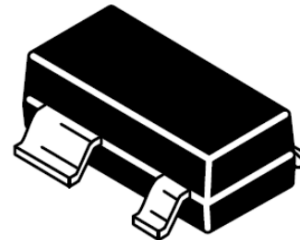


### Features

- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 25\text{kV}$
    - Contact discharge:  $\pm 20\text{kV}$
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 8A (8/20 $\mu\text{s}$ )
- RoHS Compliant

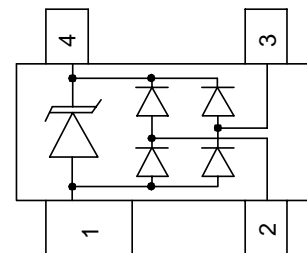
### Dimensions SOT-143



### Applications

- USB 2.0 power and data line
- Set-top box and digital TV
- Digital video interface (DVI)
- Notebook Computers
- SIM Ports
- 10/100 Ethernet

### Pin Configuration



### Mechanical Characteristics

- Package: SOT-143
- Lead Finish: Lead Free
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel: 3,000 pcs
- Reel Size: 7 inch
- Device Marking: S521

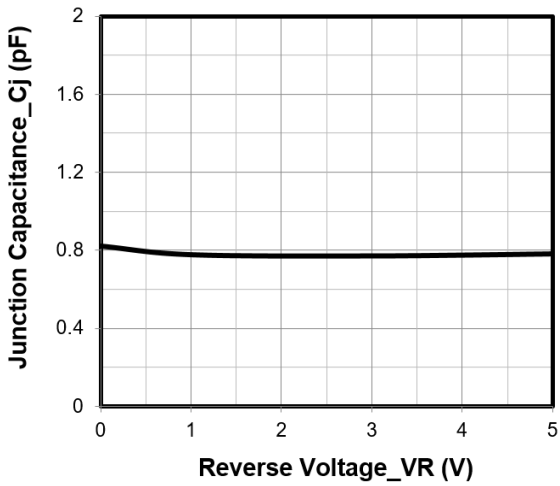
### Absolute Maximum Ratings (T<sub>amb</sub>=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppk	150	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	IPP	8	A
ESD per IEC 61000-4-2 (Air)	VESD	$\pm 25$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 20$	
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	Tstg	-55 to +150	°C

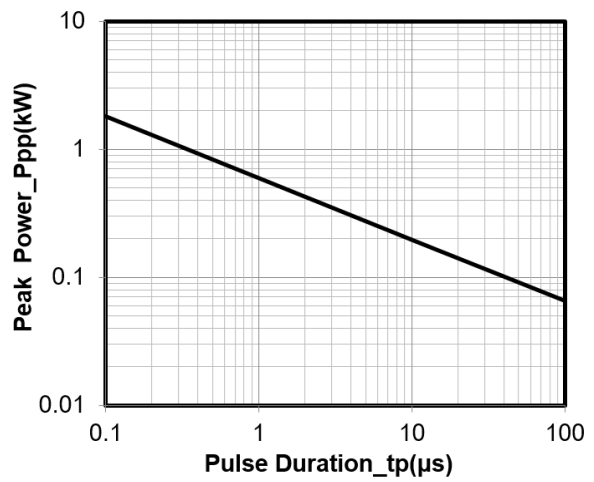
**Electrical Characteristics**(TA=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	$V_{RWM}$				5	V
Breakdown Voltage	$V_{BR}$	$I_T = 1mA$	6			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5V$			0.5	$\mu A$
Clamping Voltage	$V_C$	$I_{PP} = 1A$ (8 x 20 $\mu s$ pulse), any I/O pin to ground			10	V
Clamping Voltage	$V_C$	$I_{PP} = 8A$ (8 x 20 $\mu s$ pulse), any I/O pin to ground			17.5	V
Junction Capacitance	$C_J$	$V_R = 0V$ , $f = 1MHz$ , between I/O pins		0.4		pF
Junction Capacitance	$C_J$	$V_R = 0V$ , $f = 1MHz$ , any I/O pin to ground		0.8		pF

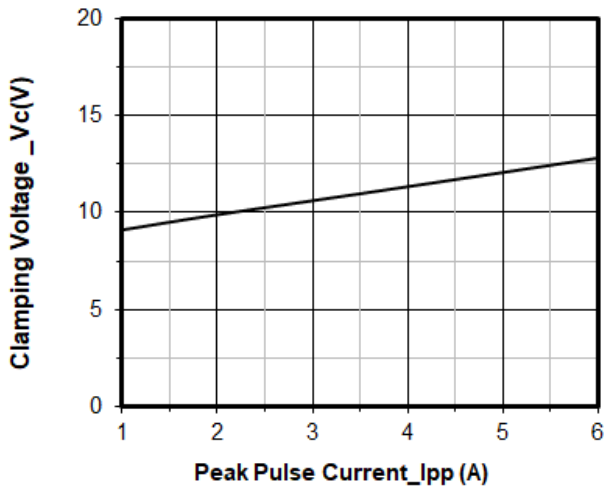
**Typical Performance Characteristics** (TA=25°C unless otherwise specified)



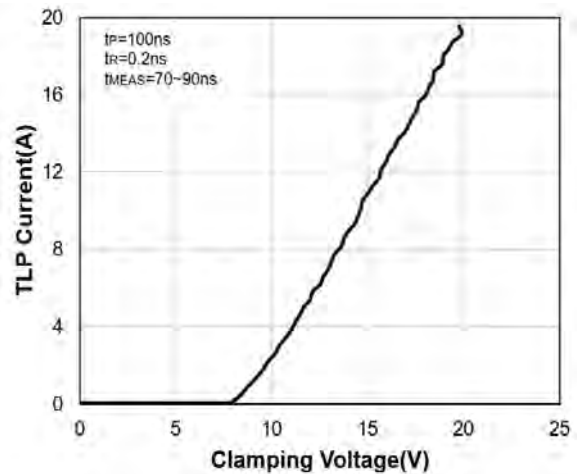
Junction Capacitance vs. Reverse Voltage



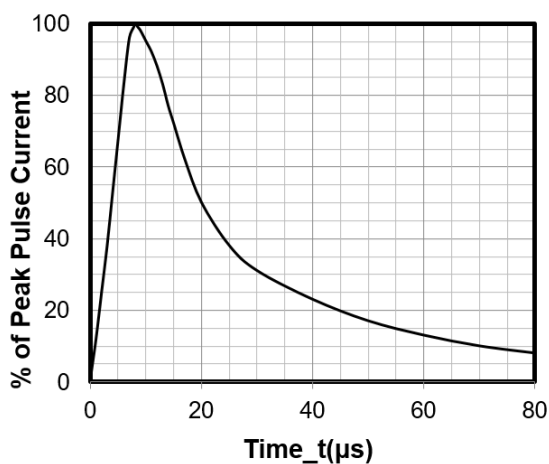
Peak Pulse Power vs. Pulse Time



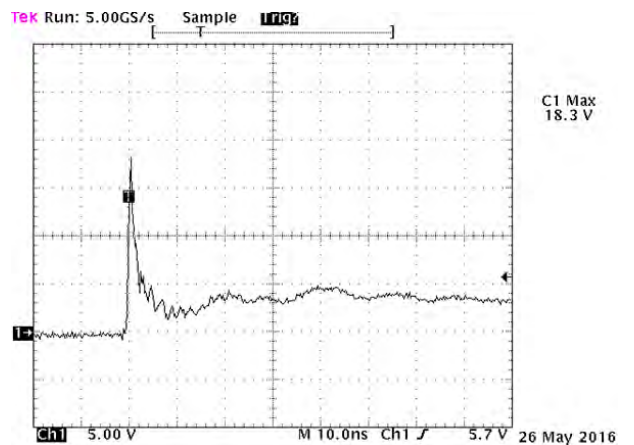
Clamping Voltage vs. Peak Pulse Current



TLP Curve



8 X 20μs Pulse Waveform

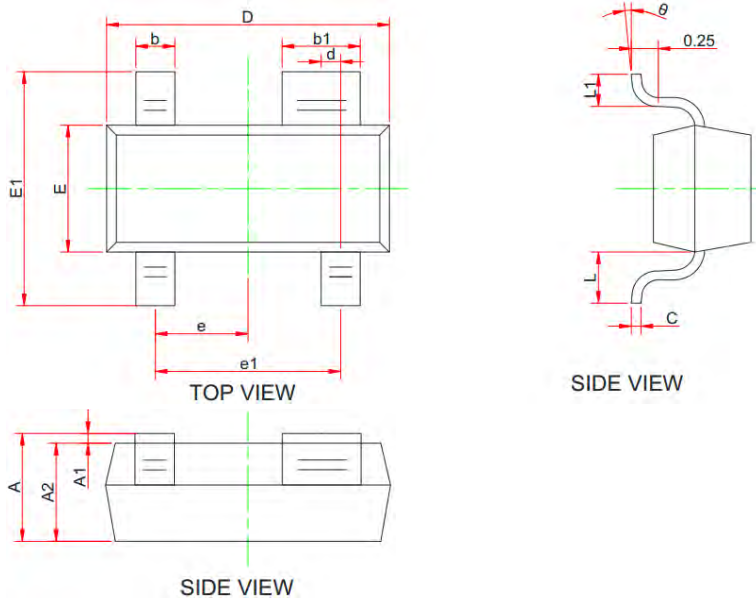


Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

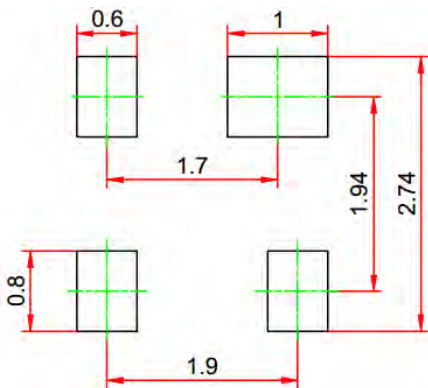
8 kV Contact per IEC61000-4-2

## SOT-143 Package Outline Drawing



SYS	MILLIMETERS		
	MIN	NOM	MAX
A	0.90	-	1.15
A1	0.00	0.05	0.10
A2	0.90	-	1.05
b	0.30	0.40	0.50
b1	0.75	-	0.90
c	0.08	-	0.15
D	2.80	2.90	3.00
d	0.20 Typ		
E	1.20	1.30	1.40
E1	2.25	2.40	2.55
e	0.95 Typ		
e1	1.80	1.90	2.00
L	0.55 Ref		
L1	0.30	0.40	0.50
$\Theta$	0°	-	8°

## Suggested Land Pattern



Unit(mm)

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