

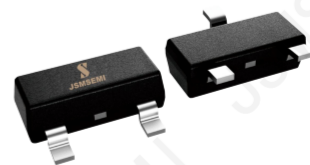
## DESCRIPTION

The PESD12VL2BT,215-JSM is designed for applications requiring transient over voltage protection capability.

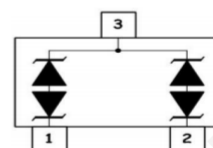
They are intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines, communication systems, medical equipment and other applications.

These devices are ideal for situations where board space is at a premium.

This series has been specifically designed to protect sensitive components which are connected to power, data and transmission lines from over voltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EF (electrical fast transients).



SOT-23



PIN CONFIGURATION

## FEATURES

- ◆ IEC61000-4-2 (ESD)  $\pm 30\text{kV}$  (Contact)  
 $\pm 30\text{kV}$  (Air)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ 350 (200) Watts Peak Pulse Power per  
( $t_p=8/20\mu\text{s}$ )
- ◆ Protects two bidirectional lines
- ◆ Low clamping voltage
- ◆ Working voltages: 3.3V to 24V
- ◆ Low leakage current

## APPLICATIONS

- ◆ Cell Phone Handsets and Accessories
- ◆ Microprocessor based equipment
- ◆ Personal Digital Assistants (PDA's)
- ◆ Notebooks, Desktops, and Servers
- ◆ Portable Instrumentation
- ◆ Networking and Telecom
- ◆ Serial and Parallel Ports.
- ◆ Peripherals

## MECHANICAL DATA

- ◆ SOT-23 package
- ◆ Packaging: Tape and Reel
- ◆ High temperature soldering guaranteed:  
260°C/10s
- ◆ Reel size: 7 inch
- ◆ MSL 1

**ABSOLUTE MAXIMUM RATING**

| Symbol    | Parameter                                      | Value         | Units |
|-----------|------------------------------------------------|---------------|-------|
| $V_{ESD}$ | ESD per IEC 61000-4-2 (Contact)                | $\pm 30$      | kV    |
|           | ESD per IEC 61000-4-2 (Air)                    | $\pm 30$      |       |
| $P_{PP}$  | Peak Pulse Power (8/20 $\mu$ s) (3V3、5V0L2BT)  | 350           | W     |
| $P_{pp}$  | Peak Pulse Power (8/20 $\mu$ s) (12、15、24L2BT) | 200           | W     |
| $T_{OPT}$ | Operating Temperature                          | -55/+150      | °C    |
| $T_{STG}$ | Storage Temperature                            | -55/+150      | °C    |
| $T_L$     | Lead Soldering Temperature                     | 260 (10 sec.) | °C    |

**ELECTRICAL CHARACTERISTICS (Tamb=25°C)**

| PART<br>NUMBER      | $V_{RWM}$<br>(V)<br>(max.) | $V_B$<br>(V)<br>(min.) | $I_T$<br>(mA) | $V_C@1A$<br>(V)<br>(max.) | $V_C$<br>(V)<br>(max.) (@A) |    | $I_R$<br>( $\mu$ A)<br>(max.) | $C_J$<br>(pF)<br>(max.) |
|---------------------|----------------------------|------------------------|---------------|---------------------------|-----------------------------|----|-------------------------------|-------------------------|
| PESD3V3L2BT,215-JSM | 3.3                        | 5.8                    | 1             | 7.5                       | 23.0                        | 15 | 2                             | 120                     |
| PESD5V0L2BT,215-JSM | 5.0                        | 7.0                    | 1             | 9.8                       | 24.0                        | 13 | 1                             | 100                     |
| PESD12VL2BT,215-JSM | 12.0                       | 14.2                   | 1             | 19.0                      | 35.0                        | 5  | 0.05                          | 25                      |
| PESD15VL2BT,215-JSM | 15.0                       | 17.1                   | 1             | 25.0                      | 43.0                        | 5  | 0.05                          | 22                      |
| PESD24VL2BT,215-JSM | 24.0                       | 25.4                   | 1             | 39.0                      | 58.0                        | 3  | 0.05                          | 18                      |

## ELECTRICAL CHARACTERISTICS CURVE

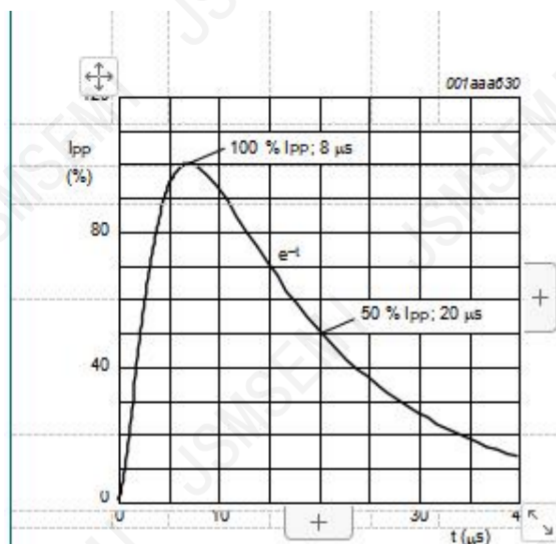


Fig 1. 8/20  $\mu$ s pulse waveform according to IEC 61000-4-5

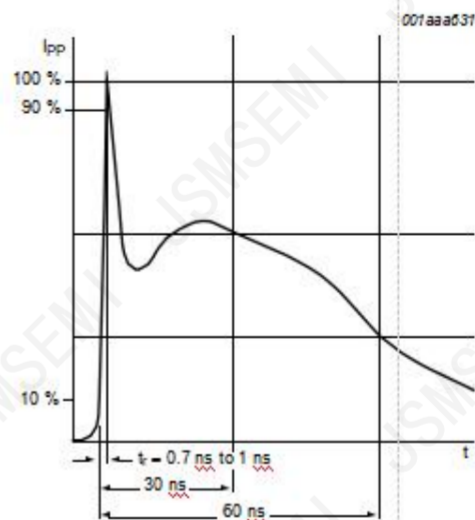
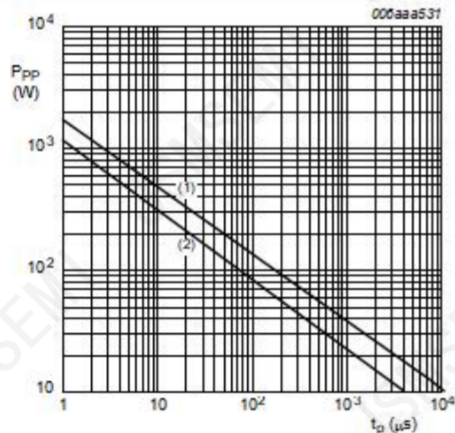


Fig 2. ESD pulse waveform according to IEC 61000-4-2



$T_{amb} = 25^{\circ}C$   
(1) PESD3V3L2BT and PESD5V0L2BT  
(2) PESD12VL2BT, PESD15VL2BT, PESD24VL2BT

Fig 3. Peak pulse power as a function of exponential pulse duration  $t_p$ ; typical values

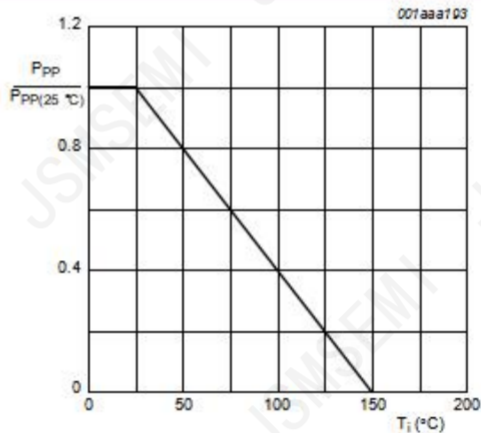
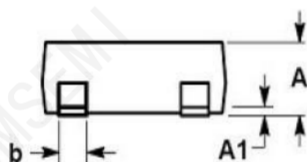
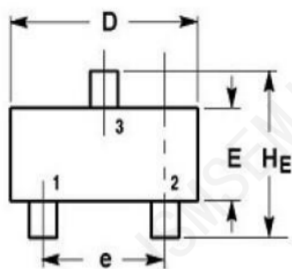


Fig 4. Relative variation of peak pulse power as a function of junction temperature; typical values

## SOT-23 PACKAGE OUTLINE DIMENSIONS



| DIM | MILLIMETERS |      |      | INCHES |       |       |
|-----|-------------|------|------|--------|-------|-------|
|     | MIN         | NOM  | MAX  | MIN    | NOM   | MAX   |
| A   | 0.89        | 1.00 | 1.11 | 0.035  | 0.040 | 0.044 |
| A1  | 0.01        | 0.06 | 0.10 | 0.001  | 0.002 | 0.004 |
| b   | 0.37        | 0.44 | 0.50 | 0.015  | 0.018 | 0.020 |
| c   | 0.09        | 0.13 | 0.18 | 0.003  | 0.005 | 0.007 |
| D   | 2.80        | 2.90 | 3.04 | 0.110  | 0.114 | 0.120 |
| E   | 1.20        | 1.30 | 1.40 | 0.047  | 0.051 | 0.055 |
| e   | 1.78        | 1.90 | 2.04 | 0.070  | 0.075 | 0.081 |
| L   | 0.35        | 0.54 | 0.69 | 0.014  | 0.021 | 0.029 |
| HE  | 2.10        | 2.40 | 2.64 | 0.083  | 0.094 | 0.104 |

## Revision History

| Rev. | Change          | Date      |
|------|-----------------|-----------|
| V1.0 | Initial version | 2/23/2024 |
|      |                 |           |

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