

## Features

- Working voltage: 12V
- Low clamping voltage
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 30\text{kV}$   
Contact discharge:  $\pm 30\text{kV}$
  - IEC61000-4-5 (Lightning) 5A (8/20 $\mu\text{s}$ )
  - IEC61000-4-4 (EFT) 40A (5/50ns)
- RoHS Compliant

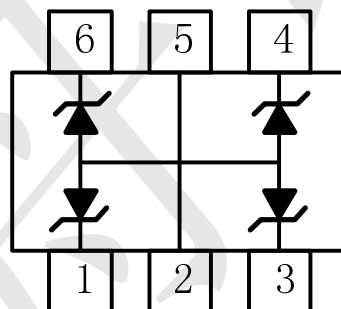
## Mechanical Characteristics

- Package: SOT23-6
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Shipping Qty : 3000pcs/7Inch Tape & Reel

## Applications

- Portable Instrumentation
- Microprocessor Based Equipmenmt
- Cell Phone Handsets and Accessories
- Personal Digital Assistants (PDAs) and Pagers

## Dimensions and Pin Configuration



Pin Configuration

Marking: ES15

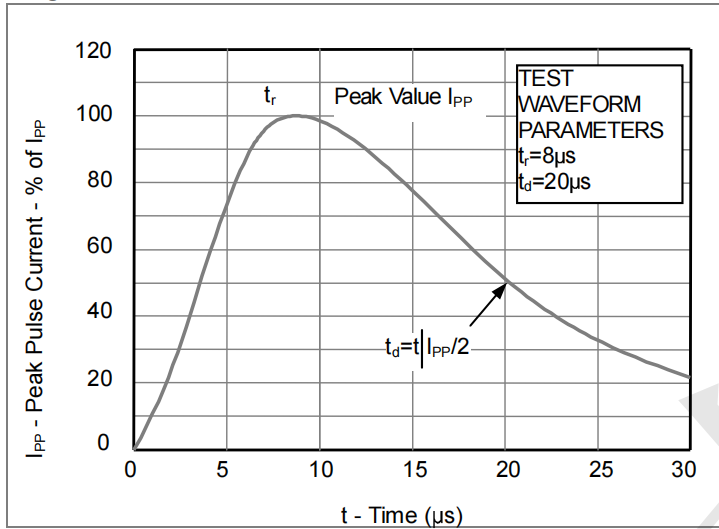
**Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$  unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppk	150	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	I <sub>PP</sub>	5	A
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	$\pm 30$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 30$	
Operating Temperature Range	T <sub>J</sub>	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	$^\circ\text{C}$

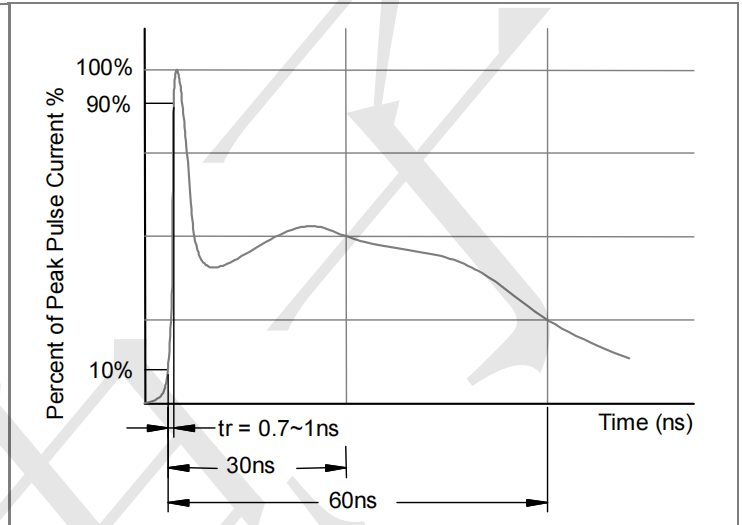
**Electrical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			12	V	
Breakdown Voltage	V <sub>BR</sub>	13.5			V	I <sub>T</sub> = 1mA
Reverse Leakage Current	I <sub>R</sub>			0.1	$\mu\text{A}$	V <sub>RWM</sub> = 12V
Forward Voltage	V <sub>F</sub>		0.85	1.2	V	I <sub>F</sub> = 15mA
Clamping Voltage	V <sub>C</sub>			18	V	I <sub>PP</sub> = 1A(8x20 $\mu\text{s}$ pulse)
Clamping Voltage	V <sub>C</sub>			28	V	I <sub>PP</sub> = 5A(8x20 $\mu\text{s}$ pulse)
Junction Capacitance	C <sub>J</sub>			60	pF	V <sub>R</sub> = 0V, f = 1MHz

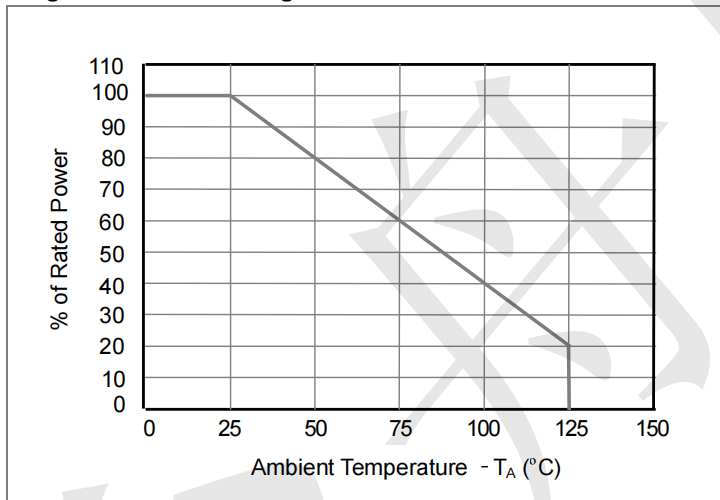
**Fig1. 8/20 $\mu$ s Pulse Waveform**



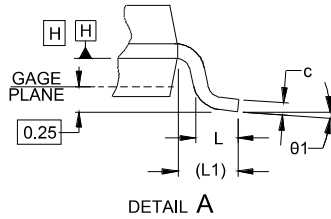
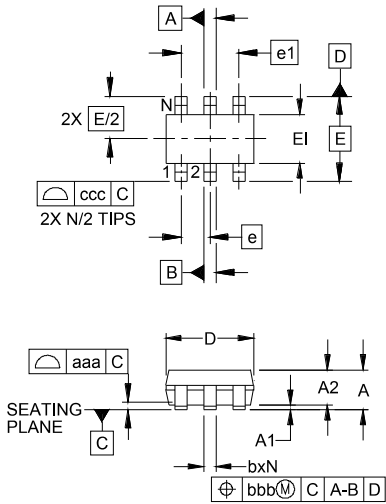
**Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)**



**Fig3. Power Derating Curve**



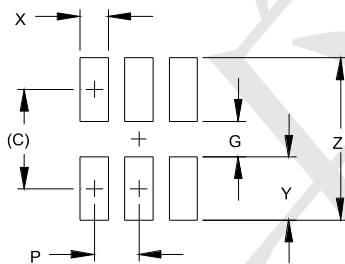
**Outline Drawing - SOT23-6**



DIM	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	.035	-	.057	0.90	-	1.45
A1	.000	-	.006	0.00	-	0.15
A2	.035	.045	.051	.90	1.15	1.30
b	.010	-	.020	0.25	-	0.50
c	.003	-	.009	0.08	-	0.22
D	.110	.114	.118	2.80	2.90	3.00
E1	.060	.063	.069	1.50	1.60	1.75
E	.110 BSC			2.80 BSC		
e	.037 BSC			0.95 BSC		
e1	.075 BSC			1.90 BSC		
L	.012	.018	.024	0.30	0.45	0.60
L1	(.024)		(0.60)			
N	6			6		
$\theta 1$	0°	-	10°	0°	-	10°
aaa	.004			0.10		
bbb	.008			0.20		
ccc	.008			0.20		



**Land Pattern - SOT23-6**



DIMENSIONS		
DIM	INCHES	MILLIMETERS
C	(.098)	(2.50)
G	.055	1.40
P	.037	0.95
X	.024	0.60
Y	.043	1.10
Z	.141	3.60

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