

### General Description

The ESD5Z6.0 Series is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.

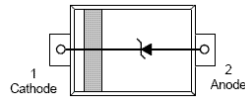
### Applications

Cellular phones  
Portable devices  
Digital cameras  
Power supplies

### Features

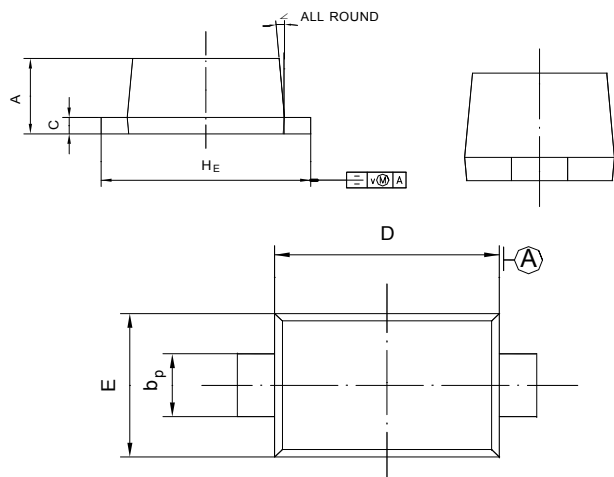
Small Body Outline Dimensions  
Low Body Height  
Stand-off Voltage: 6.0 V  
Peak Power up to 200 Watts @ 8 x 20  $\mu$ s Pulse  
Low Leakage  
Response Time is Typically < 1 ns  
ESD Rating of Class 3 (> 16 kV) per Human Body Model  
IEC61000-4-2 Level 4 ESD Protection  
IEC61000-4-4 Level 4 EFT Protection

We declare that the material of product compliance with RoHS requirements.  
S-Prefix for Automotive and Other Applications  
Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.



SOD-523

### SOD-523



| UNIT | A            | b <sub>p</sub> | C            | D            | E            | H <sub>E</sub> | V   | ∠  |
|------|--------------|----------------|--------------|--------------|--------------|----------------|-----|----|
| mm   | 0.70<br>0.50 | 0.40<br>0.20   | 0.14<br>0.05 | 1.30<br>1.10 | 0.90<br>0.75 | 1.70<br>1.50   | 0.1 | 5° |

Dimensions in inches and (millimeters)

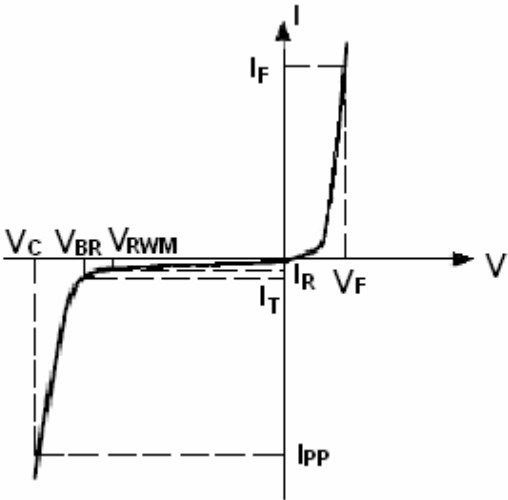
### Absolute Ratings (T<sub>amb</sub>=25°C)

| Symbol           | Parameter                                         | Value                                           | Units |
|------------------|---------------------------------------------------|-------------------------------------------------|-------|
| P <sub>pp</sub>  | Peak Pulse Power (t <sub>p</sub> = 8/20μs)        | 100                                             | W     |
| T <sub>L</sub>   | Maximum lead temperature for soldering during 10s | 260                                             | °C    |
| T <sub>stg</sub> | Storage Temperature Range                         | -55 to +150                                     | °C    |
| T <sub>op</sub>  | Operating Temperature Range                       | -40 to +125                                     | °C    |
| T <sub>j</sub>   | Maximum junction temperature                      | 150                                             | °C    |
|                  | IEC61000-4-2 (ESD)                                | air discharge<br>±15<br>contact discharge<br>±8 | KV    |
|                  | IEC61000-4-4 (EFT)                                | 40                                              | A     |
|                  | ESD Voltage                                       | Per Human Body Model<br>16                      | KV    |

# ESD5Z6.0

## Electrical Parameter

| Symbol    | Parameter                                   |
|-----------|---------------------------------------------|
| $I_{PP}$  | Maximum Reverse Peak Pulse Current          |
| $V_C$     | Clamping Voltage @ $I_{PP}$                 |
| $V_{RWM}$ | Working Peak Reverse Voltage                |
| $I_R$     | Maximum Reverse Leakage Current @ $V_{RWM}$ |
| $I_T$     | Test Current                                |
| $V_{BR}$  | Breakdown Voltage @ $I_T$                   |
| $I_F$     | Forward Current                             |
| $V_F$     | Forward Voltage @ $I_F$                     |



## Electrical Characteristics

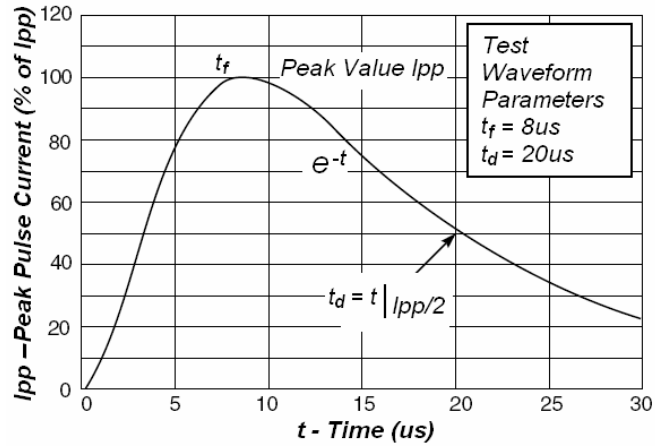
Ratings at 25°C ambient temperature unless otherwise specified.  $V_F = 0.9V$  at  $I_F = 10mA$

| Device   | Device Marking | $V_{RWM}$ (V) | $I_R$ (uA) @ $V_{RWM}$ | $V_{BR}$ (V) @ $I_T$ (Note 1) | $I_T$ | $V_{BR}$ (V) @ $I_T$ (Note 1) | $V_C$ (V) @ Max $I_{PP}^*$ | $I_{PP}$ (A)* | $P_{PK}$ (W)* | C (pF) |
|----------|----------------|---------------|------------------------|-------------------------------|-------|-------------------------------|----------------------------|---------------|---------------|--------|
|          |                | Max           | Max                    | Min                           | mA    | Max                           | Max                        | Max           | Max           | Typ    |
| ESD5Z6.0 | ZG             | 6.0           | 1                      | 7.5                           | 1     | 8.5                           | 18.8                       | 5.8           | 100           | 47     |

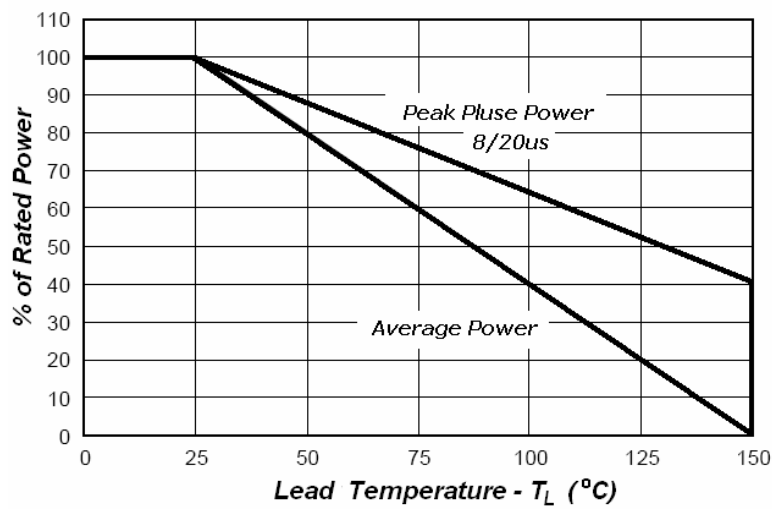
\*Surge current waveform per Figure 1.

1.  $V_{BR}$  is measured with a pluse test current  $I_T$  at an ambient temperature of 25°C.

## RATING AND CHARACTERISTIC CURVES ( ESD5Z6.0 )



**Fig1. Pulse Waveform**



**Fig3. Power Derating**