BORN SEMICONDUCTOR

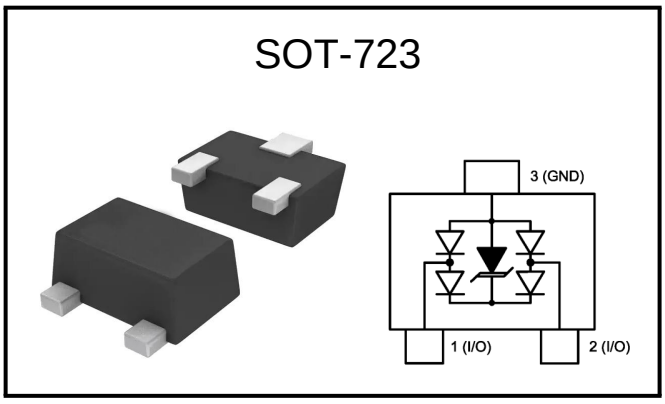
TPD2EUSB30ADRTR-N

ESD Protection Diode

Features

- 56W Peak pulse power per line (tp = 8/20μs)
- Unidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- IEC 61000-4-2 ±20kV contact ; ±25kV air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 4A(8/20μs)

Package



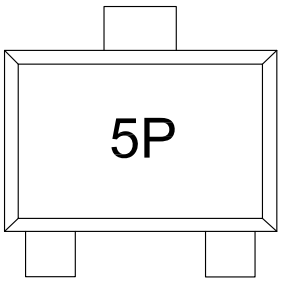
Applications

- Digital TV
- Set-top box and Digital TV
- Mobile Phones and Accessories
- Cellular Handsets and Accessories

Mechanical Characteristics

- SOT-723 package
- UL Flammability Classification Rating 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

Marking



Ordering information

Order code	Package	Base qty	Delivery mode
TPD2EUSB30ADRTR-N	SOT-723	10K	Tape and reel

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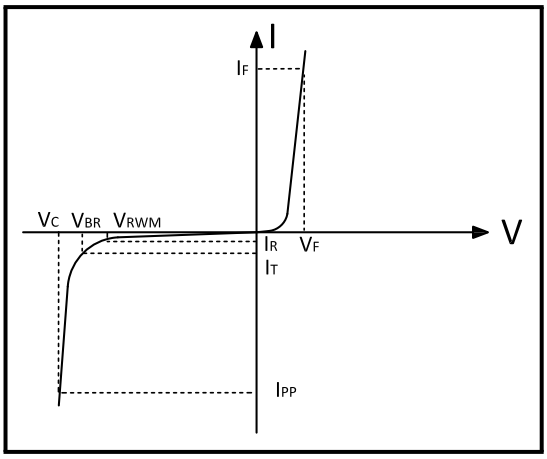
Revision: 2022-Jan-1-A

TPD2EUSB30ADRTR-N

ESD Protection Diode

Electrical Parameters (T_A = 25°C unless otherwise noted)

Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}



Absolute Maximum Rating

Rating	Symber	Value	Units
Peak Pulse Power (tp =8/20μs)	P_{PP}	56	Watts
Peak Pulse Current (tp =8/20μs)	I_{PP}	4	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	25 20	KV
Lead Soldering Temperature	T_L	260(10seconds)	°C
Junction Temperature	T_J	-55 to + 150	°C
Storage Temperature	T_{stg}	-55 to + 150	°C

Electrical Characteristics

Parameter	Symber	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V_{RWM}	–	–	–	5	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	6.0	–	–	V
Reverse Leakage Current	I_R	V_{RWM}=5V	–	–	0.1	uA
Peak Pulse Current	I_{PP}	tp =8/20us	–	–	4	A
Clamping Voltage	V_C	I_{PP}=4A, tp =8/20us	–	12	14	V
Junction Capacitance	C_O	V_{DC}=0V,f=1MHZ(IO to IO)	–	0.25	0.35	pF
Junction Capacitance	C_j	V_{DC}=0V,f=1MHZ(IO to GND)	–	0.45	0.6	pF

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TPD2EUSB30ADRTR-N

ESD Protection Diode

Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

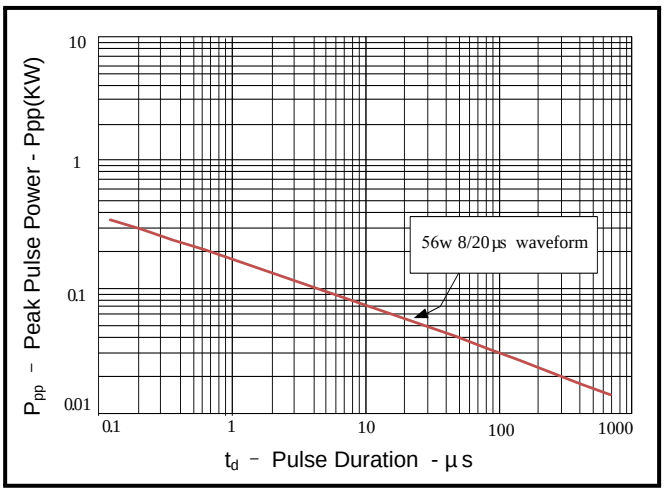


Figure 2: Power Derating Curve

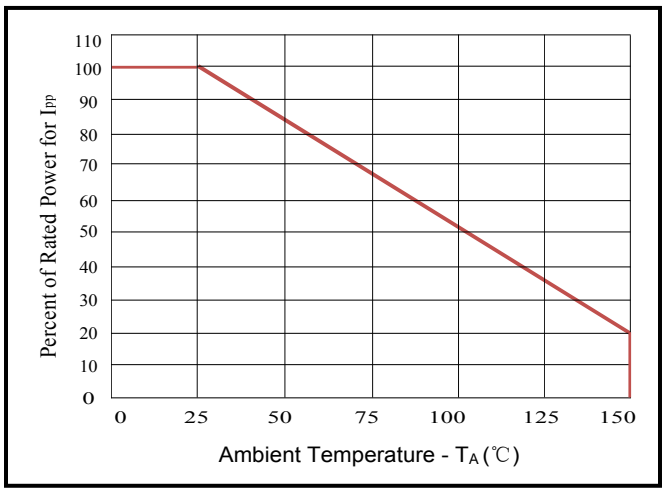


Figure 3: Pulse Waveform

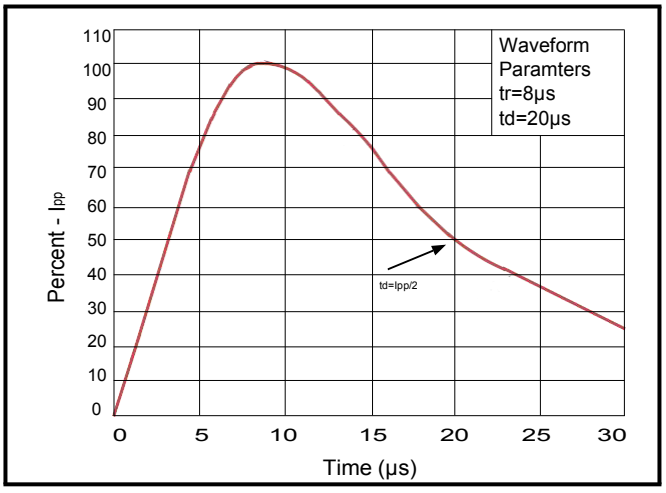
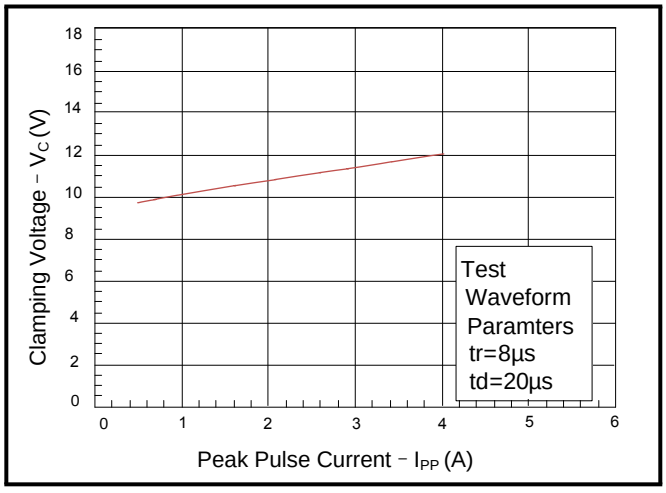


Figure 4: Clamping Voltage vs. I_{PP}



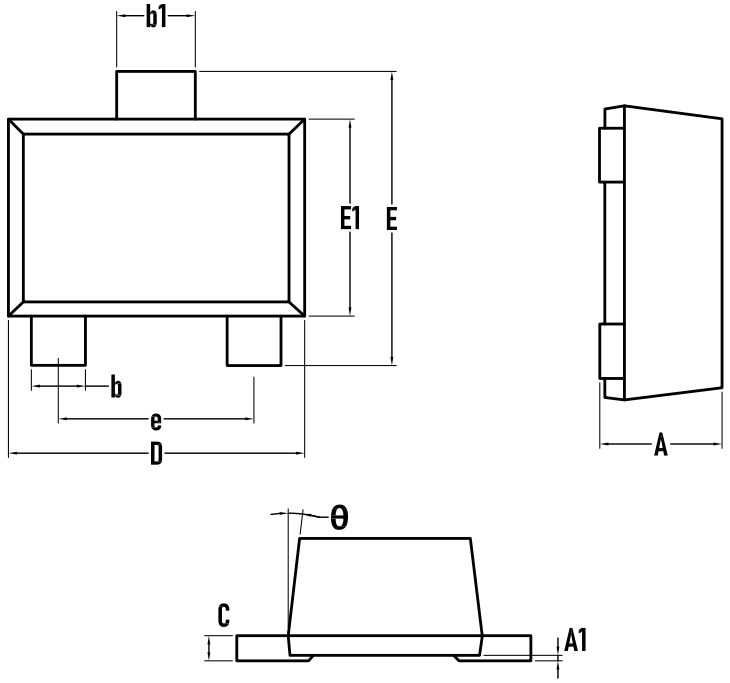
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TPD2EUSB30ADRTR-N

ESD Protection Diode

Outline Drawing – SOT-723



SYMBOL	MILLIMETER		
	MIN.	Typ.	MAX.
A	0.350	–	0.490
A1	0.000	–	0.100
b	0.170	0.220	0.270
b1	0.225	–	0.370
C	0.080	0.110	0.150
D	1.150	1.200	1.250
E	1.150	1.200	1.250
E1	0.750	–	0.850
e	0.800TYP.		
θ	0°	–	7°

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