

Features

- ◆ Ultra low capacitance: 0.3pF typical
- ◆ Ultra low leakage: nA level
- ◆ Operating voltage: 5V
- ◆ Low clamping voltage
- ◆ 4-pin SOT-143 package
- ◆ Protects two data lines and one power line
- ◆ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 30\text{kV}$
Contact discharge: $\pm 25\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 3A (8/20 μs)
- ◆ RoHS Compliant

Ordering Information

Part Number	Qty per Reel	Reel Size
TPESD0502S4	3000	7"

Mechanical Characteristics

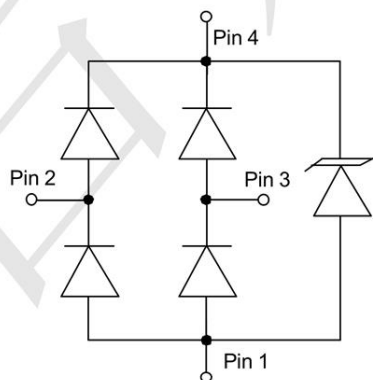
- ◆ Package: SOT-143
- ◆ Lead Finish: Matte Tin
- ◆ Case Material: "Green" Molding Compound.
- ◆ UL Flammability Classification Rating 94V-0
- ◆ Moisture Sensitivity: Level 3 per J-STD-020



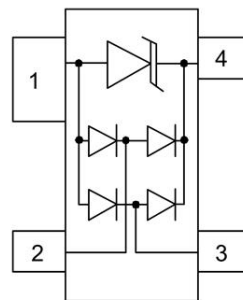
Applications

- ◆ Cellular Handsets and Accessories
- ◆ Notebooks and Handhelds
- ◆ Personal Digital Assistants
- ◆ Portable Instrumentation
- ◆ Digital Cameras
- ◆ Peripherals
- ◆ Audio Players, Keypads, Side Keys, LCD
- ◆ USB 2.0

Dimensions and Pin Configuration



Circuit Diagram



Pin Schematic

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}	3	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	±20	kV
ESD per IEC 61000-4-2 (Contact)		±20	
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{stg}	-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}			5	V	Any I/O pin to ground
Punch-Through Voltage	V _{BR}	6			V	I _T = 1mA, any I/O pin to ground
Reverse Leakage Current	I _R		0.01	0.5	μA	V _{RWM} = 5V, any I/O pin to ground
Clamping Voltage	V _C			15	V	I _{PP} = 1A (8 x 20μs pulse), any I/O pin to ground
Clamping Voltage	V _C			18	V	I _{PP} = 3A (8 x 20μs pulse), any I/O pin to ground
Junction Capacitance	C _J		0.3	0.4	pF	V _R =0, f=1MHz, between I/O pins
Junction Capacitance	C _J			0.8	pF	V _R =0, f=1MHz, any I/O pin to ground

Note 1: I/O pins are pin 2&3

PROTECTION PRODUCTS
Typical characteristics

Fig1. 8/20 μ s Pulse Waveform

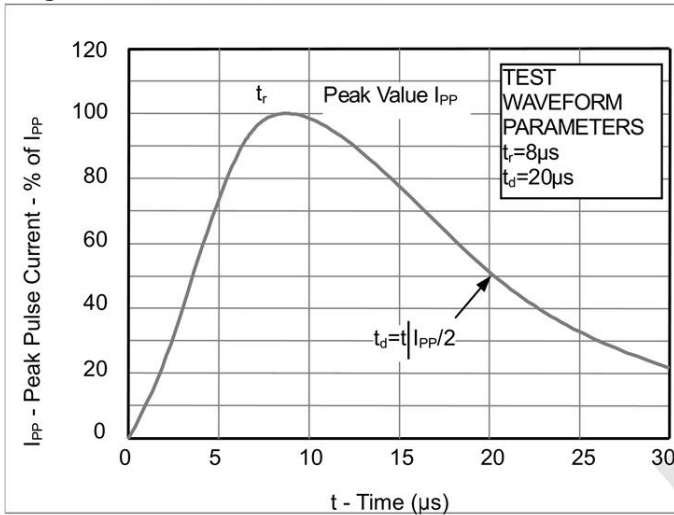


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

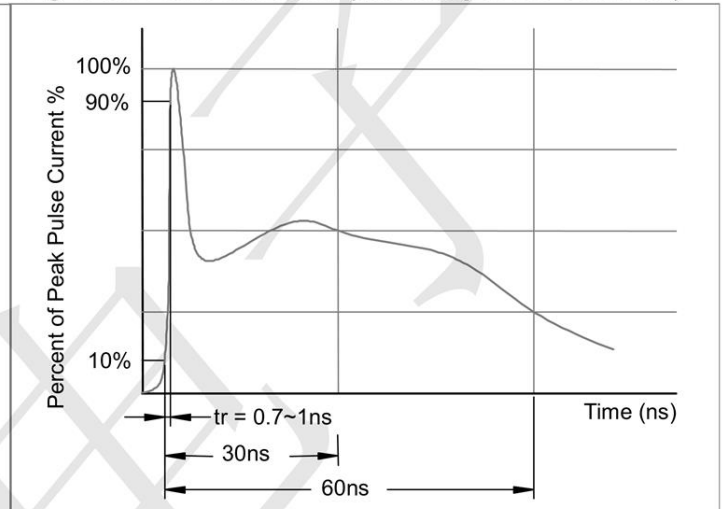
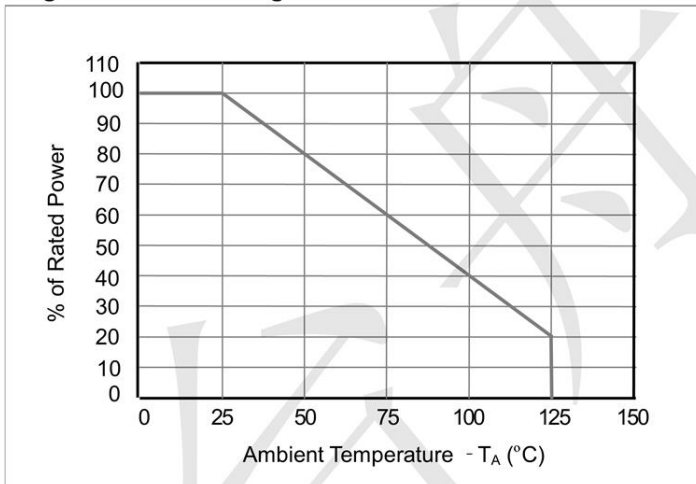
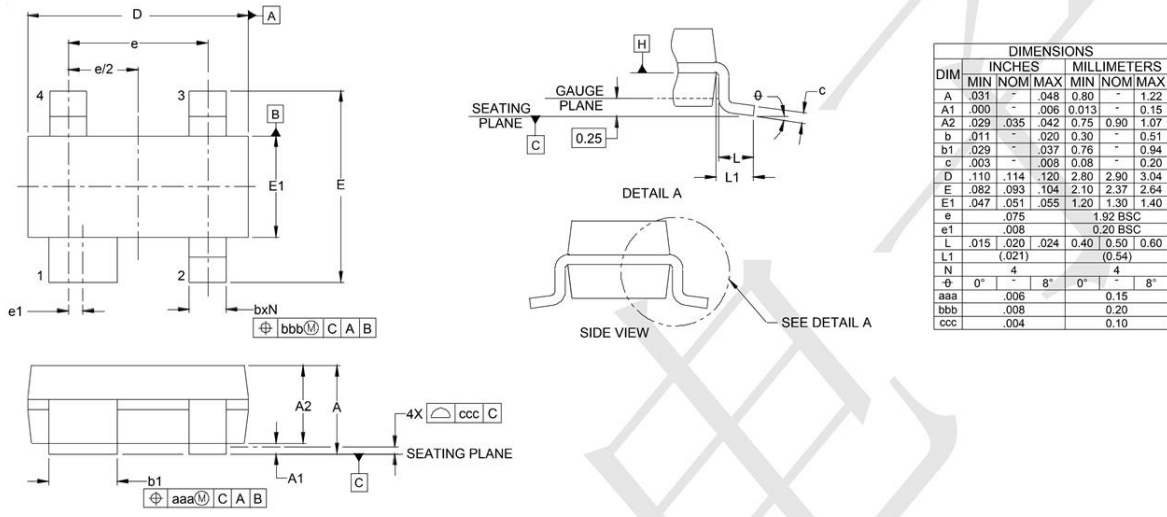


Fig3. Power Derating Curve





Outline Drawing - SOT-143



Land Pattern -SOT-143

