ESD3V3D8BT

Description

The ESD3V3D8BT is a bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data lines. The ESD3V3D8BT complies with the IEC61000-4-2 (ESD)standard with ±30kV air and ±30kV contact discharge. It is assembled into an ultra-small 1.0x0.6x0.5mm lead-free DFN package.

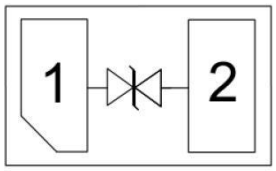
Feature

- Ultra small package: 1.0x0.6x0.5mm
- Ultra low capacitance: 25pF typical
- Ultra low leakage: nA level
- Low operating voltage: 3.3V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity
    - testAir discharge: ±30kV
    - Contact discharge: ±30kV
  - IEC61000-4-5 (Lightning) 8A (8/20μs)
- RoHS Compliant

Applications

- Cellular phones
- Portable devices
- Digital cameras
- Power supplies

Circuit Diagram



Absolute Maximum Ratings

Tamb=25°C unless otherwise specified

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppp	200	W
Maximum Reverse Peak Pulse Current	I_{PP} *1	8	A
ESD per IEC 61000−4−2 (Air)	V_{ESD}	±30	KV
ESD per IEC 61000−4−2 (Contact)		±30	
Storage Temperature Range	T_{STJ}	-55to+150	℃
Operating Temperature Range	T_J	-55to+125	℃

Electrical Characteristics

TA=25°C unless otherwise specified

Symbol	Parameter	Conditions	Min	Typ	Max	Units
V_{RWM}	Reverse Working Peak Voltage	-			3.3	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1mA	4			V
I_R	Reverse Current	V_{RWM} = 3.3V			0.5	μA
V_C	Clamping Voltage	I_{PP}=1A, tP =8/20μs			12	V
V_C	Clamping Voltage	I_{PP}=8A, tP =8/20μs		8	12	V
C_D	Diode Capacitance	V_R = 0V, f = 1MHz		15	25	pF

Rating & Characteristic Curves

Figure 1 - Electrical Parameter

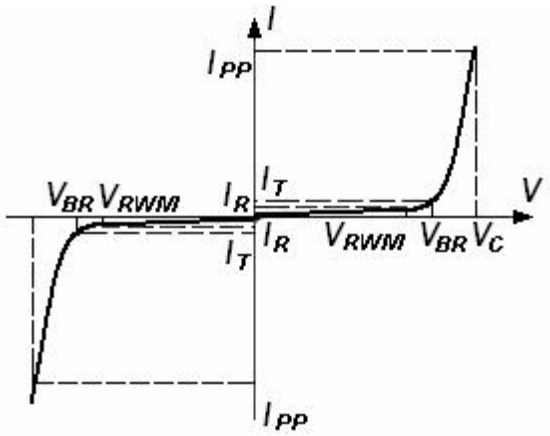


Figure 2- Pulse Waveform

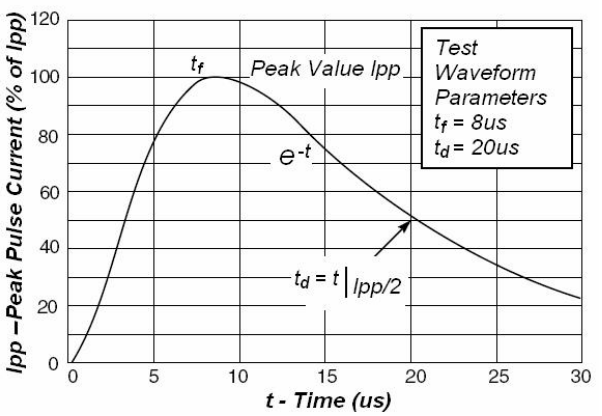
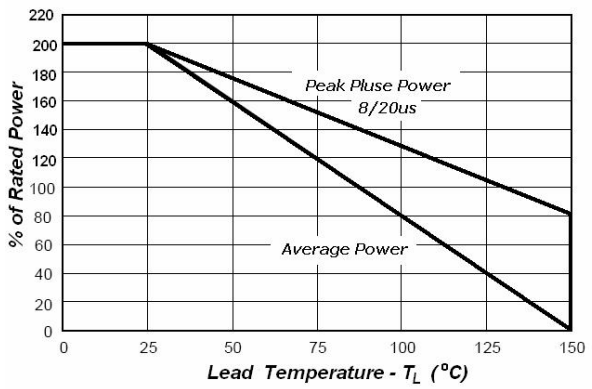
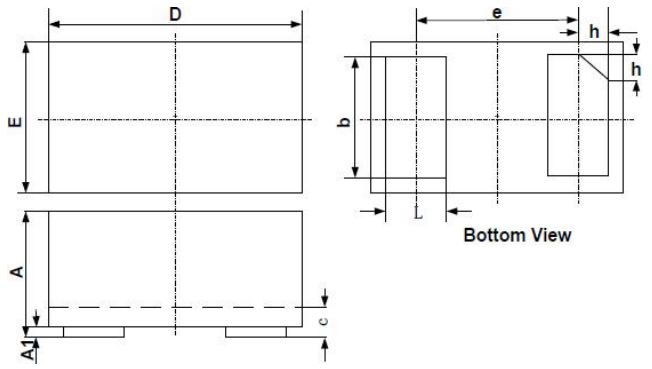


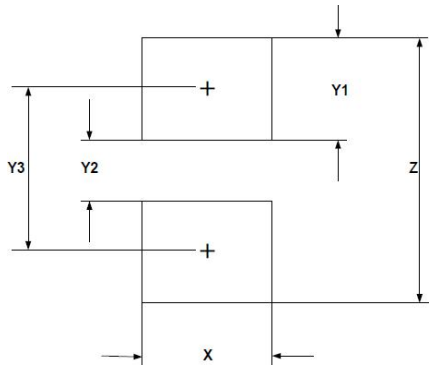
Figure 3- Power Derating Curve



DFN1006-2 Package Outline & Dimensions



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.45	0.50	0.55	0.018	0.020	0.022
c	0.12	0.15	0.18	0.005	0.006	0.007
D	0.95	1.00	1.05	0.037	0.039	0.041
e	0.65 BSC			0.026 BSC		
E	0.55	0.60	0.65	0.022	0.024	0.026
L	0.20	0.25	0.30	0.008	0.010	0.012
h	0.07	0.12	0.17	0.003	0.005	0.007



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.60	0.024
Y1	0.50	0.020
Y2	0.30	0.012
Y3	0.80	0.032
Z	1.30	0.052

Disclaimer

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.