

# ESDA6V8SO-AT

## Transient Voltage Suppressors for ESD Protection

### Description

The ESDA6V8SO-AT array is 5-Line ESD transient voltage suppressor which provides a very high level of protection for sensitive electronic components that may be subjected to electrostatic discharge (ESD). These devices clamp the voltage just above the logic level supply for positive transient, and to a diode drop below ground for negative transients.

The ESDA6V8SO-AT safely dissipates ESD strikes of  $\pm 20\text{kV}$ , exceeding the maximum requirement of the IEC 61000-4-2 international standard. Using the MILSTD-883 (Method 3015) specification for Human Body Model (HBM) ESD, the device provides protection for contact discharges to greater than  $\pm 20\text{kV}$ .

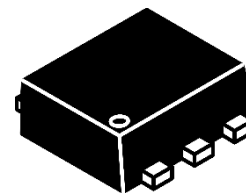
The ESDA6V8SO-AT is available in a SOT-563 package with working voltages of 5 V.

### Features

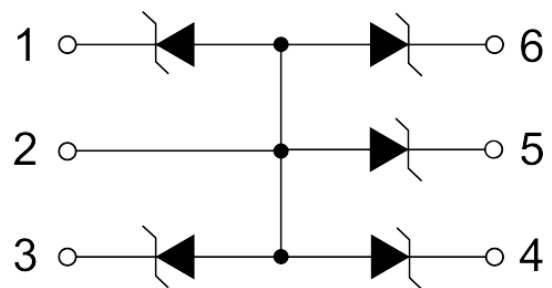
- ◆ Working Peak Reverse Voltage: 5 V
- ◆ Low Leakage current:  $<1\mu\text{A}@3\text{V}$
- ◆ High ESD protection Level:  $>20\text{kV}$  per HBM
- ◆ IEC61000-4-2 Level 4 ESD Protection
- ◆ IEC61000-4-4 Level 4 EFT Protection
- ◆ Five separate unidirectional configurations

### Mechanical

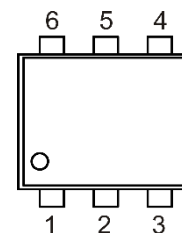
- ◆ Void Free, Transfer-Molded, Thermosetting Plastic Case
- ◆ Corrosion Resistant Finish, Easily Solderable
- ◆ Small Packaging



SOT-563



Schematic diagram



Pin assignment

### Applications

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

# ESDA6V8SO-AT

## ABSOLUTE MAXIMUM RATING

Rating	Symbol	Value	Units
Peak Pulse Power( $T_P=8/20\mu s$ )	$P_{PP}$	300	W
Maximum Peak Pulse Current( $T_P=8/20\mu s$ )	$I_{PP}$	20	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	$V_{PP}$	+/-20 +/-20	KV
Maximum lead temperature for soldering during 10s	$T_L$	260	°C
Storage Temperature Range	$T_{STG}$	-55 ~ +150	°C
Operating Temperature Range	$T_{OP}$	-55 ~ +150	°C

## ELECTRICAL PARAMETER

Symbol	Parameter
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Maximum Reverse Leakage Current @ $V_{RWM}$
$I_T$	Test Current
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$

## ELECTRICAL CHARACTERISTICS

( $T=25^\circ C$ , Device for 5.0V Working Peak Reverse Voltage)

Symbol	Conditions	Min.	Typ.	Max.	Unit
$I_R$	$V_{RWM}=5V$			0.5	$\mu A$
$V_F$	$I_F= -10mA$	-0.4	-0.8	-1.25	V
$V_{BR}$	$I_T=1mA$	6.2	6.8	7.2	V
$V_C$	$I_{PP}=1A, T_P = 8/20\mu s, \text{note1}$			10	V
	$I_{PP}=20A, T_P = 8/20\mu s, \text{note1}$			12.5	V
C	Pin1 to 2 $V_R = 0V, f = 1MHz$		50		pF

Note1: Surge current waveform per Figure 1.

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## RATINGS AND CHARACTERISTIC CURVES

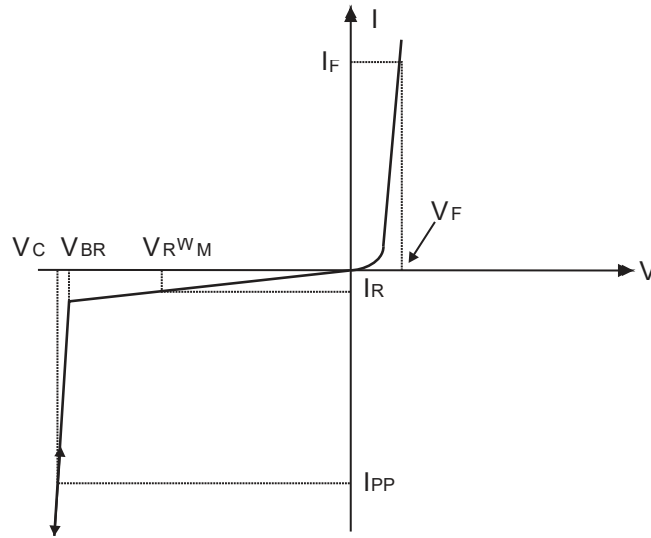


Figure 1. Pulse Waveform

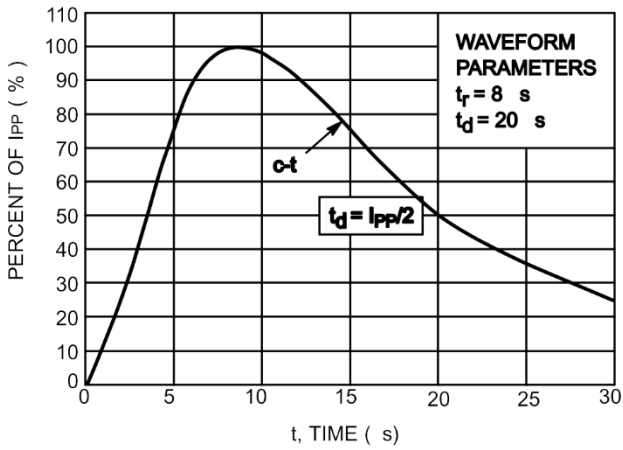


Figure 2. Power Derating Curve.

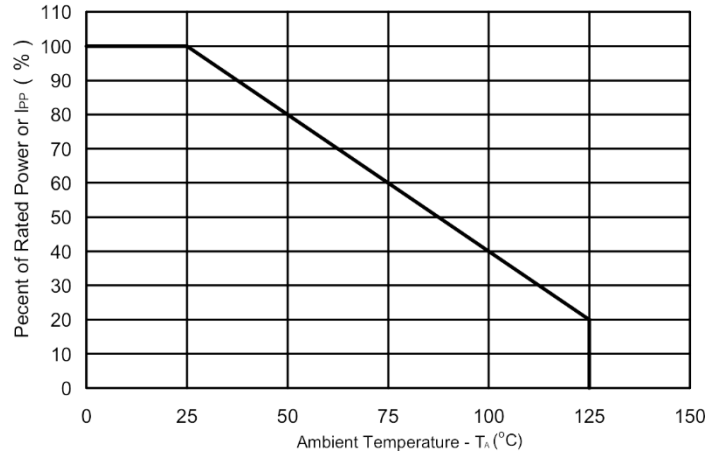


Figure 3. Non-Repetitive Peak Pulse Power

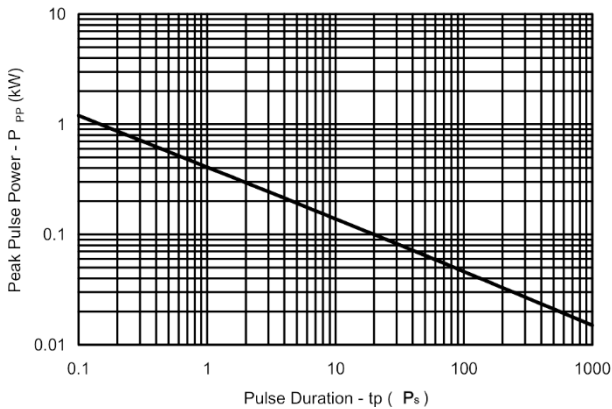
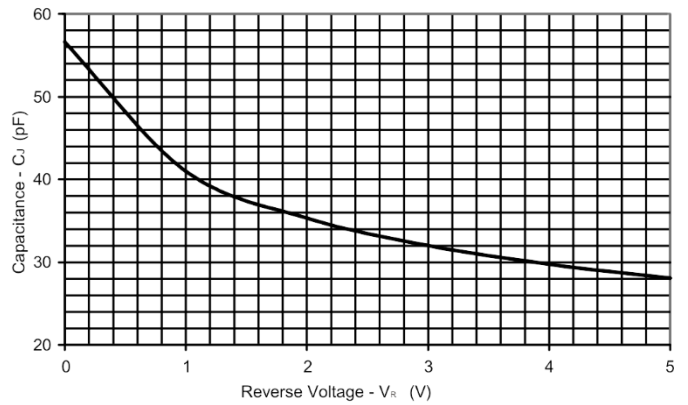


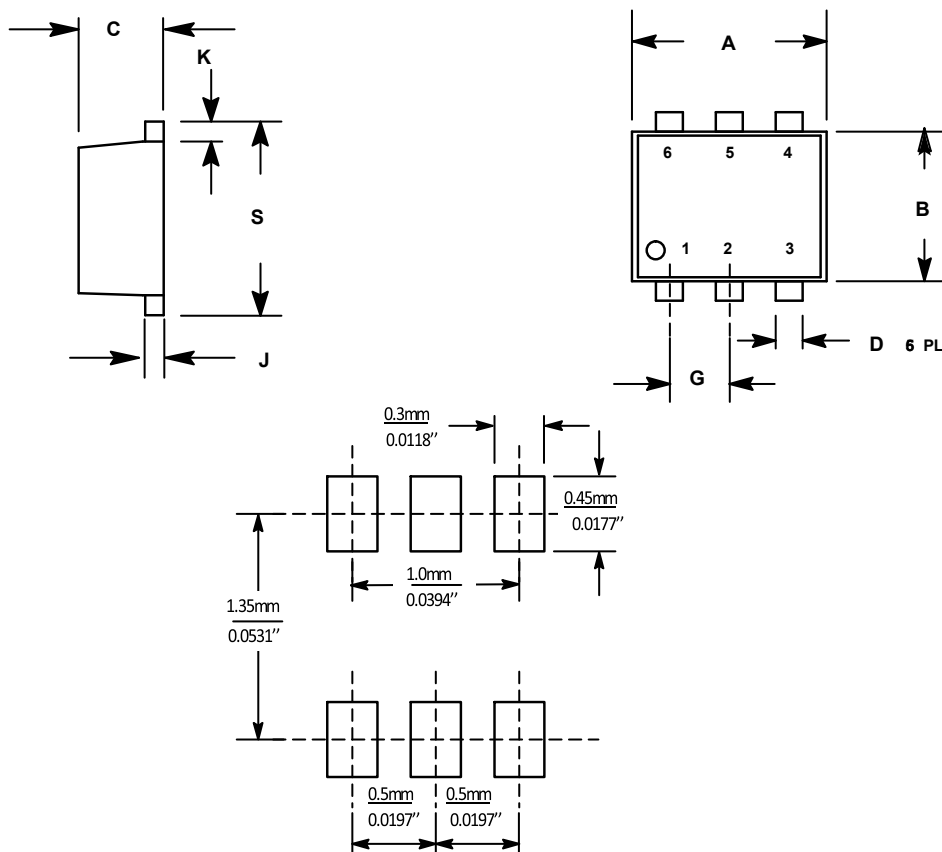
Figure 4. Junction Capacitance



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## PACKAGE OUTLINE

SOT-563



Soldering Footprint

### Mechanical Data

Dimensions	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.50	1.70	0.059	0.067
B	1.10	1.30	0.043	0.051
C	0.50	0.60	0.020	0.024
D	0.17	0.27	0.007	0.011
G	0.50 BSC		0.020 BSC	
J	0.08	0.18	0.003	0.007
K	0.10	0.30	0.004	0.012
S	1.50	1.70	0.059	0.067

### ORDERING INFORMATION

Device	Package	Shipping
ESDA6V8SO-AT	SOT-563	3000 Tape & Reel

Dated:11/2016  
Rev:2.0