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# ESD2CANXL24DBZR-TP

**2-Line bi-directional TVS Diode**

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## Features

- 90W peak pulse power(8/20μs)
- Ultra low leakage：nA level
- Operating voltage：24V
- Low clamping voltage
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±25kV
    Contact discharge: ±20kV
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 2A (8/20μs)
- RoHS Compliant

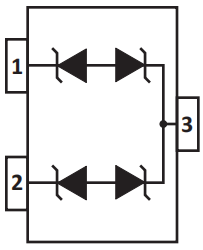
## Mechanical Characteristics

- Package: SOT-23
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J STD 020
- Shipping Qty :3000pcs/7Inch Tape & Reel

## Applications

- Cellular Handsets and Accessories
- Notebooks and Handhelds
- Portable Instrumentation
- Set Top Box
- Industrial Controls
- CAN Bus Protection
- Automotive Appllcatrons

## Dimensions and Pin Configuration



## Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Peak Pulse Power (8/20μs) | Ppk | 90 | W |
| Peak Pulse Current (8/20μs) | $I_{PP}$ | 2 | A |
| ESD per IEC 61000−4−2 (Air)<br>ESD per IEC 61000−4−2 (Contact) | $V_{ESD}$ | ± 25<br>± 20 | kV |
| Operating Temperature Range | $T_J$ | −55 to +125 | °C |
| Storage Temperature Range | Tstg | −55 to +150 | °C |

## Electrical Characteristics (TA=25°C unless otherwise specified)

| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
|---|---|---|---|---|---|---|
| Reverse Working Voltage | $V_{RWM}$ | | | 24 | V | |
| Breakdown Voltage | $V_{BR}$ | 26.7 | | | V | $I_T$ = 1mA |
| Reverse Leakage Current | $I_R$ | | | 0.08 | μA | $V_{RWM}$ = 24V |
| Forward Voltage | $V_F$ | | 0.8 | 1.2 | V | $I_F$ = 10mA |
| Clamping Voltage | $V_C$ | | | 39 | V | $I_{PP}$ = 1A (8 x 20μs pulse) |
| Clamping Voltage | $V_C$ | | | 43 | V | $I_{PP}$ = 2A (8 x 20μs pulse) |
| Junction Capacitance | $C_J$ | | 2 | | pF | VR=0, f=1MHz, Pin 1 to Pin 2 |

## Typical Performance Characteristics ($T_A$=25°C unless otherwise Specified)

**Fig1. 8/20μs Pulse Waveform**

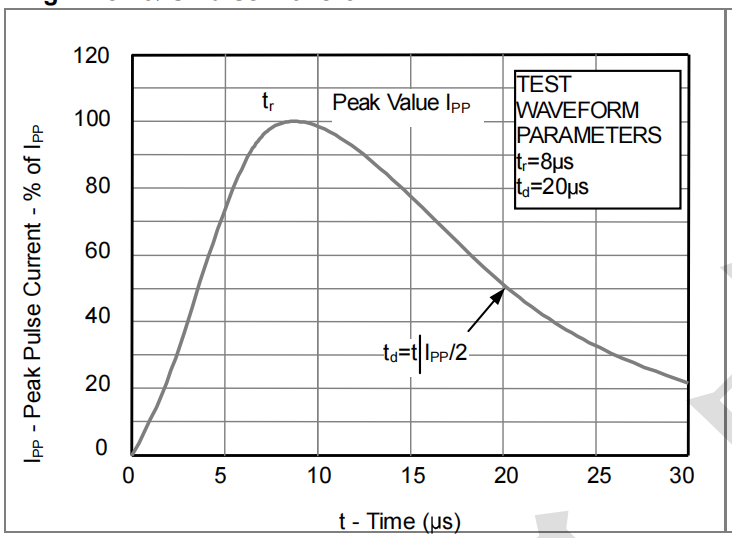



**Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)**

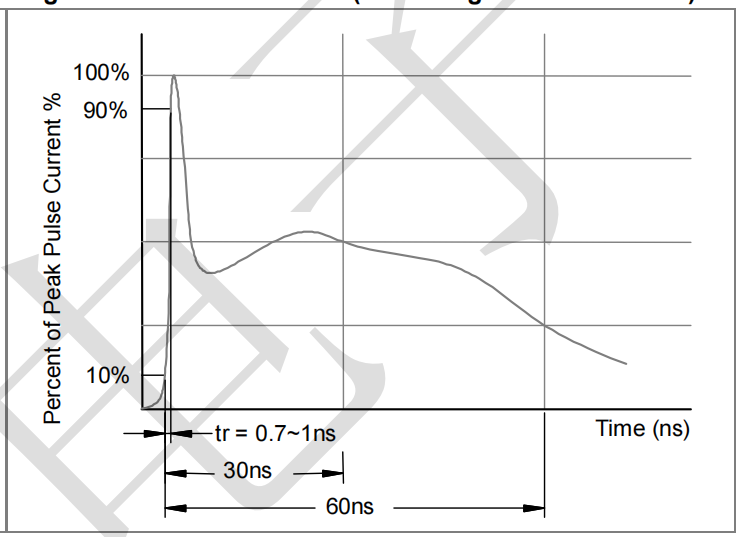
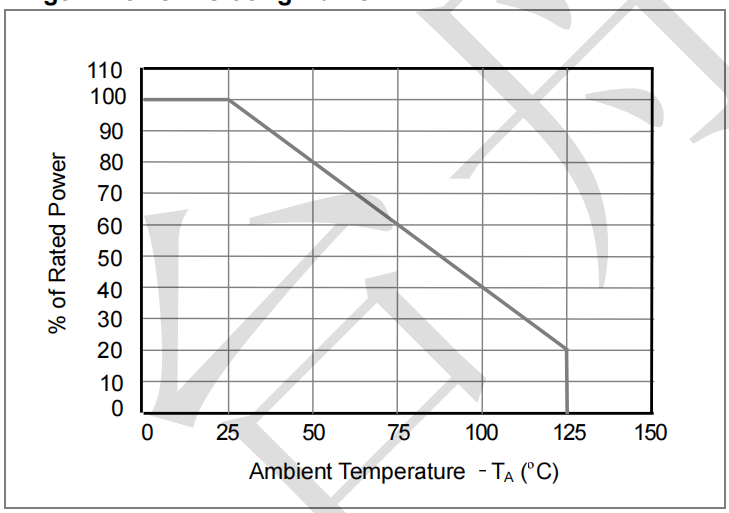
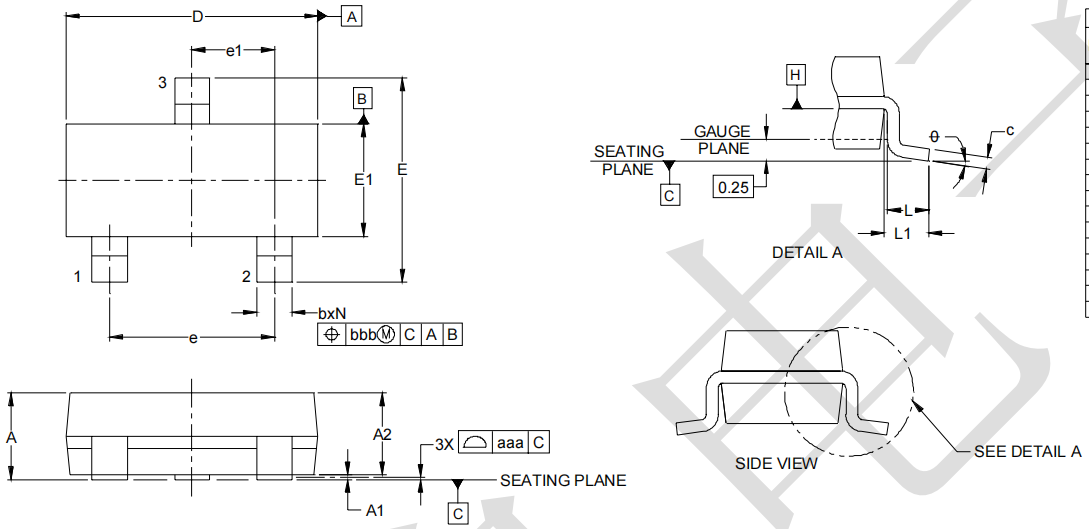



**Fig3. Power Derating Curve**

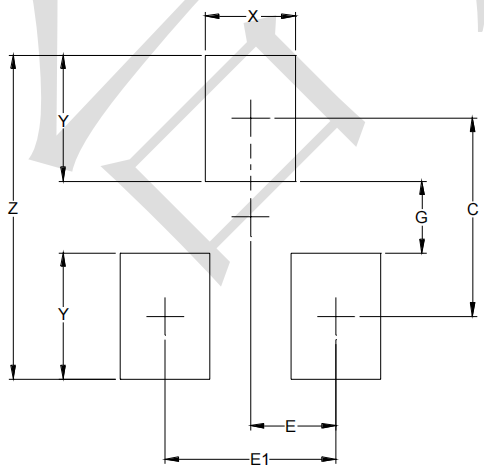


## Outline Drawing - SOT23




| DIM | DIMENSIONS | | | | | |
|---|---|---|---|---|---|---|
| | INCHES | | | MILLIMETERS | | |
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | .035 | - | .044 | 0.89 | - | 1.12 |
| A1 | .000 | - | .004 | 0.01 | - | 0.10 |
| A2 | .035 | .037 | .040 | 0.88 | 0.95 | 1.02 |
| b | .012 | - | .020 | 0.30 | - | 0.51 |
| c | .003 | - | .007 | 0.08 | - | 0.18 |
| D | .110 | .114 | .120 | 2.80 | 2.90 | 3.04 |
| E | .082 | .093 | .104 | 2.10 | 2.37 | 2.64 |
| E1 | .047 | .051 | .055 | 1.20 | 1.30 | 1.40 |
| e | .075 | | | 1.90 BSC | | |
| e1 | .037 | | | 0.95 BSC | | |
| L | .015 | .020 | .024 | 0.40 | 0.50 | 0.60 |
| L1 | .022 | | | (0.55) | | |
| N | 3 | | | 3 | | |
| θ | 0° | - | 8° | 0° | - | 8° |
| aaa | .004 | | | 0.10 | | |
| bbb | .008 | | | 0.20 | | |

## Land Pattern - SOT23




| DIMENSIONS | | |
|---|---|---|
| DIM | INCHES | MILLIMETERS |
| C | (.087) | (2.20) |
| E | .037 | 0.95 |
| E1 | .075 | 1.90 |
| G | .031 | 0.80 |
| X | .039 | 1.00 |
| Y | .055 | 1.40 |
| Z | .141 | 3.60 |

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TPESD5311N TPSPX3819M5-L-3-3 TPWSB5557Z BSN20W BV15C ESD5B5.0ST1G-P IRFR2405TRPBF-TP QM3003J-TP TPESD0504S6-A TPS7B6950DBVR-TP DDTA143ZCA TPB05A40-323 TPB1A30-123 TPZVN3320FTA TPZXMP3A13FTA SI3932DV SN7002W TPD1213A-02SM FDC6301N-TP TPADM809LAKSZ FDMS7670AS-TP TPDMG6602SVT TPGC12C-1 DMP6350S LTH7 TPADM809SAKSZ TPAPX809S-31SA TPFMMT493 TPESD0402G08V TPS3809L30DBVR-TP