

## Features

- Working voltage: 3.3V
- 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) 20A (8/20 $\mu\text{s}$ )
  - IEC61000-4-4 (EFT) 40A (5/50ns)
- RoHS Compliant

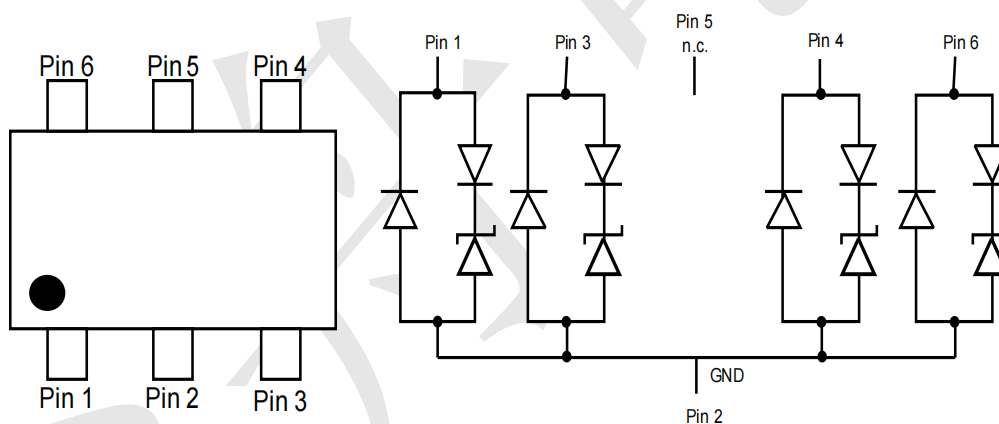
## Mechanical Characteristics

- 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

- 10/100/1000 Ethernet
- 4 lines uni-directional (Pin 2 to GND)
- 2 lines bi-directional (Pin 2 n.c.)

## Dimensions and Pin Configuration



**Marking: E1s**

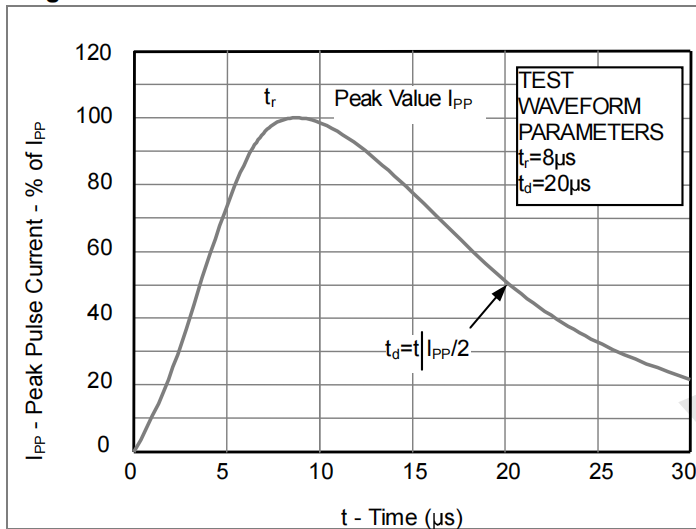
**Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$  unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppk	200	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	I <sub>PP</sub>	20	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	$^\circ\text{C}$

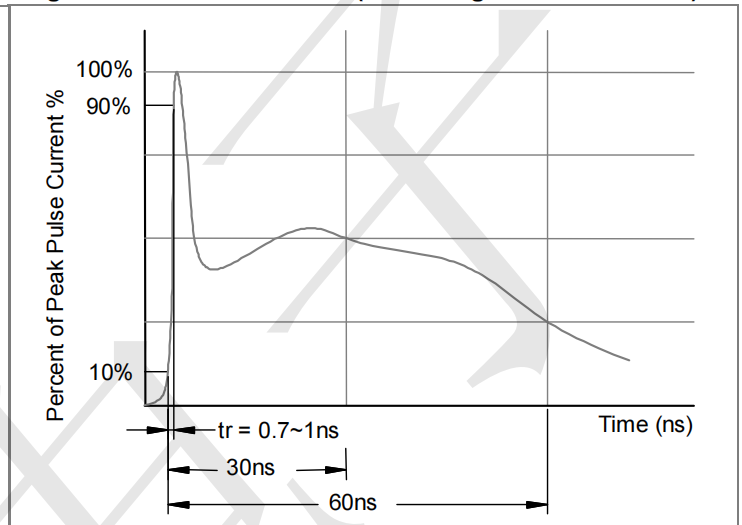
**Electrical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			3.3	V	
Breakdown Voltage	V <sub>BR</sub>	4.2			V	I <sub>T</sub> = 1mA
Reverse Leakage Current	I <sub>R</sub>			0.1	$\mu\text{A}$	V <sub>RWM</sub> = 3.3V
Forward Voltage	V <sub>F</sub>		0.85	1.2	V	I <sub>F</sub> = 15mA
Clamping Voltage	V <sub>C</sub>		8		V	I <sub>PP</sub> = 1A(8x20 $\mu\text{s}$ pulse)
Clamping Voltage	V <sub>C</sub>		10		V	I <sub>PP</sub> = 20A(8x20 $\mu\text{s}$ pulse)
Junction Capacitance	C <sub>J</sub>		2	3	pF	V <sub>R</sub> = 0V, f = 1MHz IO to GND
Junction Capacitance	C <sub>J</sub>		1		pF	V <sub>R</sub> = 0V, f = 1MHz IO to IO

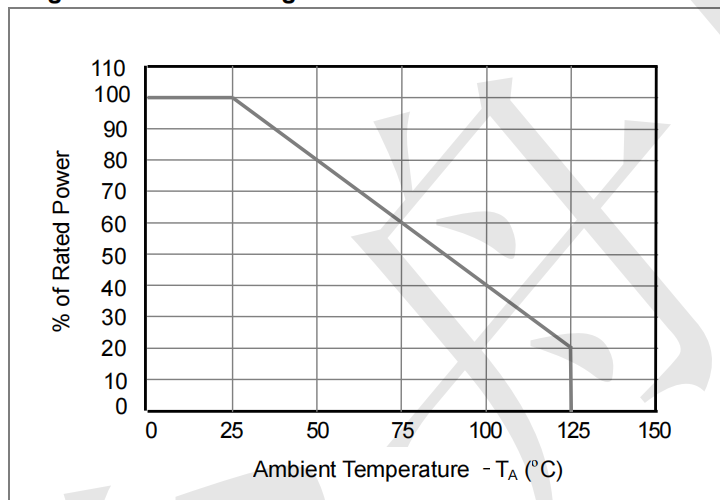
**Fig1. 8/20 $\mu$ s Pulse Waveform**



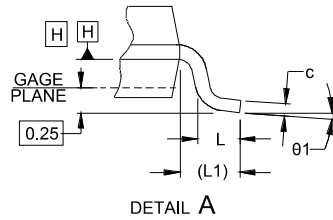
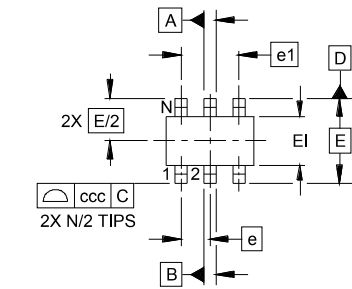
**Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)**



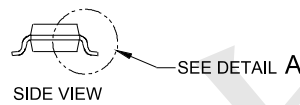
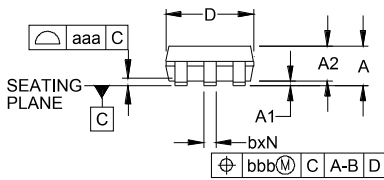
**Fig3. Power Derating Curve**



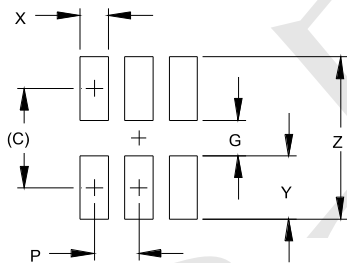
**Outline Drawing - SOT23-6**



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	(0.24)		(0.60)	
N	6		6	
θ1	0°	- 10°	0°	- 10°
aaa	.004		0.10	
bbb	.008		0.20	
ccc	.008		0.20	



**Land Pattern - SOT23-6**



DIM	DIMENSIONS	
	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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