

# S-LRCAN24T1G

## ESD Protection Diode

### 1. FEATURES

- Ultra low leakage: nA level.
- Low clamping voltage.
- Complies with IEC 61000-4-2 standards: Air discharge:  $\pm 30\text{kV}$   
Contact discharge:  $\pm 30\text{kV}$
- 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. APPLICATIONS

- CAN bus protection
- Automotive applications

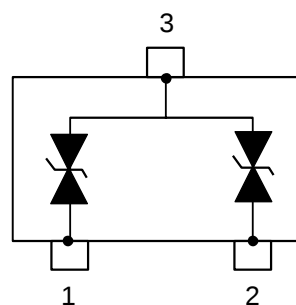
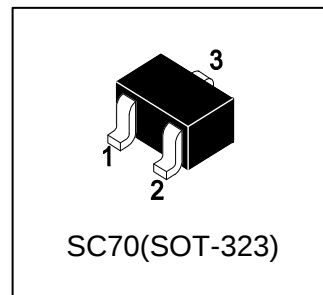
### 3. DEVICE MARKING AND ORDERING INFORMATION

| Device       | Marking | Shipping       |
|--------------|---------|----------------|
| S-LRCAN24T1G | RU      | 3000/Tape&Reel |

### 4. MAXIMUM RATINGS( $T_a = 25^\circ\text{C}$ )

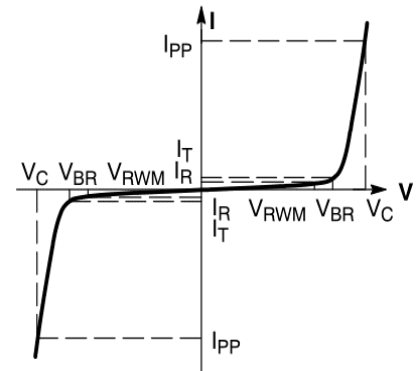
| Parameter                                       | Symbol | Limits          | Unit             |
|-------------------------------------------------|--------|-----------------|------------------|
| IEC 61000-4-2 (ESD) Contact                     |        | $\pm 30$        | kV               |
| Air                                             |        | $\pm 30$        | kV               |
| peak pulse power@8/20 $\mu\text{s}$ (Note 1)    | PPP    | 250             | W                |
| peak pulse current @8/20 $\mu\text{s}$ (Note 1) | IPP    | 3.7             | A                |
| Storage Temperature Range                       | Tstg   | $-55 \sim +150$ | $^\circ\text{C}$ |
| Operating Temperature Range                     | TJ     | $-55 \sim +150$ | $^\circ\text{C}$ |

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



## 5. 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                           |
| IF     | Forward Current                        |
| VF     | Forward Voltage @ IF                   |
| Ppk    | Peak Power Dissipation                 |
| C      | Capacitance @ VR = 0 and f = 1.0 MHz   |



## 6. 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, Pin 1、 2to Pin 3)<br>(VRWM = 24 V, Pin 3 to Pin 1、 2) | IRM    | -    | -    | 200<br>200 | nA   |
| Breakdown voltage<br>(IT = 1 mA, Pin 1、 2to Pin 3 )<br>(IT = 1 mA, Pin 3 to Pin 1、 2 )         | VBR    | 26.5 | -    | 29.7       | V    |
| Clamping Voltage (Note 1)<br>(IPP = 1A (8 x 20μs pulse)<br>(IPP = 3.7A (8 x 20μs pulse)        | VC     | -    | -    | 35<br>41   | V    |
| Junction Capacitance<br>(VR = 0V, f = 1MHz)                                                    | CJ     | -    | -    | 30         | pF   |

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

## 7. ELECTRICAL CHARACTERISTIC CURVES

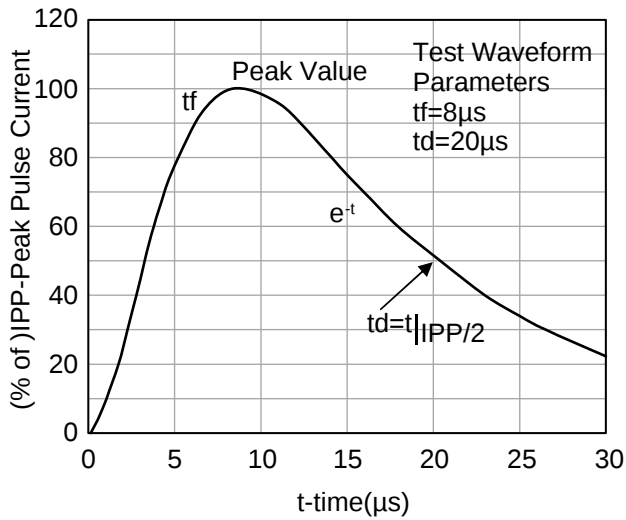


Figure 1. Pulse Waveform according to IEC 61000-4-5

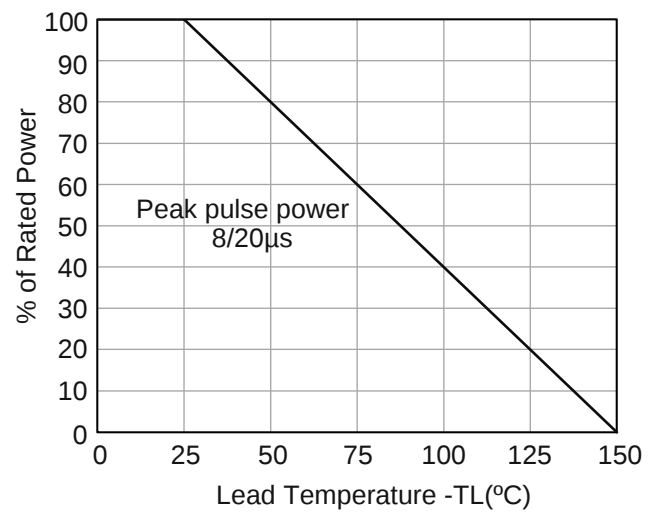


Figure 2. Power Derating Curve

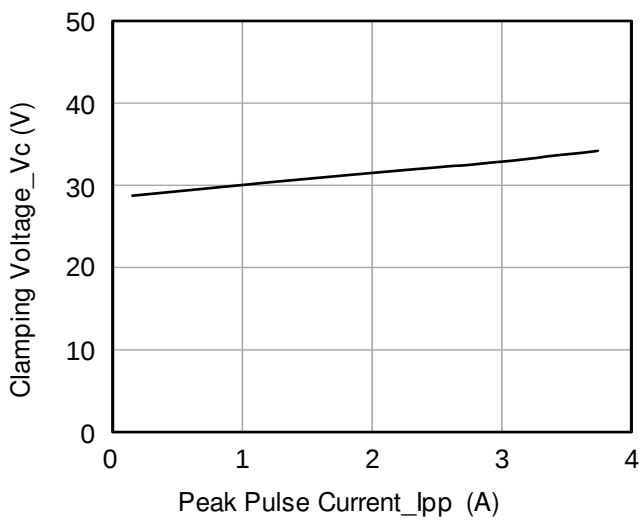


Figure 3. Clamping Voltage vs. Peak Pulse Current according to IEC 61000-4-5.

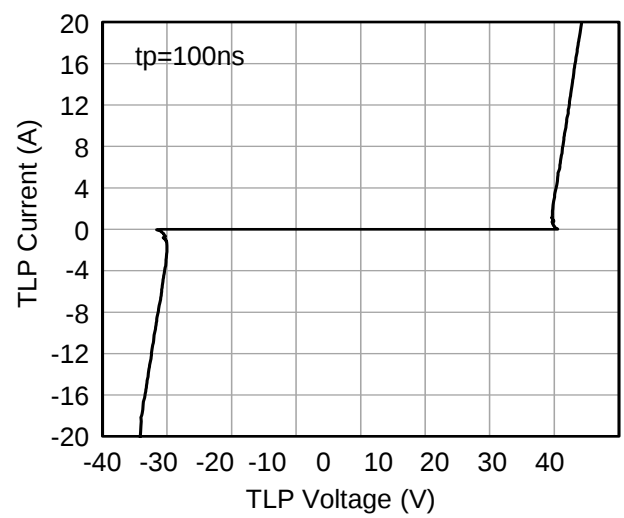
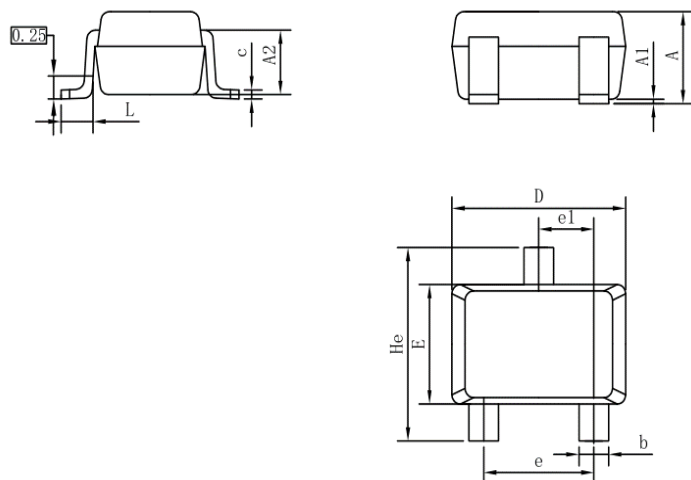


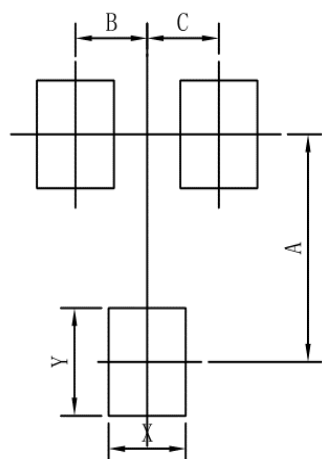
Figure 4. TLP Measurement

## 8.OUTLINE AND DIMENSIONS



| SC70                |          |      |      |
|---------------------|----------|------|------|
| DIM                 | MIN      | NOR  | MAX  |
| A                   | 0.80     | 0.95 | 1.00 |
| A1                  | 0.00     | 0.05 | 0.10 |
| A2                  | 0.7 REF  |      |      |
| b                   | 0.30     | 0.35 | 0.40 |
| c                   | 0.10     | 0.15 | 0.25 |
| D                   | 1.80     | 2.05 | 2.20 |
| E                   | 1.15     | 1.30 | 1.35 |
| e                   | 1.20     | 1.30 | 1.40 |
| e1                  | 0.65 BSC |      |      |
| L                   | 0.20     | 0.35 | 0.56 |
| He                  | 2.00     | 2.10 | 2.40 |
| ALL Dimension in mm |          |      |      |

## 9.SOLDERING FOOTPRINT



| SC70 |      |
|------|------|
| DIM  | MIN  |
| A    | 1.90 |
| B    | 0.65 |
| C    | 0.65 |
| X    | 0.70 |
| Y    | 0.90 |

## **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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