

# GSE6V8UN

## Ultra Low Capacitance 2-Line ESD Protection Array

### Product Description

The GSE6V8UN is 2-channel very low capacitance ESD transient voltage suppressor which provides a very high level of protection for sensitive electronic components that may be subjected to electrostatic discharge.

It is particularly well-suited to protect systems with high speed communication lines from ESD, EFT, and lightning.

The GSE6V8UN consists of two low capacitance steering diodes and a TVS diode in SOT-353 package.

Each channel of GSE6V8UN could safely dissipate ESD strikes of  $\pm 15\text{kV}$  air discharge as well as  $\pm 8\text{kV}$  contact discharge, meeting the requirement of the IEC 61000-4-2 international standard.

Using the MIL-STD-883 (Method 3015) specification for Human Body Model (HBM) ESD, the device provides protection for contact discharges to greater than  $\pm 15\text{kV}$ .

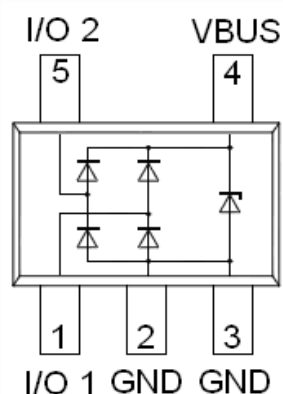
### Features

- Stand\_off Voltage: 5 V
- Peak Power up to 180 Watts @ 8 x 20 us Pulse
- Low Leakage current
- Level 4 ESD Protection IEC61000-4-2
- Level 4 EFT Protection IEC61000-4-4
- Low capacitance: 0.7 pF typical
- SOT-353 Package
- Molding compound flammability rating: UL94V-0
- Packaging: Tape and Reel per EIA 481
- RoHS Compliant, 100%Pb & Halogen Free

### Applications

- High Definition Multi-Media Interface Protection
- USB 3.0 Power and Data Line Protection
- Monitors and Flat Panel Displays Notebook Computers
- Video Line Protection & Base Stations
- HD/SD, IDSL Secondary IC Side Protection
- Microcontroller Input Protection
- LCD and camera modules
- 10/100/1000 Ethernet

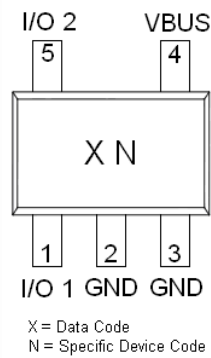
### Packages & Pin Assignments



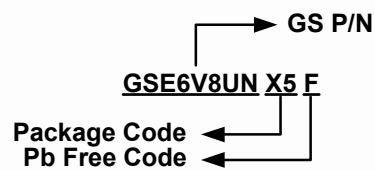
Pin Define  
Top View

**SOT-353**

## Marking Information



## Ordering Information



Part Number	Package	Part Marking	Unit	Quantity
GSE6V8UNX5F	SOT-353	XN	Tape & Reel	3000EA

## Absolute Maximum Ratings

(T<sub>A</sub>=25°C Unless otherwise noted)

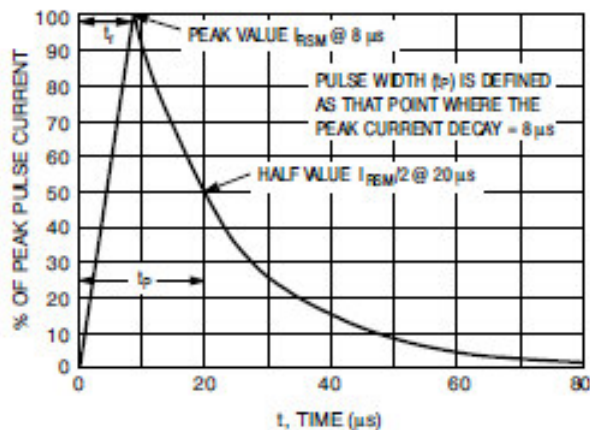
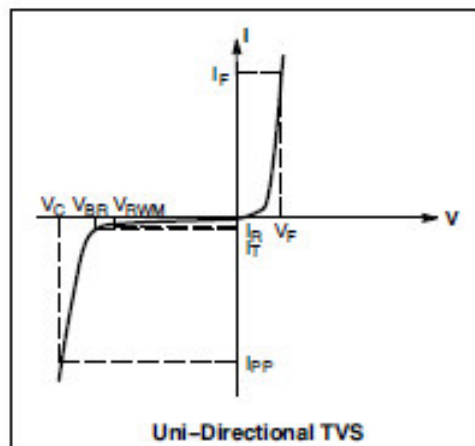
Symbol	Parameter	Typical	Unit
P <sub>PP</sub>	Peak Pulse Power ( t <sub>p</sub> = 8/20 μs )	180	W
V <sub>PP</sub>	ESD per IEC 61000 – 4 – 2 (Air )	±15	KV
	ESD per IEC 61000 – 4 – 2 (Contact )	±8	KV
T <sub>J</sub>	Operating Junction Temperature	-55 ~ 125	°C
T <sub>STG</sub>	Storage Temperature Range	-55 ~ 125	°C
T <sub>L</sub>	Lead Soldering Temperature	260 ( 10sec )	°C

## Electrical Characteristics

( $T_A=25^\circ\text{C}$  Unless otherwise noted)

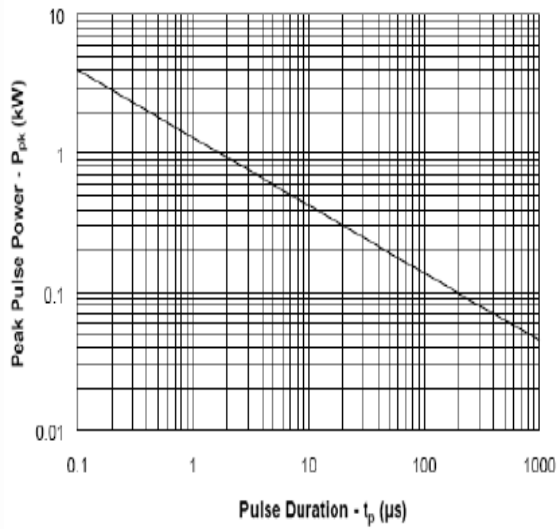
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_{RWM}$	Reverse Stand – Off Voltage				5.0	V
$V_F$	Forward Voltage @ $I_F$	$I_F=10\text{mA}$	0.4	0.8	1.5	V
$V_{BR}$	Reverse Breakdown Voltage @ $I_T$	$I_T=1\text{mA}$	6.0	7.0		V
$I_R$	Reverse Leakage Current	$V_{RWM}=5\text{V}, T_A=25^\circ\text{C},$ Pin5 to 2			1.0	$\mu\text{A}$
$V_C$	Clamping Voltage @ $I_{PP}$	$I_{PP} = 1\text{A}, t_p = 8/20 \mu\text{s},$ Any I/O pin to Ground			15.0	V
$C_J$	Junction Capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$ Any I/O pin to Ground		1.4	1.5	pF
		$V_R = 0\text{V}, f = 1\text{MHz}$ Between I/O pins		0.7		

## Electrical Parameter

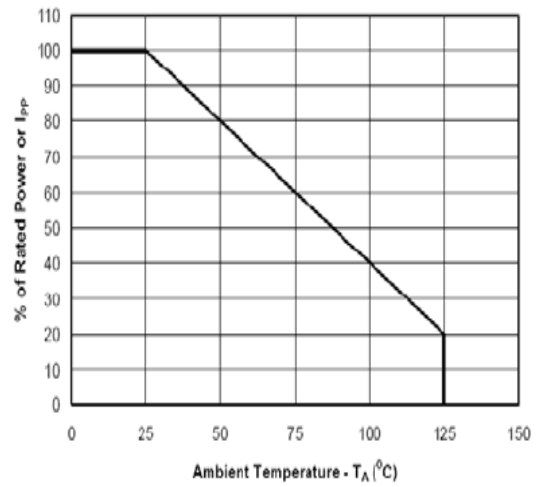


## Typical Performance Characteristics

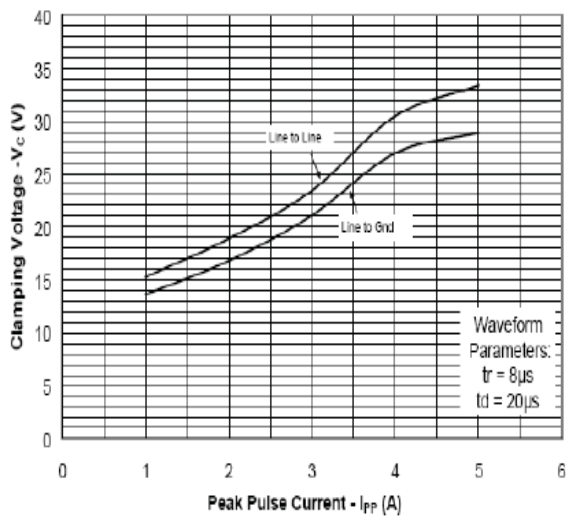
### Non-Repetitive Peak Pulse Power vs. Pulse Time



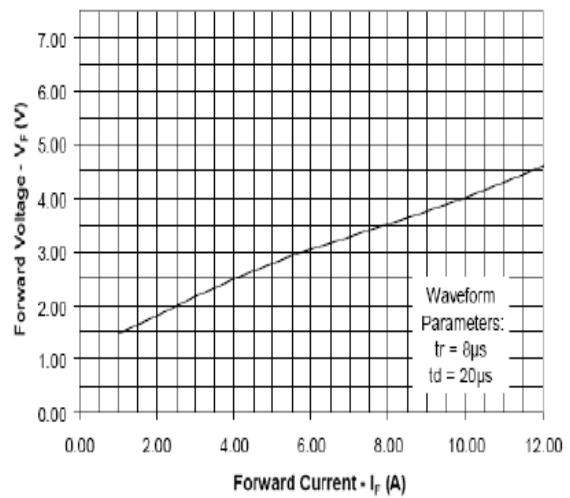
### Power Derating Curve



### Clamping Voltage vs. Peak Pulse Current

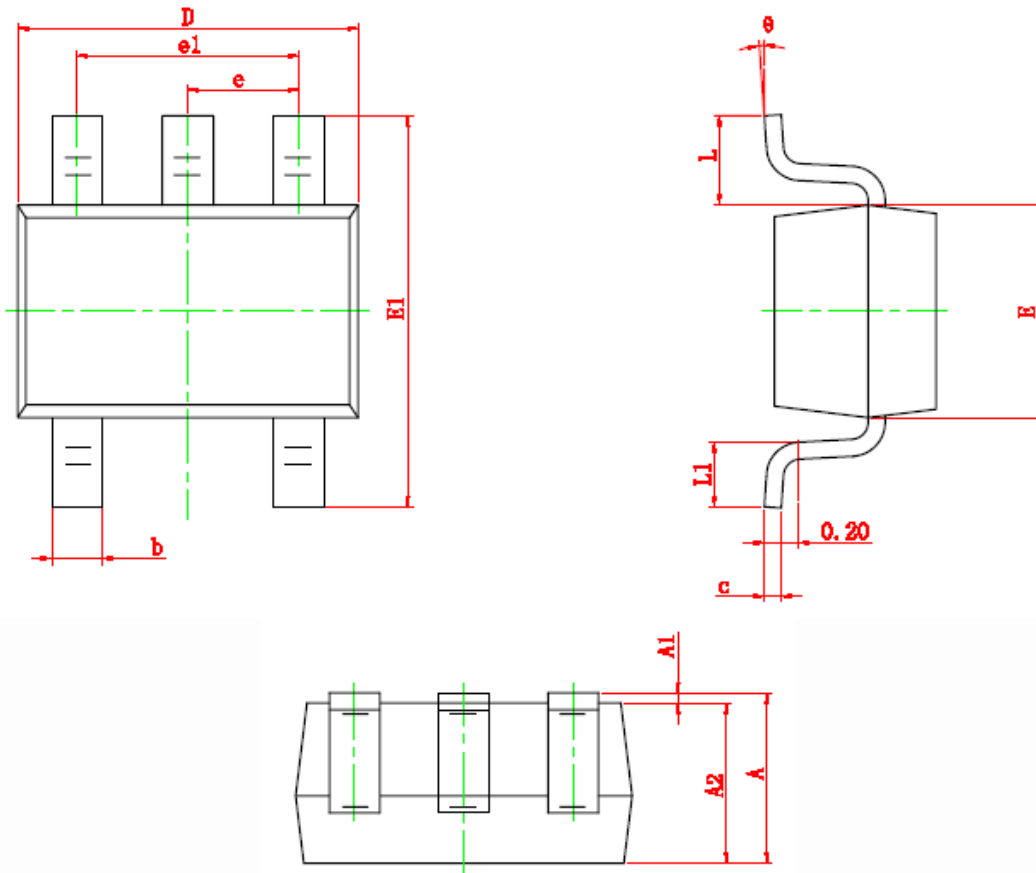


### Forward Voltage vs. Forward Current



## Package Dimension

# SOT-353







Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
<b>A</b>	0.900	1.100	0.035	0.043
<b>A1</b>	0.000	0.100	0.000	0.004
<b>A2</b>	0.900	1.000	0.035	0.039
<b>b</b>	0.150	0.350	0.006	0.014
<b>c</b>	0.080	0.150	0.003	0.006
<b>D</b>	2.000	2.200	0.079	0.087
<b>E</b>	1.150	1.350	0.045	0.053
<b>E1</b>	2.150	2.450	0.085	0.096
<b>e</b>	0.650 TYP		0.026 TYP	
<b>e1</b>	1.200	1.400	0.047	0.055
<b>L</b>	0.525 REF		0.021 REF	
<b>L1</b>	0.260	0.460	0.010	0.018
<b><math>\theta</math></b>	0°	8°	0°	8°





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