HESD56151W04-2/TR
ESD PROTECTION DIODE

Discription

The HESD56151W04-2/TR 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-323

Features

- ★ Transient protection for high-speed data lines
  IEC 61000-4-2(ESD) ±30kV (Contact)
  ±30kV (Air)
  IEC 61000-4-4(EFT) 40A (5/50 ns)
- ★ Peak power dissipation: 3200W (8/20us)
- ★ Working voltages : 4.5V
- ★ Protects one Vcc or data line
- ★ Low clamping voltage
- ★ Low leakage current

Circuit Diagram

Orderingin formation

Product ID	Pack	Qty(PCS)
HESD56151W04-2/TR	SOD-323	3000

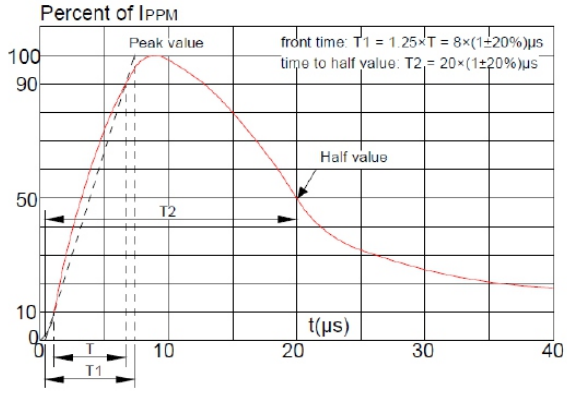
Absolute Ratings(Tamb = 25°C)

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power (t_p = 8/20 μ s)	3200	W
T_L	Maximum lead temperature for soldering during 10s	260	°C
T_{stg}	Storage Temperature Range	-55 to +155	°C
T_{op}	Operating Temperature Range	-40 to +125	°C
T_j	Maximum junction temperature	150	°C
	IEC61000-4-2 (ESD) air discharge contact discharge	±30 ±30	KV
	IEC61000-4-4 (EFT)	40	A

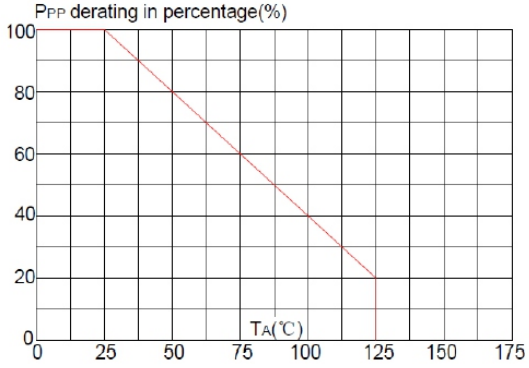
Electrical Characteristics

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage				4.5	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1mA	4.6	5.2	6.4	V
I_R	Reverse Leakage Current	V_{RWM} = 4.5V			1	μA
V_C	Clamping Voltage	I_{RWM} = 50A, t_p = 8/20μs			11	V
		I_{RWM} = 160A, t_p = 8/20μs			20	V
C_J	Junction Capacitance	V_R = 0V, f = 1MHz		300	500	pF

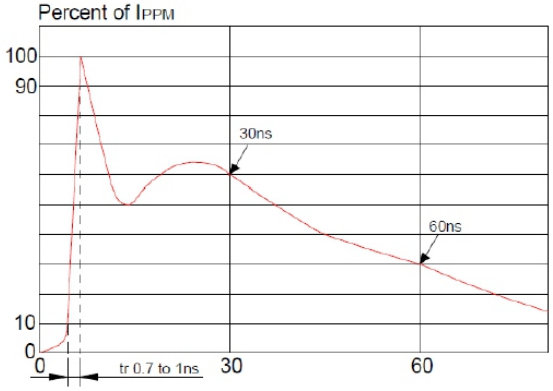
Typical Characteristics



Pulse Waveform (8/20us)

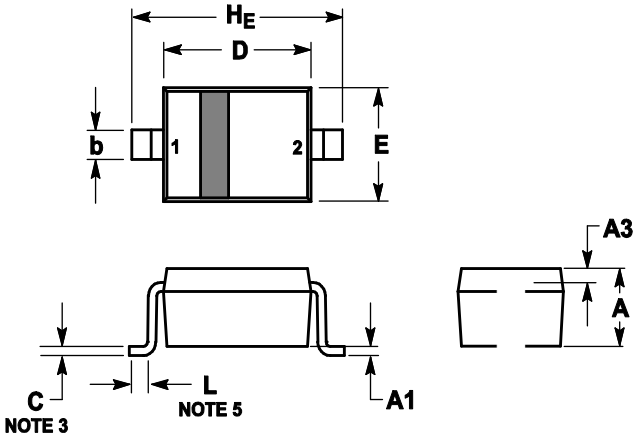


Pulse Derating Curve



ESD Clamping(8kV Contact Discharge)

Outline And Dimensions

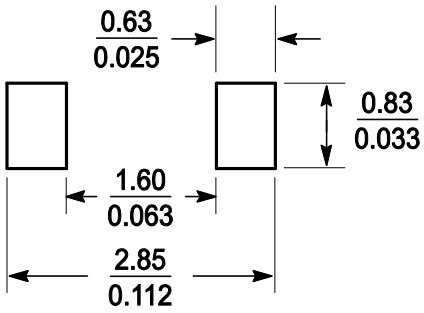


Notes:

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	0.8	0.9	1	0.031	0.035	0.04
A1	0	0.05	0.1	0	0.002	0.004
A3	0.15REF			0.006REF		
b	0.25	0.32	0.4	0.01	0.012	0.016
C	0.089	0.12	0.177	0.003	0.005	0.007
D	1.6	1.7	1.8	0.062	0.066	0.07
E	1.15	1.25	1.35	0.045	0.049	0.053
L	0.08			0.003		
H_E	2.3	2.5	2.7	0.09	0.098	0.105

Soledering Footprint



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