

Features

150Watts peak pulse power ($t_p = 8/20\mu s$)
 Tiny SOT143 package
 Bidirectional configurations
 Solid-state silicon-avalanche technology
 Low clamping voltage
 Low leakage current
 Low capacitance ($C_j = 30pF$ typ I/O to I/O.)
 Protection one data/power line to:
 IEC 61000-4-2 $\pm 8kV$ contact $\pm 15kV$ air
 IEC 61000-4-4 (EFT) 40A (5/50ns)
 IEC 61000-4-5 (Lightning) 10A (8/20 μs)

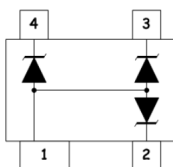
Applications

USB2.0,
 Ethernet
 Notebooks, Desktops, and Servers
 Video Line Protection

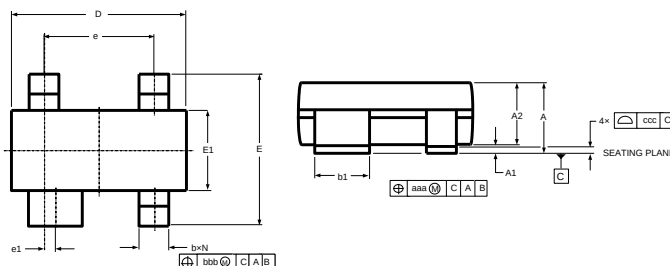
Mechanical Data

SOT143 package
 Molding compound flammability rating: UL 94V-0
 Packaging: Tape and Reel
 RoHS/WEEE Compliant

Schematic & PIN Configuration



SOT-143



DIMENSIONS				
SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
b1	0.750	0.900	0.030	0.035
D	2.800	3.000	0.110	0.118
e	1.800	2.000	0.071	0.079
e1	0.200TYP		0.008TYP	
E	2.250	2.550	0.089	0.100
E1	1.200	1.400	0.047	0.055
θ	0°	8°	0°	8°
aaa	.006		0.15	
bbb	.008		0.20	
ccc	.004		0.10	

Dimensions in inches and (millimeters)

Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p = 8/20\mu s$)	P_{PP}	150	Watts
Peak Pulse Current ($t_p = 8/20\mu s$) (note1)	I_{pp}	10	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	15 8	kV
Lead Soldering Temperature	T_L	260(10seconds)	°C
Junction Temperature	T_J	-55 to + 125	°C
Storage Temperature	T_{stg}	-55 to + 125	°C

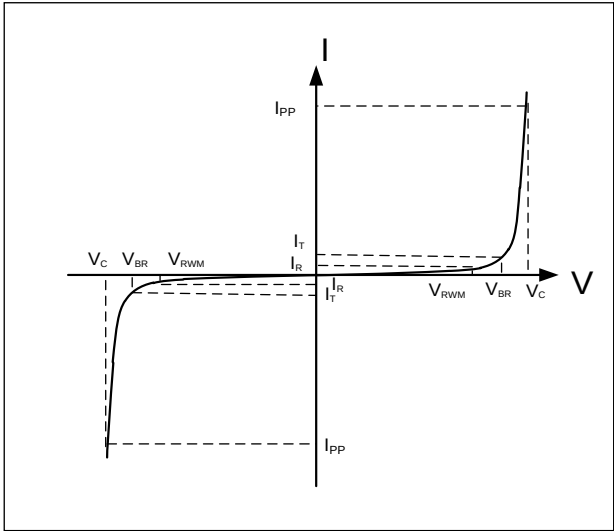
SP0503B

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

Part Number	Device Marking	VRWM (V)	VBR (V)	IT (mA)	VC @1A	VC		IR μ A (Max)	C (Pf) (Typ.)
						(Max)	(@A)		
SP0503B	503B	5	6	1	10	15	10	1	30

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

Symbol	Parameter
IPP	Maximum Reverse Peak Pulse Current
VC	Clamping Voltage @ IPP
VRWM	Working Peak Reverse Voltage
IR	Maximum Reverse Leakage Current @ VRWM
VBR	Breakdown Voltage @ IT
IT	Test Current



Note: 8/20 μ s pulse waveform.

RATING AND CHARACTERISTIC CURVES (SP0503B)

Figure 1: Peak Pulse Power vs. Pulse Time

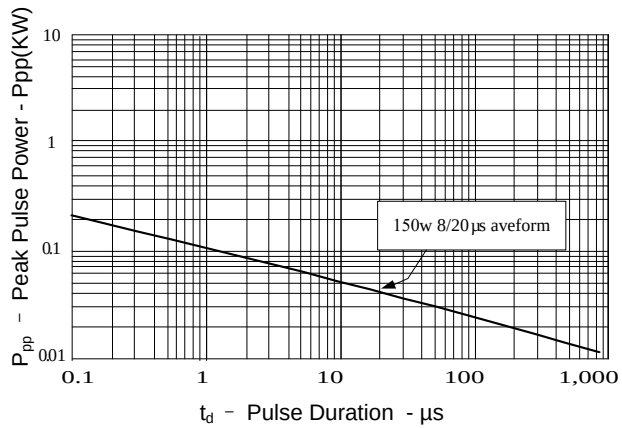


Figure 2: Power Derating Curve

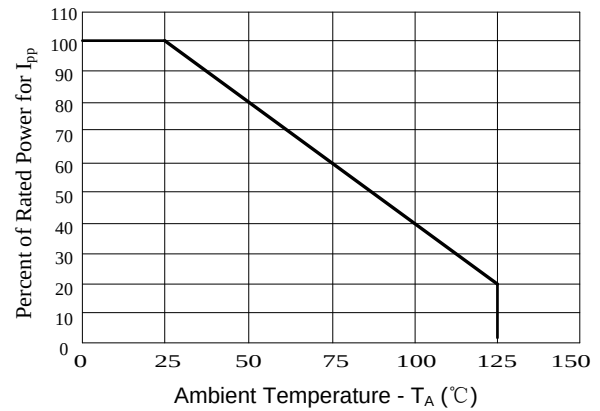


Figure3: Pulse Waveform

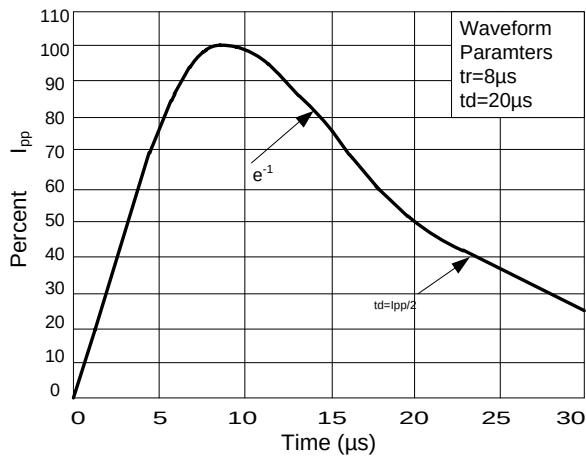


Figure 4: Clamping Voltage vs. Ipp

