Features

- Low leakage current (<1μA)
- Working voltage: 3.3V
- Low clamping voltage
- Protects five I/O lines
- JEDEC SOT-23 6L package
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±20kV
    - Contact discharge: ±15kV
  - – IEC61000-4-4 (EFT) 40A (5/50ns)
  - – IEC61000-4-5 (Lightning) 10A (8/20μs)
- RoHS Compliant

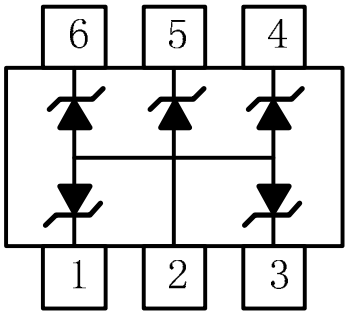
Description

The ESD3V350Xk is a 3.3V TVS array, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines.The ESD3V350Xk complies with the IEC 61000-4-2 (ESD) standard with ±15kV air and ±8kV contact discharge. It is assembled into a 6-Pin lead-free SOT23-6 package. The low clamping voltage array make it ideal for use in portable electronics such as cell phones, PDAs, and notebook computers.

Applications

- Peripherals
- Industrial Equipment
- Notebook Computers
- Portable Instrumentation
- Microprocessor Based Equipmenmt
- Cell Phone Handsets and Accessories
- Personal Digital Assistants (PDAs) and Pagers

Dimensions and Pin Configuration



Pin Configuration

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
- Terminal Connections: See Diagram

Part Number Code

E	S	D	0	5	1	1	L	1
1	2	3	4	5	6	7	8	9

Product Type	
ESD	TSK Electrostatic suppressor ESD Type

Reverse Working Voltage（V）	
3V3	3.3V
05	5V
16	16V

Line	
1	1-Line
2	2-Line
3	3-Line

directional	
0	Bi
1	Uni

Capacitance Type	
L	Low
X	Normal

Size	
1	0201
2	0402
3	DFN0603
4	DFN1006

★ Code 4 to 9 is optional

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

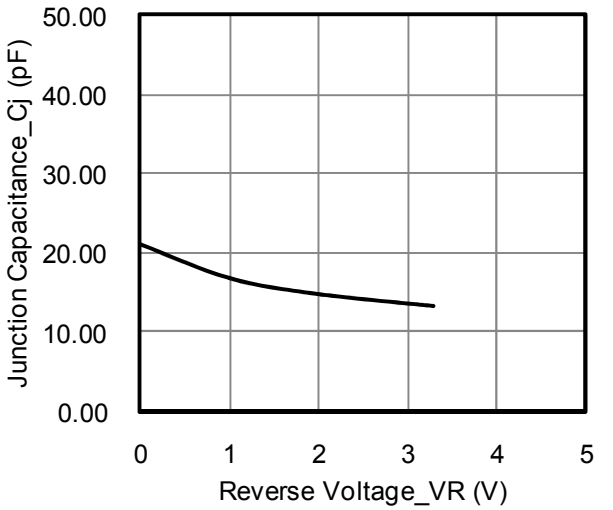
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	100	W
Peak Pulse Current (8/20μs)	I_{PP}	10	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±20 ±15	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

Electrical Characteristics (T_A=25°C unless otherwise specified)

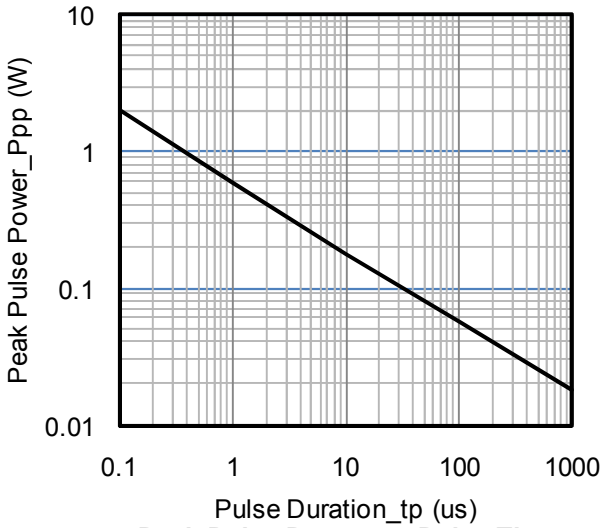
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			3.3	V	
Punch-Through Voltage	V_{PT}	3.5			V	I_{PT} = 2μA
Snap-Back Voltage	V_{SB}	2.8			V	I_{SB} = 50mA
Reverse Leakage Current	I_R			0.5	μA	V_{RWM} = 3.3V, any I/O pin to ground
Clamping Voltage	V_C			4.5	V	I_{PP} = 1A (8 x 20μs pulse), any I/O pin to ground
Clamping Voltage	V_C			6.8	V	I_{PP} = 5A (8 x 20μs pulse), any I/O pin to ground
Clamping Voltage	V_C			10	V	I_{PP} = 10A (8 x 20μs pulse), any I/O pin to ground
Steering Diode Forward Voltage (Reverse Clamping Voltage)	V_F			1.7	V	I_{PP} = 1A (8 x 20μs pulse), ground to any I/O pin
Junction Capacitance	C_J			40	pF	VR = 0V, f = 1MHz, any I/O pin to ground

Note 1: I/O pins are Pin 1, 3, 4, 5 and 6

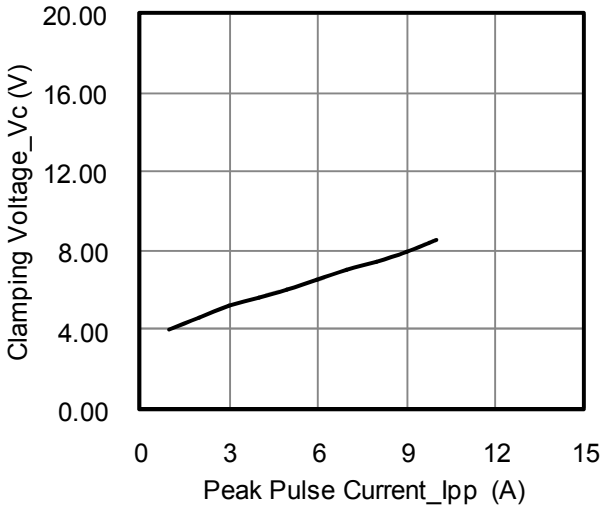
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



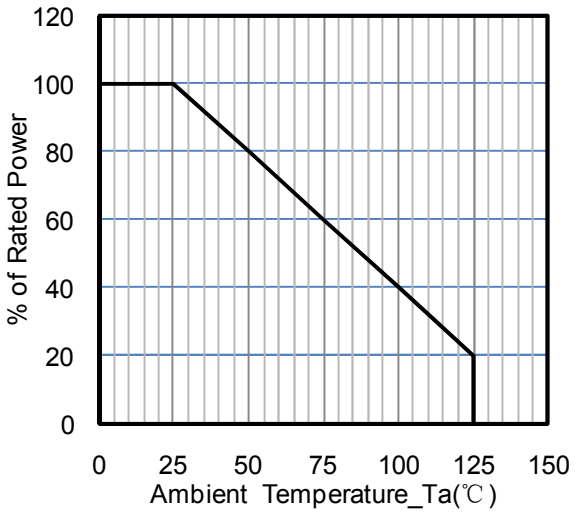
Junction Capacitance vs. Reverse Voltage



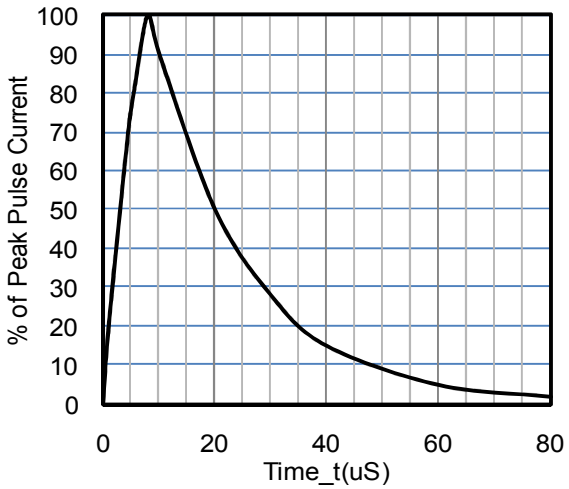
Peak Pulse Power vs. Pulse Time



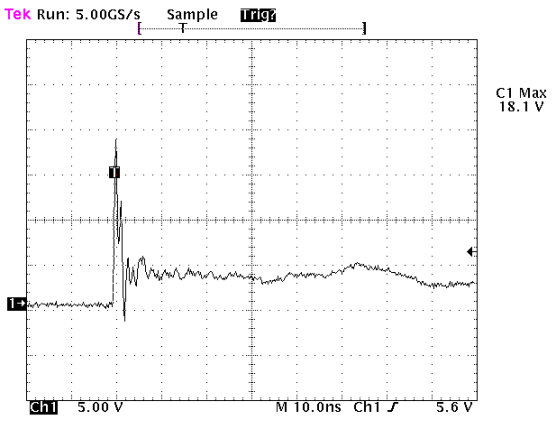
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



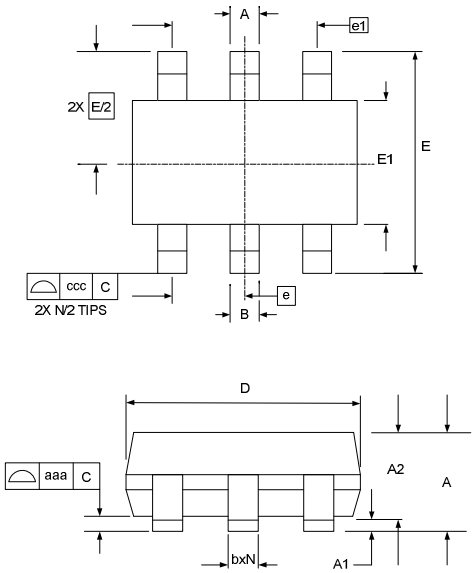
8 X 20uS Pulse Waveform



ESD Clamping Voltage

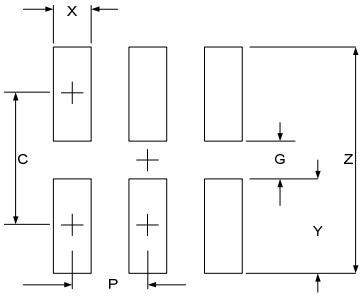
8 kV Contact per IEC61000−4−2

SOT23-6 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.90		1.45	0.035		0.057
A1	0.00		0.15	0.000		0.006
A2	0.90	1.15	1.30	0.035	0.045	0.051
b	0.25		0.50	0.010		0.020
c	0.08		0.22	0.003		0.009
D	2.80	2.90	3.10	0.110	0.114	0.122
E1	1.50	1.60	1.75	0.060	0.063	0.069
E	2.80 BSC			0.110 BSC		
e	0.95 BSC			0.037 BSC		
e1	1.90 BSC			0.075 BSC		
N	6			6		
aaa	0.10			0.004		
ccc	0.20			0.008		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	2.50	0.098
G	1.40	0.055
P	0.95	0.037
X	0.60	0.024
Y	1.10	0.043
Z	3.60	0.141

Ordering Information

Part Number	Packaging	Reel Size
ESD3V350Xk	3000/Tape & Reel	7 inch