



### Discription

The HDESD5V0U1BB-7 protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events. Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD. It gives designer the flexibility to protect one bi-directional line in applications where arrays are not practical.



SOD-523

### Features

- ★ Small Body Outline Dimensions
- ★ Low Body Height
- ★ Peak Power up to 90 Watts @ 8 x 20  $\mu$ s Pulse
- ★ Low Leakage current
- ★ Response Time is Typically < 1 ns
- ★ ESD Rating of Class 3 (> 16 kV) per Human Body Model
- ★ IEC61000-4-2 Level 4 ESD Protection
- ★ IEC61000-4-4 Level 4 EFT Protection



Circuit Diagram

### Ordering information

Product ID	Pack	Qty(PCS)
HDESD5V0U1BB-7	SOD-523	3000

### Absolute Ratings(Tamb = 25°C)

Symbol	Parameter	Value	Units
P <sub>PP</sub>	Peak Pulse Power (t <sub>p</sub> = 8/20 $\mu$ s)	90	W
T <sub>L</sub>	Maximum lead temperature for soldering during 10s	260	°C
T <sub>stg</sub>	Storage Temperature Range	-55 to +155	°C
T <sub>op</sub>	Operating Temperature Range	-40 to +125	°C
T <sub>j</sub>	Maximum junction temperature	150	°C
	IEC61000-4-2 (ESD) air discharge	$\pm 15$	KV
	IEC61000-4-4 (EFT) contact discharge	$\pm 8$	KV
	IEC61000-4-4 (EFT)	40	A
	ESD Voltage Per Human Body Model	16	KV



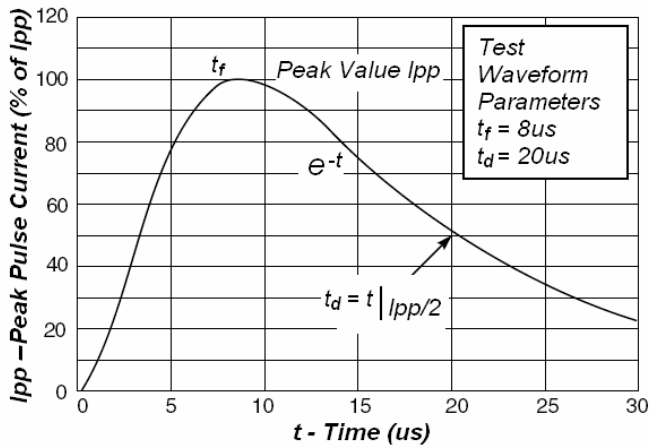
**Electrical Characteristics** Ratings at 25°C ambient temperature unless otherwise specified. VF = 0.9V at IF = 10mA

Device	V <sub>RWM</sub> (V)	I <sub>R</sub> (uA) @ V <sub>RWM</sub>	V <sub>BR</sub> (V)@ I <sub>T</sub> (Note 1)		I <sub>T</sub>	V <sub>C</sub> (V) @ I <sub>pp</sub> =5 A*	V <sub>C</sub> (V) @ Max I <sub>pp</sub> *	I <sub>pp</sub> (A)*	P <sub>PK</sub> (W)*	C (pF)
	Max	Max	Min	Max	mA	Typ	Max	Max	Max	Typ
HDESD5V0U1BB-7	5.0	1	5.6	7.8	1.0	11.6	18.6	9	100	15

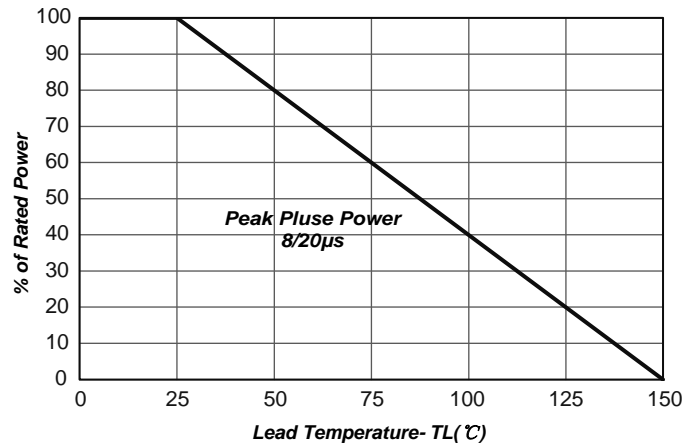
\*Surge current waveform per Figure 1.

- V<sub>BR</sub> is measured with a pluse test current I<sub>T</sub> at an ambient temperature of 25°C.

**Typical Characteristics**



**Fig1. Pulse Waveform**



**Fig2. Power Derating**



## Outline And Dimensions



### Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.50	0.60	0.70	0.020	0.024	0.028
b	0.25	0.30	0.35	0.010	0.012	0.014
c	0.07	0.14	0.20	0.003	0.006	0.008
D	1.10	1.20	1.30	0.043	0.047	0.051
E	0.70	0.80	0.90	0.028	0.031	0.035
H <sub>E</sub>	1.50	1.60	1.70	0.059	0.063	0.067
L	0.30 REF			0.012 REF		
L <sub>2</sub>	0.15	0.20	0.25	0.006	0.008	0.010

## Soldering Footprint





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