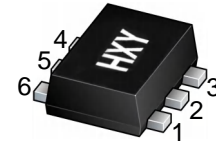




## Discription

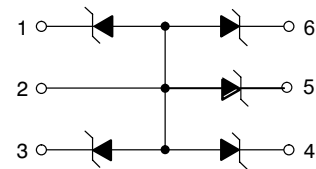
The ESDA6V8AV6 is a 5-channel ultra low capacitance rail clamp ESD protection diodes array. Each channel consists of a pair of ESD diodes that steer positive or negative ESD current to either the positive or negative rail. A zener diode is integrated in to the array between the positive and negative supply rails. In the typical applications, the negative rail pin (assigned as GND) is connected with system ground. The Positive ESD current is steered to the ground through an ESD diode and Zener diode and the positive ESD voltage is clamped to the zener voltage.



SOT-563

## FEATURES

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



Circuit Diagram

## Ordering information

Product ID	Pack	Qty(PCS)
ESDA6V8AV6	SOT-563	3000

## Absolute Ratings ( $T_{amb}=25^{\circ}\text{C}$ )

Characteristics	Symbol	Ratings	Unit
Peak Pulse Power(8/20 $\mu\text{s}$ )	$P_{PP}$	20	W
Peak Pulse Current(8/20 $\mu\text{s}$ )	$I_{PP}$	1.6	A
ESD per IEC 61000-4-2(Air)	$V_{ESD1}$	$\pm 20\text{kV}$	kV
ESD per IEC 61000-4-2(Contact)	$V_{ESD2}$	$\pm 16\text{kV}$	kV
Operating Temperature Range	$T_{opr}$	-55 ~ +125	$^{\circ}\text{C}$
Storage Temperature Range	$T_{stg}$	-55 ~ +150	$^{\circ}\text{C}$



**Electrical characteristics ( $T_A=25^\circ\text{C}$ , unless otherwise noted)**

	Conditions	Minimum	Typical	Maximum	Unit
$I_R$	$V_{RWM}=5V$			0.5	$\mu\text{A}$
$V_F$	$I_F=-10\text{mA}$	-0.4	-0.8	-1.25	V
$V_{BR}$	$I_T=1\text{mA}$	6.2	6.8	7.2	V
$V_C$	$I_{PP}=1\text{A}$ , $t_p = 8/20\mu\text{s}$ , note1			12	V
	$I_{PP}=1.6\text{A}$ , $t_p = 8/20\mu\text{s}$ , note1			14.4	V
C	Pin1 to 2 $V_R = 0V$ , $f = 1\text{MHz}$		9		pF

Note1: Surge current waveform per Figure 1.

**Typical Characteristics**

Figure 1. Pulse Waveform

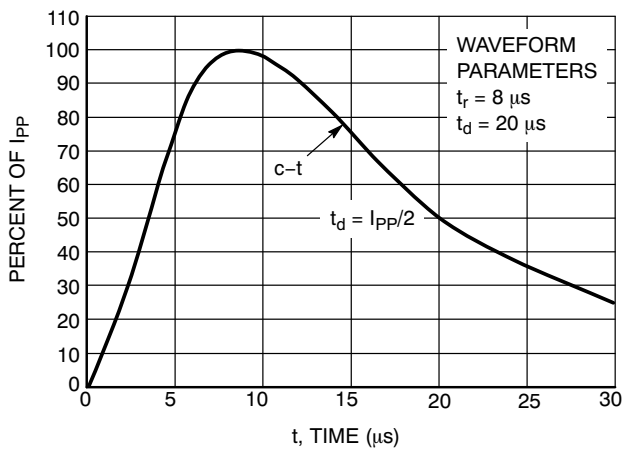


Figure 2. Power Derating Curve

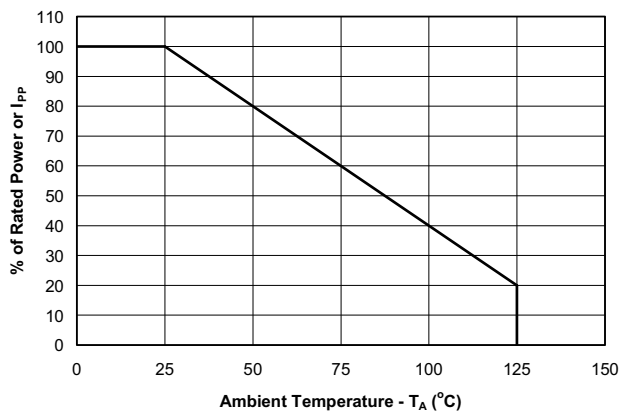


Figure 3. Non-Repetitive Peak Pulse Power vs. Pulse Time

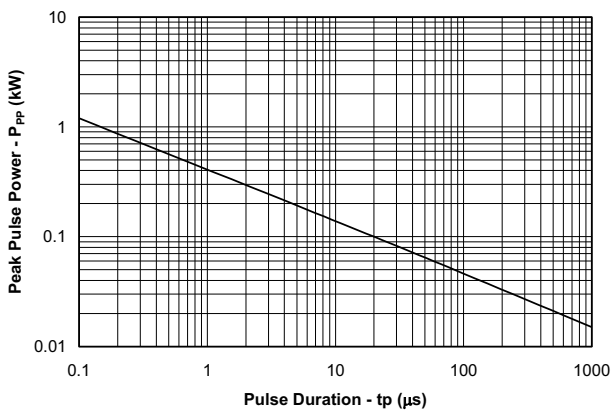
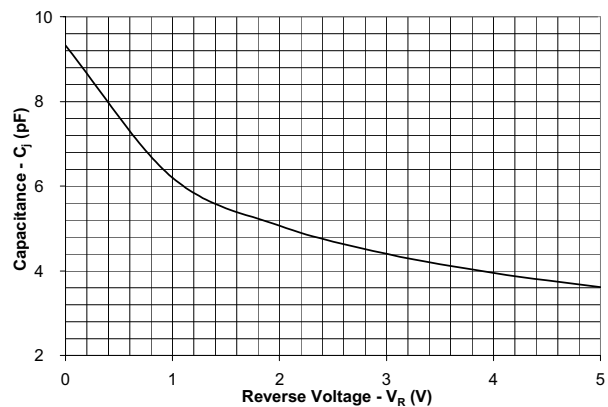
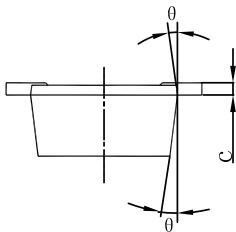
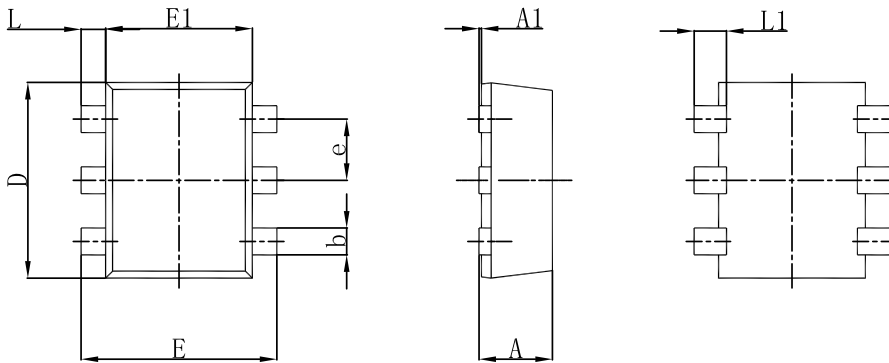


Figure 4. Junction Capacitance vs. Reverse Voltage



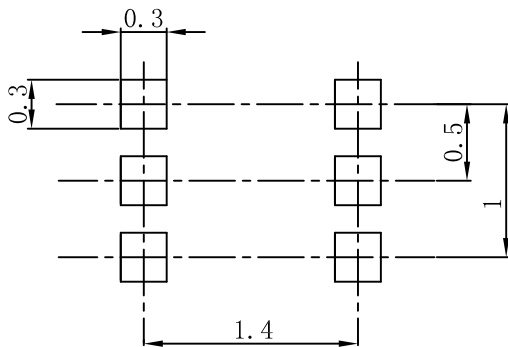


### SOT-563 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.525	0.600	0.021	0.024
A1	0.000	0.050	0.000	0.002
e	0.450	0.550	0.018	0.022
c	0.090	0.160	0.004	0.006
D	1.500	1.700	0.059	0.067
b	0.170	0.270	0.007	0.011
E1	1.100	1.300	0.043	0.051
E	1.500	1.700	0.059	0.067
L	0.100	0.300	0.004	0.012
L1	0.200	0.400	0.008	0.016
θ	7 °REF.		7 °REF.	

### SOT-563 Suggested Pad Layout



**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.



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