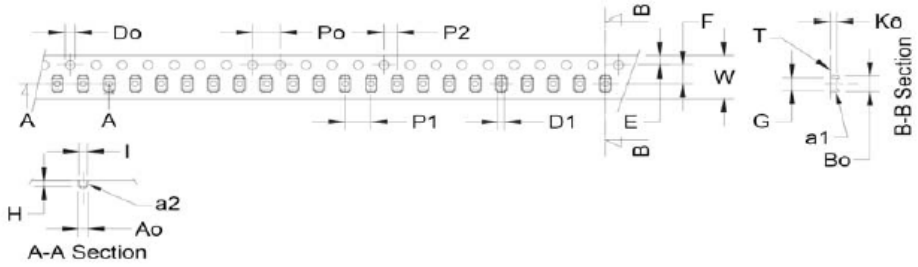


2-Lead SOD-323 Plastic
Surface Mounted Package

DIM	Min.	Max.
A	1.60	1.80
B	1.15	1.45
C	0.80	1.00
D	0.25	0.40
D1	-	*0.4
D2	-	*0.5
E	0.15	-
e	-	*2.20
H	0.00	0.10
J	0.089	0.18
K	2.30	2.70

*: Typical, Unit: mm

7..PACKING INFORAMTION



DIM	Min.	Max.
Ao	1.42	1.62
Bo	2.80	3.00
Ko	1.25	1.45
Po	3.90	4.10
P1	3.90	4.10
P2	1.95	2.05
T	0.24	0.27
E	1.65	1.85
F	3.45	3.55
Do	1.40	1.60
D1	0.75	1.25
W	7.90	8.30
G	-	*2.08
H	-	*1.07
I	-	*0.84
a1	-	5°
a2	-	8°

*: Typical, Unit: mm

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