TPESD2USB3UX-TR

Low Capactionce 2-Line Uni-directional TVS Diode

WWW.TECHPUBLIC.COM

Features

- Ultra low capacitance: 0.35pF 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 test
  Air discharge: ±20kV
  Contact discharge: ±15kV
- – IEC61000-4-5 (Lightning)4A (8/20 μs)
- RoHS Compliant
- Lead Finish: NiPdAu

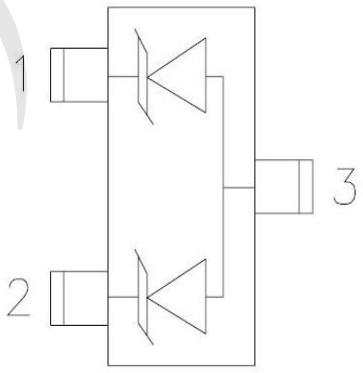
Mechanical Characteristics

- Package: SOT23-3
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below

Applications

- Automotive A/V monitors, display and cameras
- USB2.0, HDMI, DisplayPort
- eSATA and LVDS

Dimensions and Pin Configuration



Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	100	W
Peak Pulse Current (8/20μs)	I_{PP}	4	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	± 20 ± 15	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			3.3	V	
Breakdown Voltage	V_{BR}	4.2			V	I_T = 1mA
Reverse Leakage Current	I_R			0.5	μA	V_{RWM} = 3.3V
Forward Voltage	V_F		0.8	1.2	V	I_F = 10mA
Clamping Voltage	V_C			10	V	I_{PP} = 1A (8 x 20μs pulse)
Clamping Voltage	V_C			15	V	I_{PP} = 4 A (8 x 20μs pulse)
Junction Capacitance	C_J			0.7	pF	VR=0, f=1MHz，Pin 1 to Pin 3 or Pin 2 to Pin 3
Junction Capacitance	C_J		0.35		pF	VR=0, f=1MHz，Pin 1 to Pin 2

Typical Performance Characteristics (T_A=25°C unless otherwise Specified)

Fig1. 8/20μs Pulse Waveform

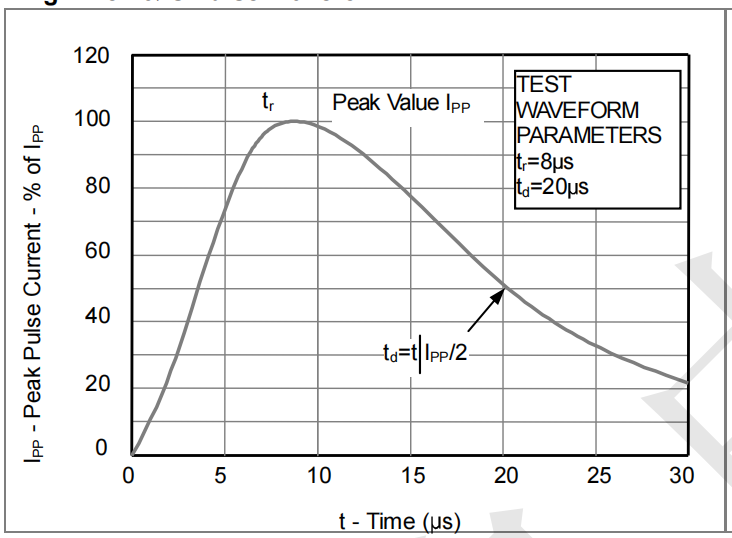


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

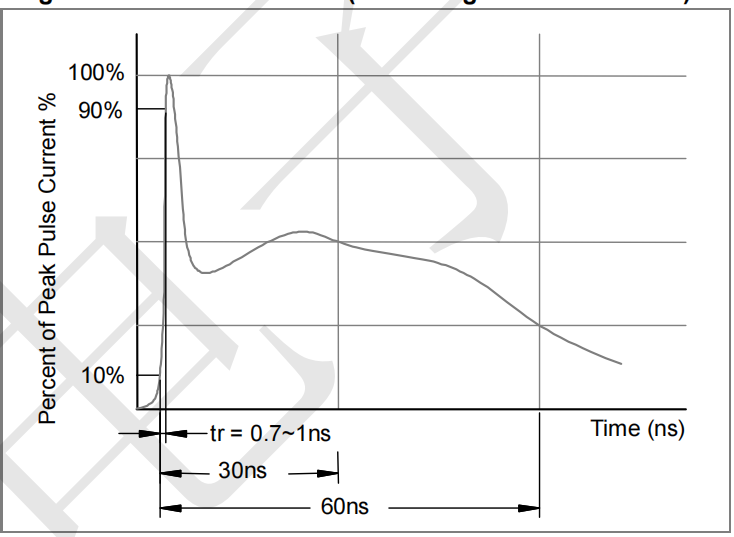
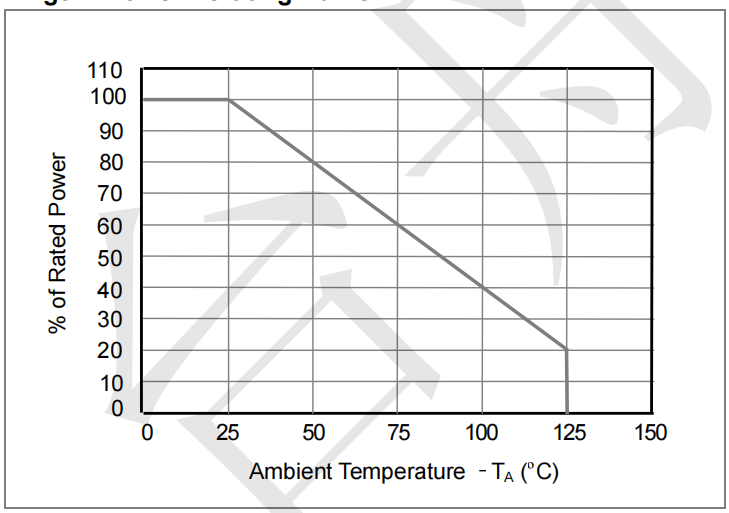
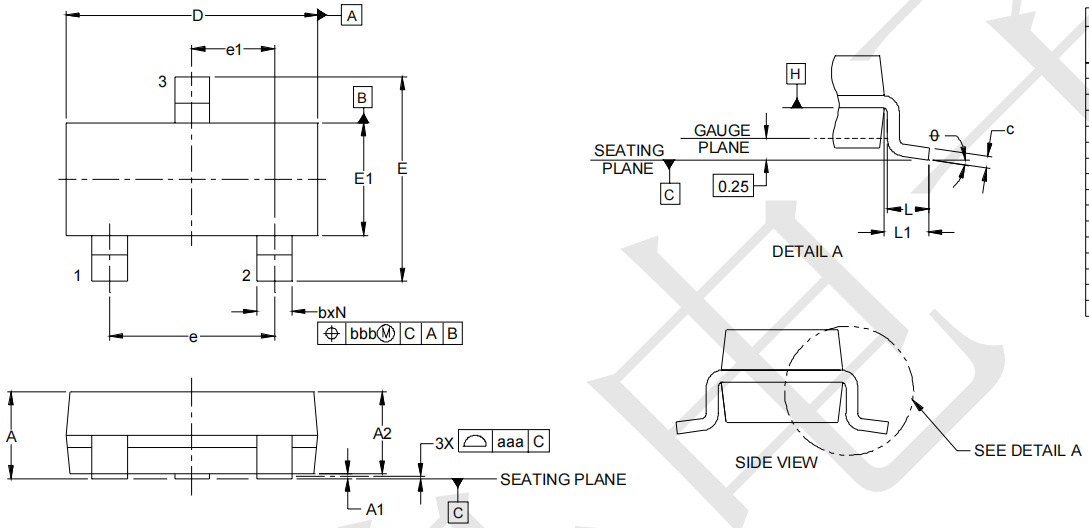


Fig3. Power Derating Curve

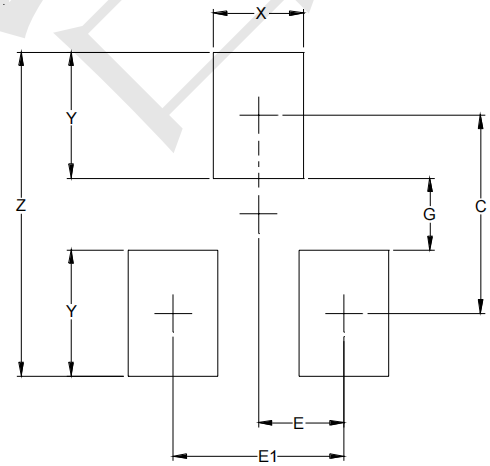


Outline Drawing - SOT23



DIM	DIMENSIONS					
	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	.035	-	.044	0.89	-	1.12
A1	.000	-	.004	0.01	-	0.10
A2	.035	.037	.040	0.88	0.95	1.02
b	.012	-	.020	0.30	-	0.51
c	.003	-	.007	0.08	-	0.18
D	.110	.114	.120	2.80	2.90	3.04
E	.082	.093	.104	2.10	2.37	2.64
E1	.047	.051	.055	1.20	1.30	1.40
e	.075			1.90 BSC		
e1	.037			0.95 BSC		
L	.015	.020	.024	0.40	0.50	0.60
L1	.022			(0.55)		
N	3			3		
θ	0°	-	8°	0°	-	8°
aaa	.004			0.10		
bbb	.008			0.20		

Land Pattern - SOT23



DIMENSIONS		
DIM	INCHES	MILLIMETERS
C	(.087)	(2.20)
E	.037	0.95
E1	.075	1.90
G	.031	0.80
X	.039	1.00
Y	.055	1.40
Z	.141	3.60

Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

TECH PUBLIC:

TPESD05R4UD BZT52C6V2S TPSTM1001SWX6F BV03CWT LM337BD2TR4G-TP TP3722S8 TPNTD20P06LT4G XC6219B332MR XP202A0003PR-TP DDTA143ZCA IRF5802TRPBF-TP PESD5V0F1BSF-TP TPAX809SS3 TPAX811MS4 TPD2E2U06DRLR-TP TPDMG6602SVT 0402ESDA-18N-TP BZX84C16 FDN335N SS510F TPESDA17P100-1U2M TPMCP112T-290E/TT SS56C TPESD0504S6-A TPESD0512S4-A PNTK3139PT5G QM3003J-TP SIL2324A-TP SMAJ13CA TPESD0402G08V