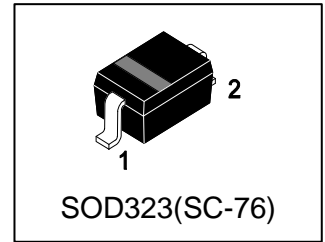


# S-LESD3Z24CT1G

## ESD Protection Diodes

### 1. FEATURES

- Ultra low leakage: nA level.
- Low clamping voltage.
- ESD protection
- Complies with IEC 61000-4-2 standards: Air discharge:  $\pm 24\text{kV}$   
Contact discharge:  $\pm 24\text{kV}$
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- S-Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.



### 2. DEVICE MARKING AND ORDERING INFORMATION

| Device         | Marking | Shipping       |
|----------------|---------|----------------|
| S-LESD3Z24CT1G | CAT     | 3000/Tape&Reel |

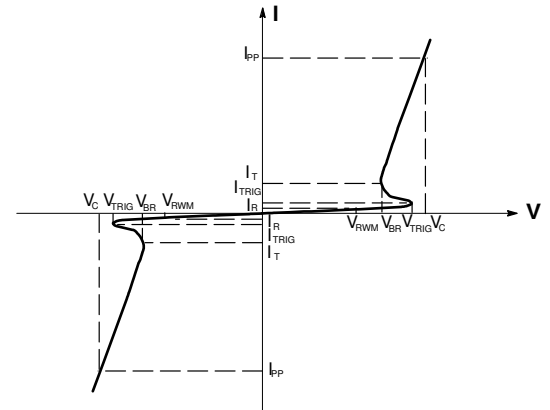
### 3. MAXIMUM RATINGS(Ta = 25°C)

| Parameter  | Symbol | Limits     | Unit |
|--|--------|------------|------|
| IEC 61000-4-2 (ESD) Contact                      |        | $\pm 24$   | kV   |
| Air  |        | $\pm 24$   |      |
| peak pulse power @ 8/20 $\mu\text{s}$ (Note 1)   | PPP    | 120        | W    |
| peak pulse current @ 8/20 $\mu\text{s}$ (Note 1) | IPP    | 3          | A    |
| Storage Temperature Range                        | Tstg   | -55 ~ +150 | °C   |
| Operating Temperature Range                      | TJ     | -55 ~ +150 | °C   |

Note 1. Surge current waveform per Figure 1 according to IEC 61000-4-5.

#### 4. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

| Symbol | Parameter                              |
|--------|--|
| IPP    | Maximum Reverse Peak Pulse Current     |
| VC     | Clamping Voltage @ IPP                 |
| VRWM   | Working Peak Reverse Voltage           |
| IR     | Maximum Reverse Leakage Current @ VRWM |
| VBR    | Breakdown Voltage @ IT                 |
| IT     | Test Current                           |
| VTRIG  |  |
| ITRIG  | Reverse trigger current                |



**Bi-Directional TVS**

#### 5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

| Characteristic   | Symbol | Min. | Typ. | Max      | Unit |
|--|--------|------|------|----------|------|
| reverse stand-off voltage  | VRWM   | -    | -    | 24       | V    |
| reverse leakage current<br>(VRWM = 24 V)   | IRM    | -    | -    | 50       | nA   |
| breakdown voltage<br>(IT = 1 mA)   | VBR    | 26   | -    | 31       | V    |
| Clamping Voltage(Note 1)<br>(IPP = 1A (8 x 20µs pulse))<br>(IPP = 3A (8 x 20µs pulse)) | VC     | -    | -    | 35<br>40 | V    |
| Junction Capacitance<br>(VR = 0V, f = 1MHz)  | CJ     | -    | -    | 15       | pF   |

Note 1. Surge current waveform per Figure 1 according to IEC 61000-4-5.

## 6. ELECTRICAL CHARACTERISTICS CURVES

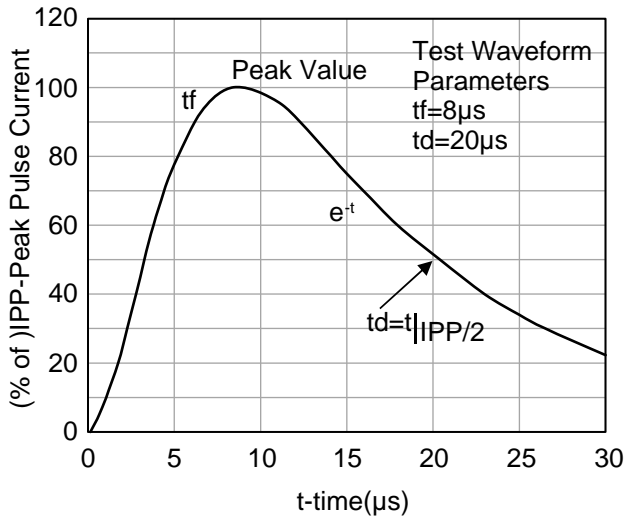


Figure 1. Pulse Waveform according to IEC 61000-4-5

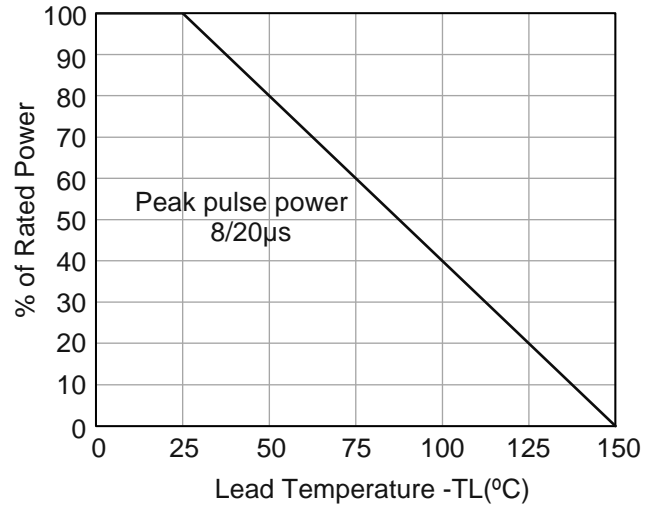


Figure 2. Power Derating Curve

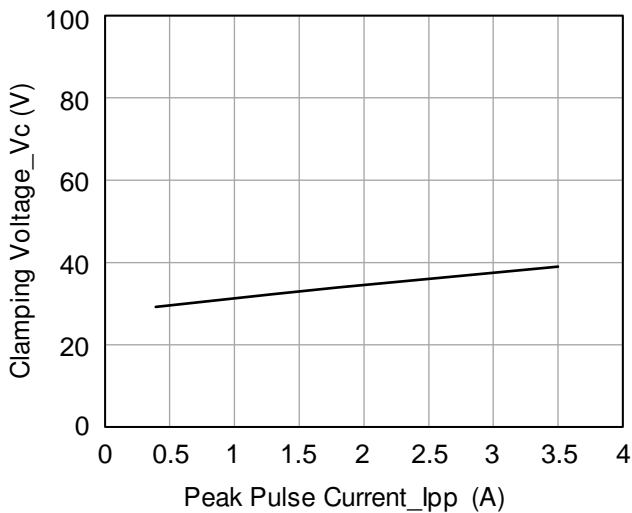


Figure 3. Clamping Voltage vs. Peak Pulse Current according to IEC 61000-4-5.

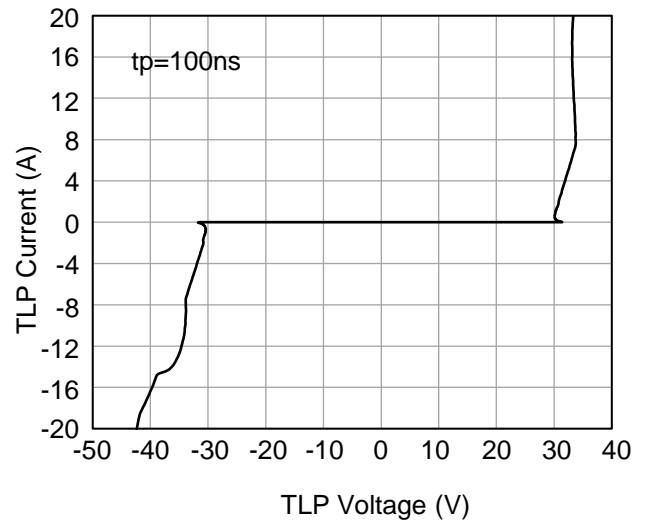


Figure 4. TLP Measurement

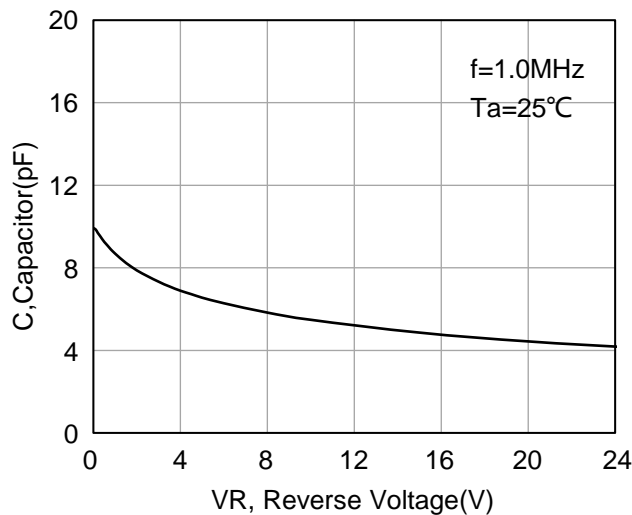
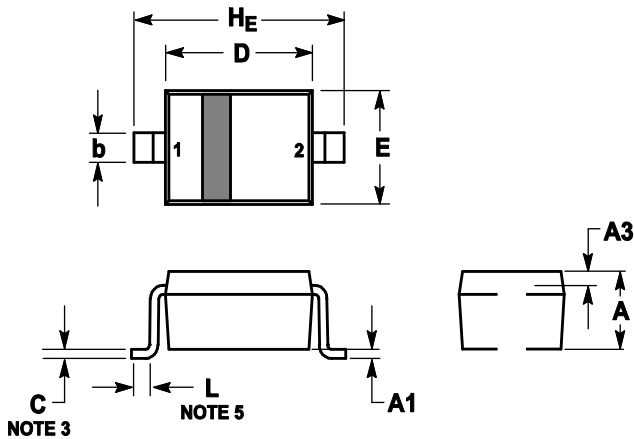


Figure 5. Capacitor Characteristics

## 7. OUTLINE AND DIMENSIONS

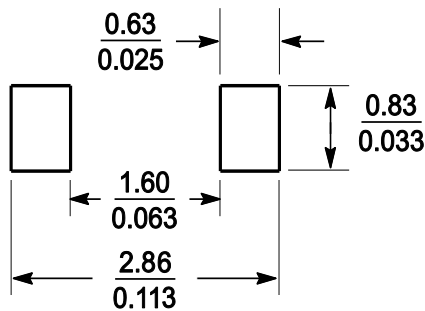
Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.



| DIM            | MILLIMETERS |      |       | INCHES   |       |       |
|----------------|-------------|------|-------|----------|-------|-------|
|                | MIN         | NOM  | MAX   | MIN      | NOM   | MAX   |
| A              | 0.8         | 0.9  | 1     | 0.031    | 0.035 | 0.04  |
| A1             | 0           | 0.05 | 0.1   | 0        | 0.002 | 0.004 |
| A3             | 0.15REF     |      |       | 0.006REF |       |       |
| b              | 0.25        | 0.32 | 0.4   | 0.01     | 0.012 | 0.016 |
| C              | 0.089       | 0.12 | 0.177 | 0.003    | 0.005 | 0.007 |
| D              | 1.6         | 1.7  | 1.8   | 0.062    | 0.066 | 0.07  |
| E              | 1.15        | 1.25 | 1.35  | 0.045    | 0.049 | 0.053 |
| L              | 0.08        |      |       | 0.003    |       |       |
| H <sub>E</sub> | 2.3         | 2.5  | 2.7   | 0.09     | 0.098 | 0.105 |

## 8. SOLDERING FOOTPRINT



## **DISCLAIMER**

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.
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