

## 1-channel High Voltage ESD Protection TVS Zener Diode

### Features

- Compact die protects from ESD discharges
- Small form-factor 7.9 x 7.9 mils sq
- Silicon chip thickness of 6 mils
- ESD protection to over 8kV contact discharge per MIL-STD-883
- This product is in full RoHS compliance

### Applications

- Power LEDs
- High Brightness LEDs
- RF & Microwave Modules
- Multi-chip Modules
- Hybrid Microelectronics

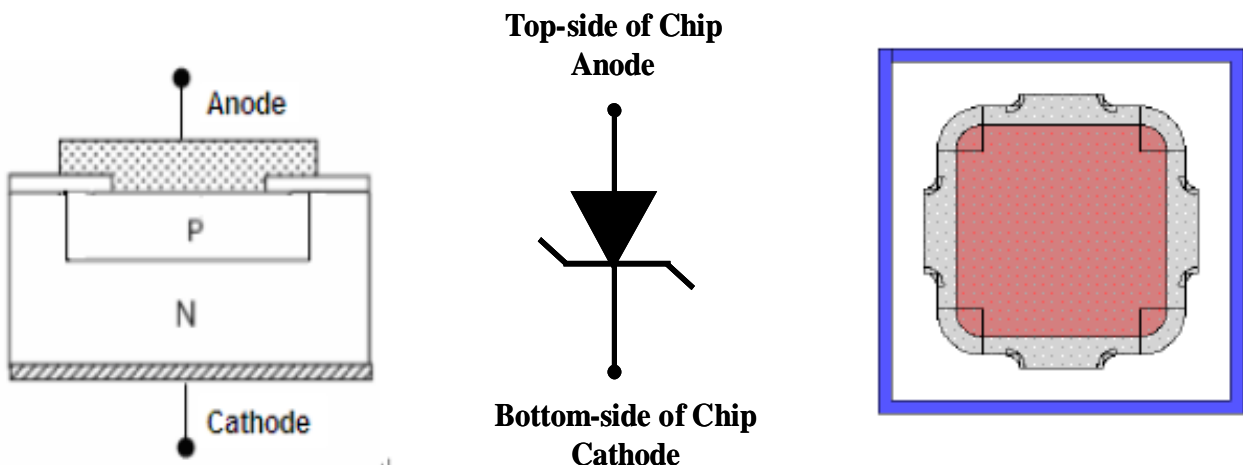
### Product Description

The ESD7979 provides a high level of protection for sensitive parts that may be subjected to electrostatic discharge (ESD). The tiny form-factor and single wire-bond feature makes this device ideal for applications that have very confined spaces and miniature packaging. This product is designed with a large cross-sectional area junction for conducting high transient currents. It provides superior electrical characteristics such as lower clamping voltage and literally no device degradation when compared to Multilayer Varistors (MLV). This device is designed and characterized to safely dissipate ESD strikes of over 8kV, when tested to the stringent MIL-STD-883 conditions.

Product will be shipped in wafer-form (diced or undiced). The silicon wafer diameter is 4". Estimated net die per wafer is 150ku.

ELECTRICAL CHARACTERISTICS @ 25°C						
SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	V
$V_Z$	Zener Diode Voltage	$I_Z = 5\mu A$	100	-	-	V
$I_R$	Leakage Current	$V_R = 80V$	-	0.5	1.0	$\mu A$
$V_f$	Forward Voltage	$I_f = 10mA$	0.77	0.82	0.87	V
$V_{ESD}$	ESD Withstand Voltage	Human Body Model, MIL-STD-883, Method 3015	$\pm 8$			kV

### ESD7979-100V Structure & Electrical Schematic



Ordering Part No.					
Part Family	Signal Clamp	Chip Thickness	Ship Method	Front Metal Pad for Wire-bonding (Typical thickness)	Back Metal for Die Attach (Typical thickness)
ESD7979-	100V = 100Volts	6 = 6 mils	W = Shipped as unsawn full wafer	A = Aluminum (2um)	1= Gold (0.25um)
Die Size of 7.9 x 7.9 mils sq			B = Diced and shipped on mylar/tape		

**Part Number Example:** ESD7979-100V6BA1 is 7.9 x 7.9 mils sq ESD chip with 100V Clamp and 6 mils thickness; shipped as diced 4" wafers on mylar; the device as Aluminum top pads and Gold back metal

## Application Schematic for Protecting High Brightness LED String with a single or dual ESD7979

High Brightness White/Blue/Green LED lamps with Sapphire substrate are sensitive to Electrostatic Discharge and Voltage Surge. A single high voltage ESD7979 diode can be used for protection for an entire string of LEDs. For protection from both positive & negative pulses (Bidirectional signal), two individual diodes (connected back-to-back) can be used.

