

APPROVAL DRAWING

Surge Components product name
SES12VN1010-5 TR (RoHS compliant)

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Surge Components, Inc.

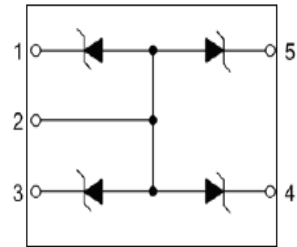
Customer Acknowledgement

Manufacturer Surge Components, Inc.
2009-05-06

1. DESCRIPTION

These integrated transient voltage suppressor devices (TVS) are designed for applications requiring transient overvoltage protection. They are intended to be used in sensitive equipment such as wireless headsets, PDAs, digital cameras, computers, printers, communication systems, medical equipment, and other applications.

Their integrated design provides very effective and reliable protection for four separate lines using only one package. These devices are ideal for situations where board space is at a premium.



2. FEATURE

- Solid-state silicon-avalanche technology
- DFN-5 package
- Uni-Directional or Bi-Directional protection
- protects up to four data lines
- 65 watts peak pulse power ($t_p = 8/20\mu s$)
- Low clamping factor
- Low leakage current
- Low capacitance
- Complies with the following standards:
IEC 61000-4-2(ESD) Air-15kv, Contact-8kv

3. APPLICATION

- Cellular and Portable Electronics
- Serial and parallel Ports
- Microprocessor Based Equipment
- Notebooks, Desktops, Servers

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse stand-off voltage	V_{RWM}				12	V
Reverse Breakdown voltage	V_{BR}	$I_T=1mA$			12.7	V
Reverse Leakage Current	I_R	$V_{RWM}=9V$ $T=25^\circ C$			0.5	μA
Junction Capacitance	C_J	$V_R=0V$ $f=1MHz$		6.5	10	pF
Junction Capacitance	C_J	$V_R=3.0V$ $f=1MHz$		3.5	5.0	pF

5. ABSOLUTE MAXIMUM RATING @25°C

Rating	Symbol	Value	Units
Peak Pulse Power($t_p=8/20\mu s$)	P_{PP}	65	W
ESD per IEC 61000-4-2 (Air)	V_{ESD}	15	kV
ESD per IEC 61000-4-2 (Contact)	V_{ESD}	8	kV
Lead Solid Temperature(10 seconds max)	T_L	260	$^\circ C$
Operating Temperature	T_j	-55 to +150	$^\circ C$
Storage Temperature	T_{STG}	-55 to +150	$^\circ C$

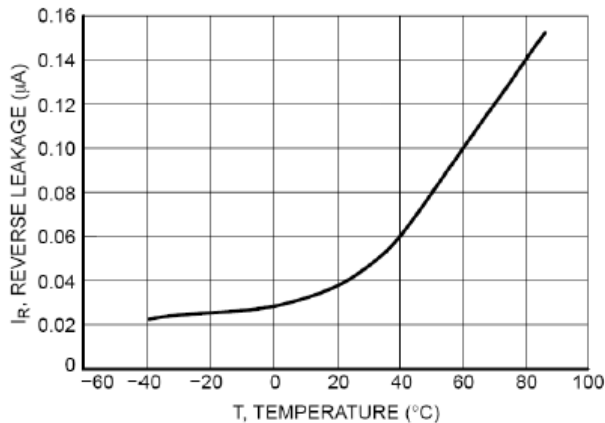
6. TYPICAL CHARACTERISTICS


Figure 1. Reverse Leakage versus Temperature

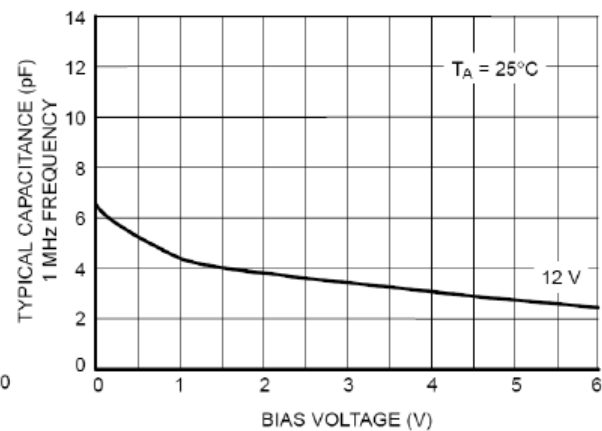


Figure 2. Capacitance

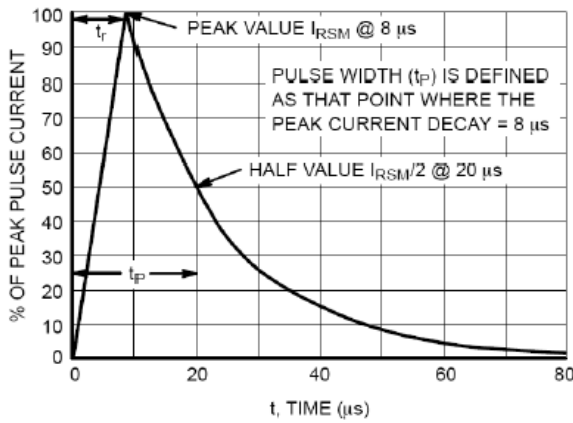


Figure 3. $8 \times 20 \mu\text{s}$ Pulse Waveform

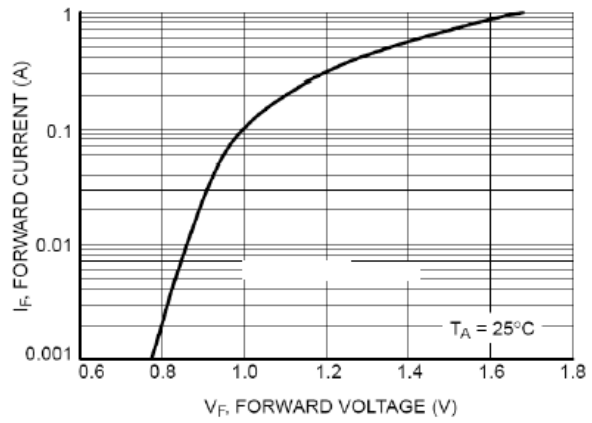
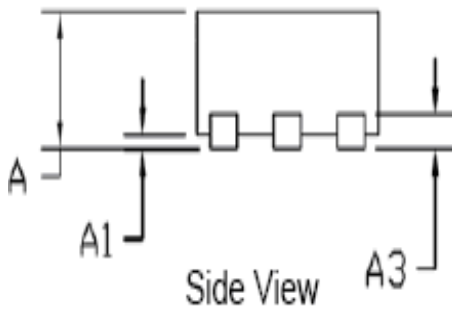
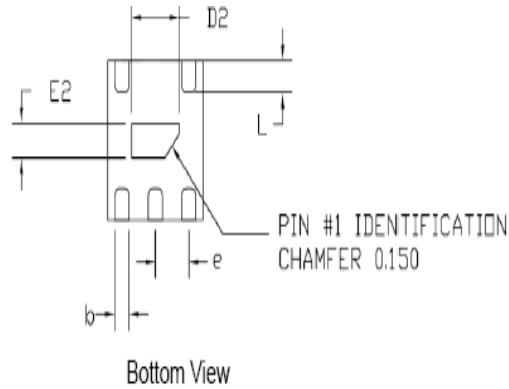
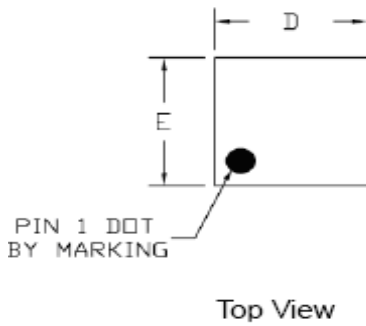


Figure 4. Forward Voltage

7. PRODUCT DIMENSION



Common Dimensions (mm)			
PKG	X1:Extrem thin		
Ref	Min	Nom	Max
A	0.40	-	0.50
A1	0.00	-	0.05
A3	0.125 Ref		
D	0.95	1.00	1.05
E	0.95	1.00	1.05
D2	0.45	0.50	0.55
E2	0.17	0.22	0.27
L	0.15	0.20	0.25
b	0.12	0.15	0.18
e	0.35 BSC		