

**Features**

- 500W peak pulse power (8/20µs)
- Protects four lines
- Ultra low leakage: nA level
- Low operating voltage: 3.3V
- Low capacitance
- Ultra low clamping voltage
- JEDEC SO-8 package
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge: ±30kV  
Contact discharge: ±30kV
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 25A (8/20µs)
- RoHS Compliant

**Applications**

- Base Station
- Analog Inputs
- Switch Systems
- WAN/LAN Equipment
- Desktops, Servers, and Notebooks
- Low Voltage Interfaces

**Mechanical Characteristics**

- Package: SO-8
- 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**

<b>E</b>	<b>S</b>	<b>D</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>L</b>	<b>1</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>

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

Capacitance Type	
L	Low
X	Normal

directional	
0	Bi
1	Uni

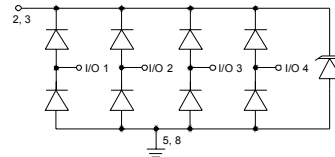
Size	
1	0201
2	0402
3	DFN0603
4	DFN1006

**Description**

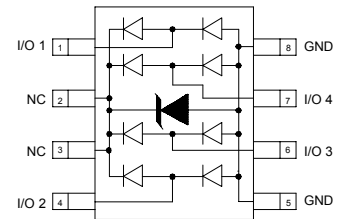
The ESD3V341X0 is designed to protect low voltage, CMOS semiconductors from transients caused by electrostatic discharge (ESD), cable discharge events (CDE), lightning and other induced voltage surges. Low capacitance compensation diode is integrated into the TVS to lower the typical capacitance to 8pF per line. The ESD3V341X0 complies with the IEC 61000-4-2 (ESD) standard with ±15kV air and ±8kV contact discharge. The ESD3V341X0 is assembled into a 8-pin lead-free SO-8 package, The combination of low leakage, signal integrity and flow through design makes it an ideal application such as telecommunication lines, and video lines.



**Dimensions and Pin Configuration**



Circuit and Pin Schematic



SO-8 Outline

★ Code 4 to 9 is optional

Specifications are subject to change without notice

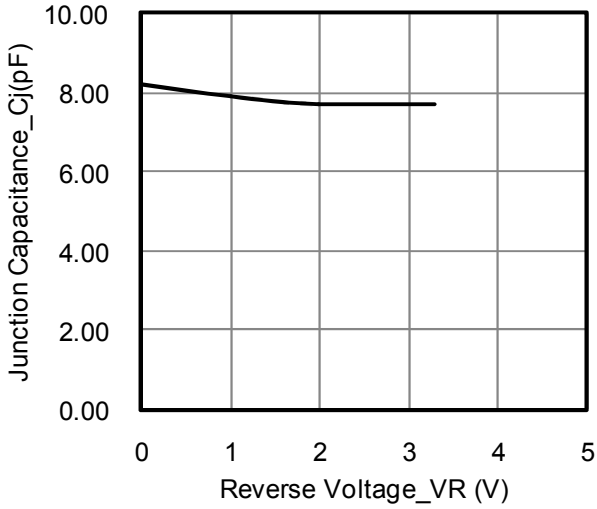
### Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppk	500	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	I <sub>PP</sub>	25	A
ESD per IEC 61000-4-2 (Air)	VESD	$\pm 30$	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	$^\circ\text{C}$

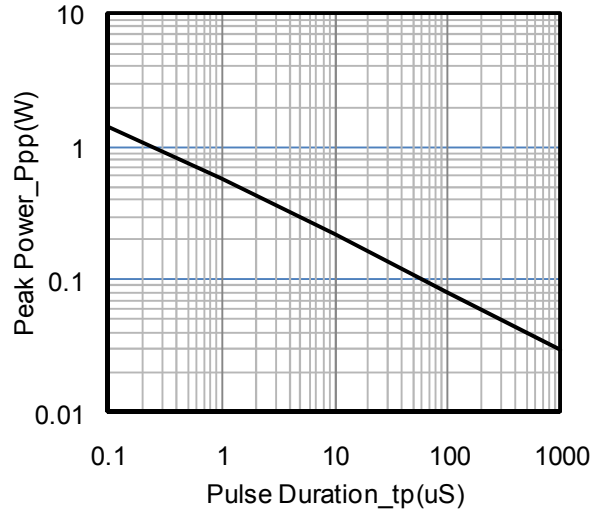
### Electrical Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			3.3	V	
Punch-Through Voltage	V <sub>PT</sub>	3.5			V	I <sub>T</sub> = 2 $\mu\text{A}$
Snap-Back Voltage	V <sub>SB</sub>	2.8			V	I <sub>SB</sub> = 50mA
Reverse Leakage Current	I <sub>R</sub>			1.0	$\mu\text{A}$	V <sub>RWM</sub> = 3.3V
Clamping Voltage	V <sub>C</sub>			5.3	V	I <sub>PP</sub> = 1A (8 x 20 $\mu\text{s}$ pulse)
Clamping Voltage	V <sub>C</sub>			10	V	I <sub>PP</sub> = 10A (8 x 20 $\mu\text{s}$ pulse)
Clamping Voltage	V <sub>C</sub>			20	V	I <sub>PP</sub> = 25A (8 x 20 $\mu\text{s}$ pulse)
Junction Capacitance	C <sub>J</sub>		8	15	pF	V <sub>R</sub> = 0V, f = 1MHz, any I/O to ground
Junction Capacitance	C <sub>J</sub>		4		pF	V <sub>R</sub> = 0V, f = 1MHz, between I/O pins

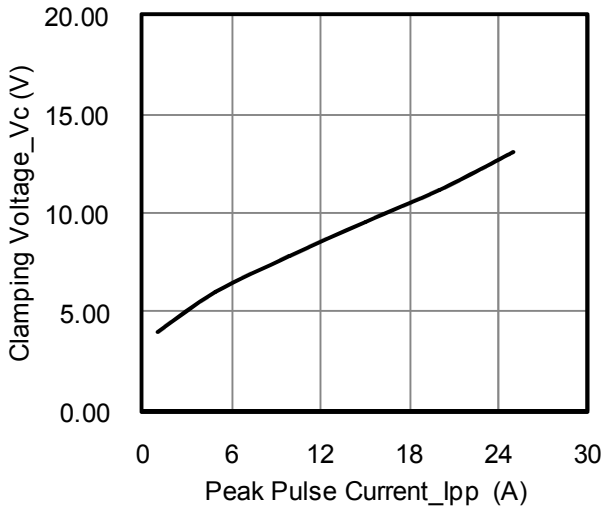
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



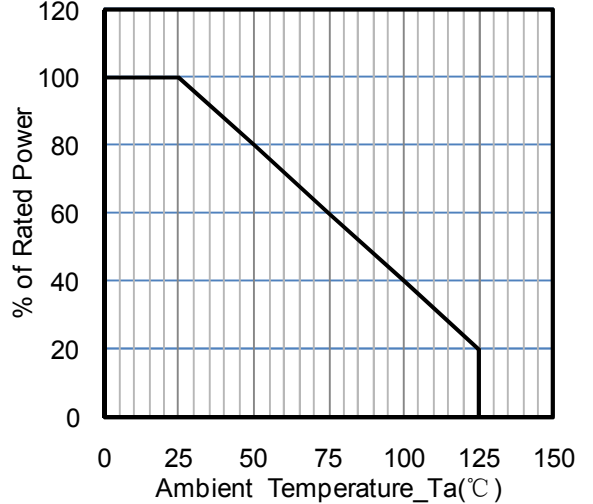
Junction Capacitance vs. Reverse Voltage



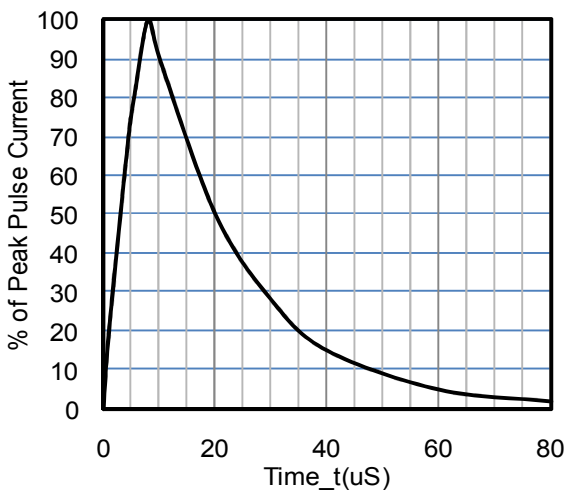
Peak Pulse Power vs. Pulse Time



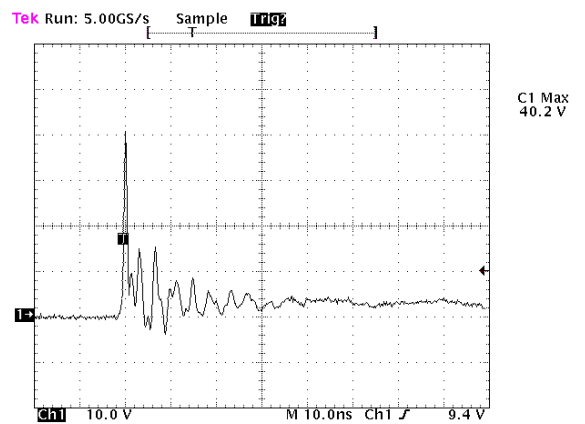
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



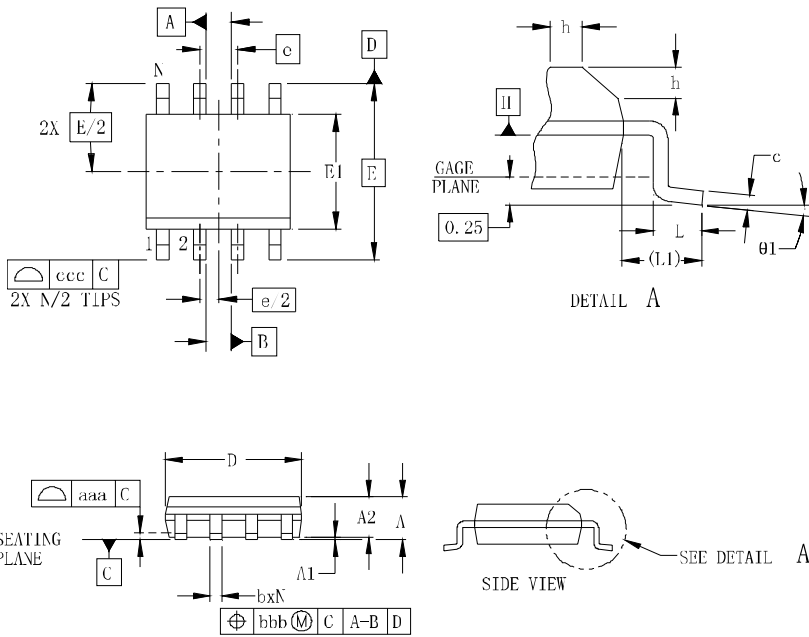
8 X 20us Pulse Waveform



ESD Clamping Voltage

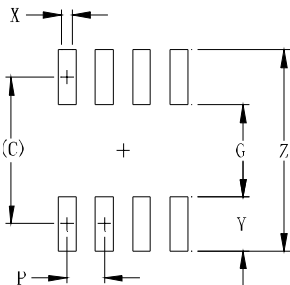
8 kV Contact per IEC61000-4-2

SO-8 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.35		1.75	0.053		0.069
A1	0.10		0.25	0.004		0.010
A2	1.25		1.65	0.049		0.065
b	0.31		0.51	0.012		0.020
c	0.17		0.25	0.007		0.010
D	4.80	4.90	5.00	0.189	0.193	0.197
E1	3.80	3.90	4.00	0.150	0.154	0.157
E	6.00 BSC			0.236 BSC		
e	1.27 BSC			0.050 BSC		
h	0.25		0.50	0.010		0.020
L	0.40	0.72	1.04	0.016	0.028	0.041
L1	(1.04)			(0.041)		
N	8			8		
$\theta 1$	0°		8°	0°		8°
aaa	0.10			0.004		
bbb	0.25			0.010		
ccc	0.20			0.008		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	(5.20)	0.205
G	3.00	0.118
P	1.27	0.050
X	0.60	0.024
Y	2.20	0.087
Z	7.40	0.291

Ordering Information

Part Number	Packaging	Reel Size
ESD3V341X0	2500/Tape & Reel	13 inch