

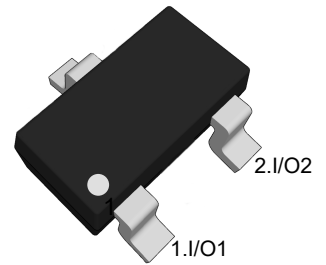
ESD2B5V0ASA

Transient Voltage Suppressor

Descriptions

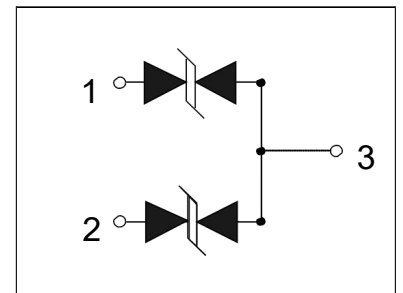
Designed to protect voltage sensitive electronic components from ESD and other transients. Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD. The combination of small size, low capacitance, and high level of ESD protection makes them a flexible solution for applications such as HDMI, Display Port TM, and MDDI interfaces. It is designed to replace multiplayer varistors (MLV) in consumer equipments applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

SOT-23



Features

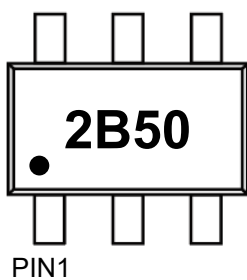
- Uni-directional ESD Protection of two lines
- Low reverse stand-off voltage: 5V
- Low reverse clamping voltage
- Low leakage current
- Fast response time
- IEC 61000-4-2(ESD) : $\pm 30\text{KV}$ (Air Model), $\pm 30\text{KV}$ (Contact Model)



Applications

- Computers and peripherals
- Audio and video equipment
- High Definition Multi-Media Interface (HDMI)
- Cell phone

Marking Code



Absolute Maximum Ratings (T_A=25°C)

Rating	Symbol	Value	Units
Peak Pulse Power (t _p =8/20μs)	P _{PP}	350	Watts
Peak Pulse Current (t _p =8/20μs) (note1)	I _{pp}	17	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V _{ESD}	30 30	kV
Lead Soldering Temperature	T _L	260(10seconds)	°C
Junction Temperature	T _J	-55 to + 125	°C
Storage Temperature	T _{stg}	-55 to + 125	°C

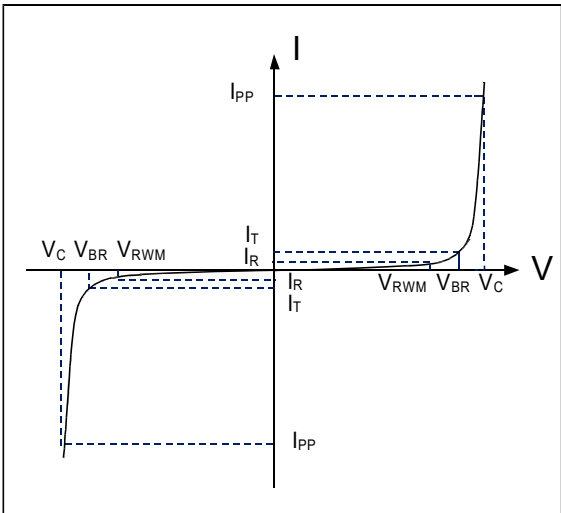
Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V _{RWM}				5	V
Reverse Breakdown Voltage	V _{BR}	I _T =1mA	6.0	7.2	8.5	V
Reverse Leakage Current	I _R	V _{RWM} =5V, T=25°C		0.1	0.5	μA
Peak Pulse Current	I _{PP}	t _p =8/20μs			22	A
Clamping Voltage	V _C	I _{PP} =17A, t _p =8/20μs			20	V
Junction Capacitance	C _j	V _R = 0V, f = 1MHz (Pin1 、 Pin2 to Pin3)		65	75	pF

Electrical Parameters (T_A = 25°C unless otherwisenoted)

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}
V _{BR}	Breakdown Voltage @ I _T
I _T	Test Current

Note:.. 8/20μs pulsewaveform.



Typical Characteristic Curves

Figure 1: Peak Pulse Power vs. Pulse Time

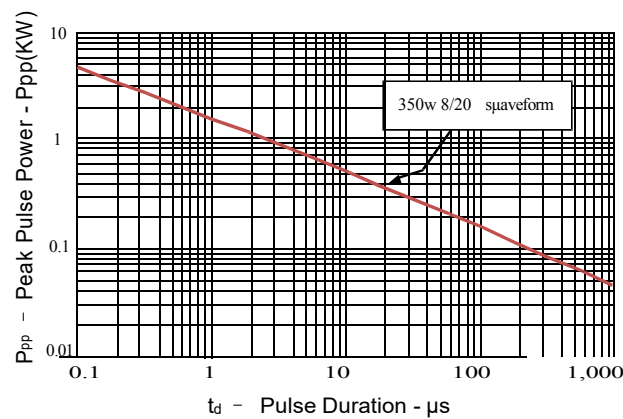


Figure 2: Power Derating Curve

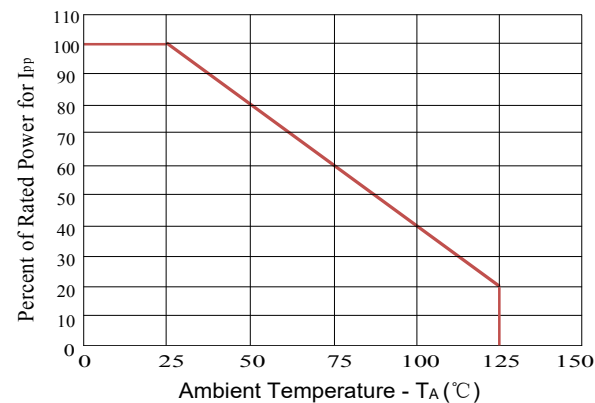


Figure3: Pulse Waveform

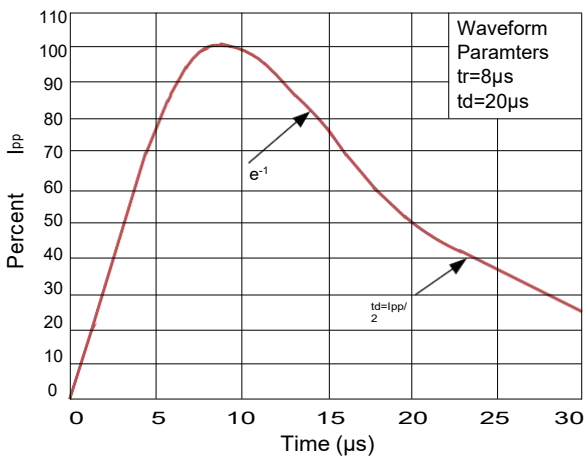
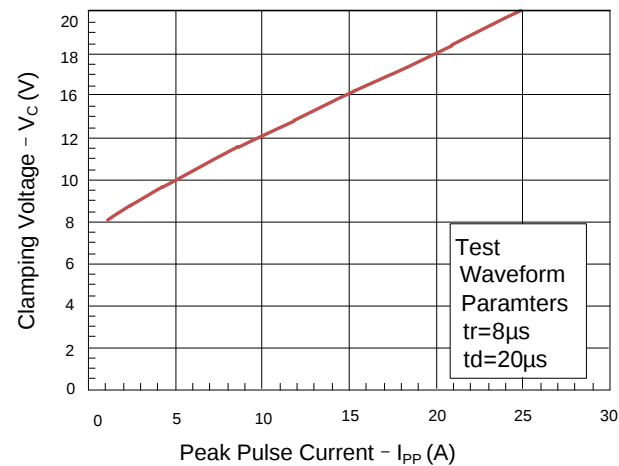


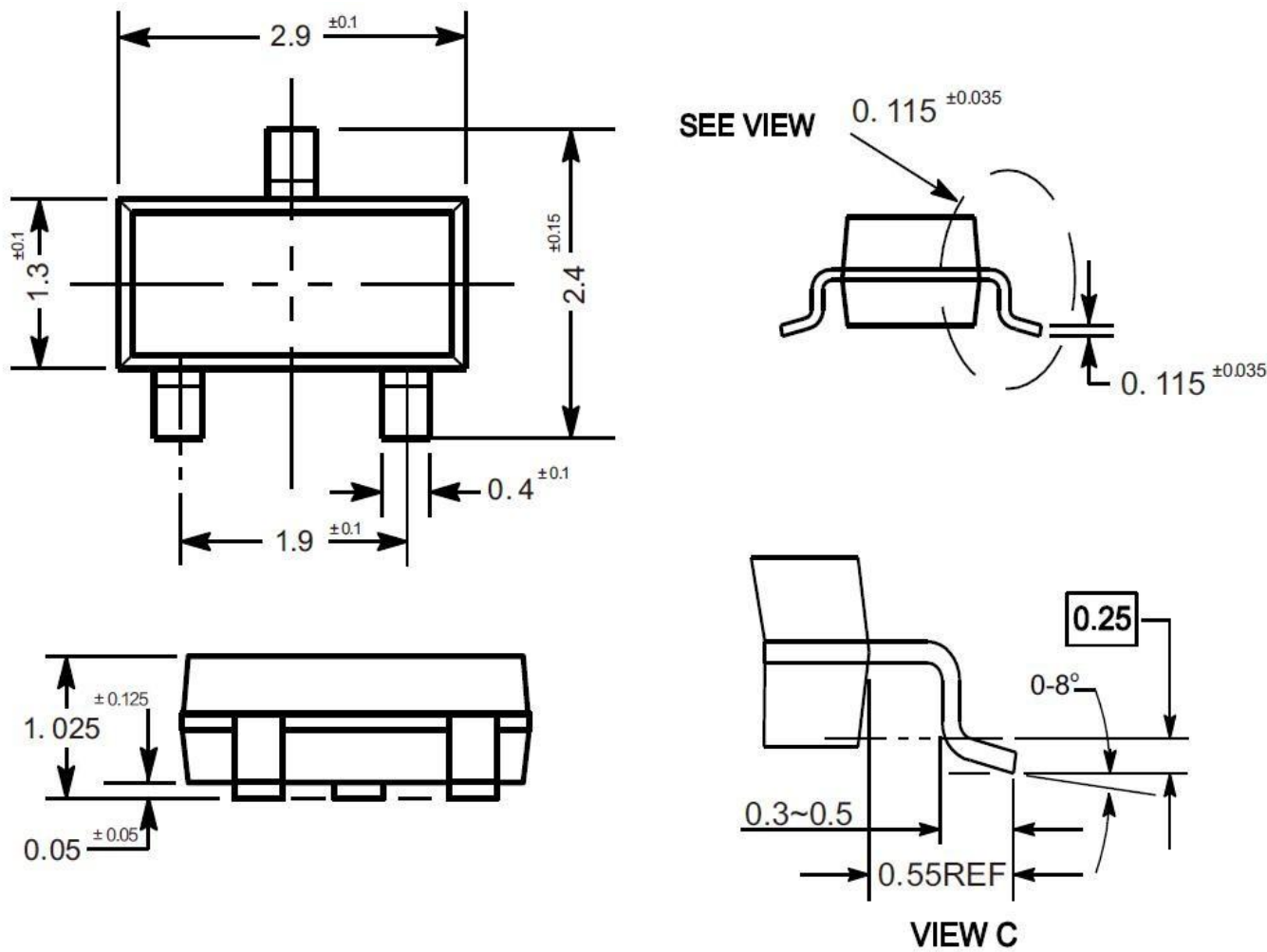
Figure 4: Clamping Voltage vs. Ipp



Package Outline

SOT-23

Dimensions in mm

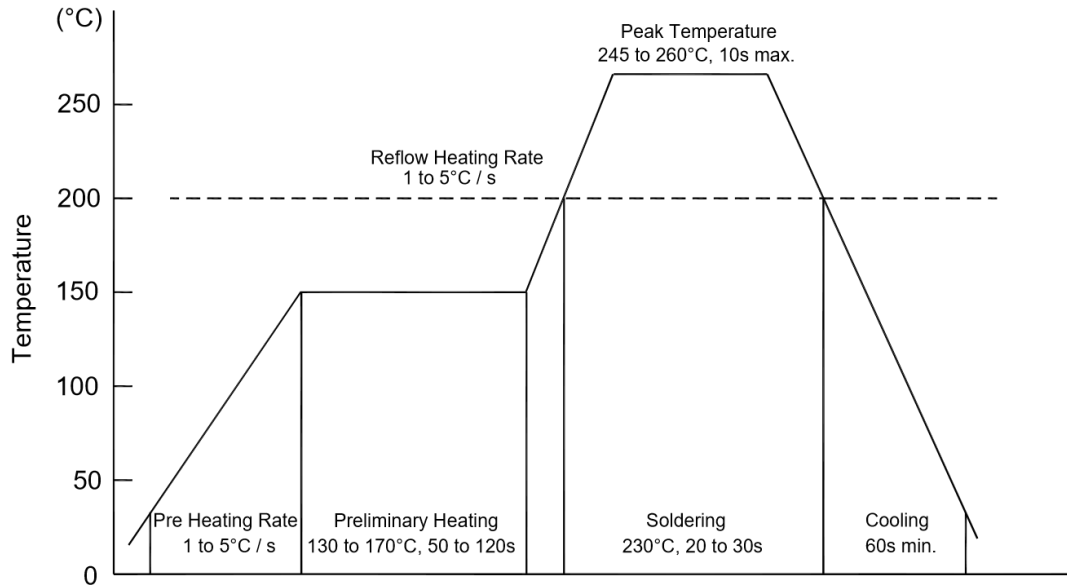


Ordering Information

Device	Package	Shipping
ESD2B5V0ASA	SOT-23	3,000PCS/Reel&7inches

Conditions of Soldering and Storage

◆ Recommended condition of reflow soldering



Recommended peak temperature is over 245 °C. If peak temperature is below 245 °C, you may adjust the following parameters:

- Time length of peak temperature (longer)
- Time length of soldering (longer)
- Thickness of solder paste (thicker)

◆ Conditions of hand soldering

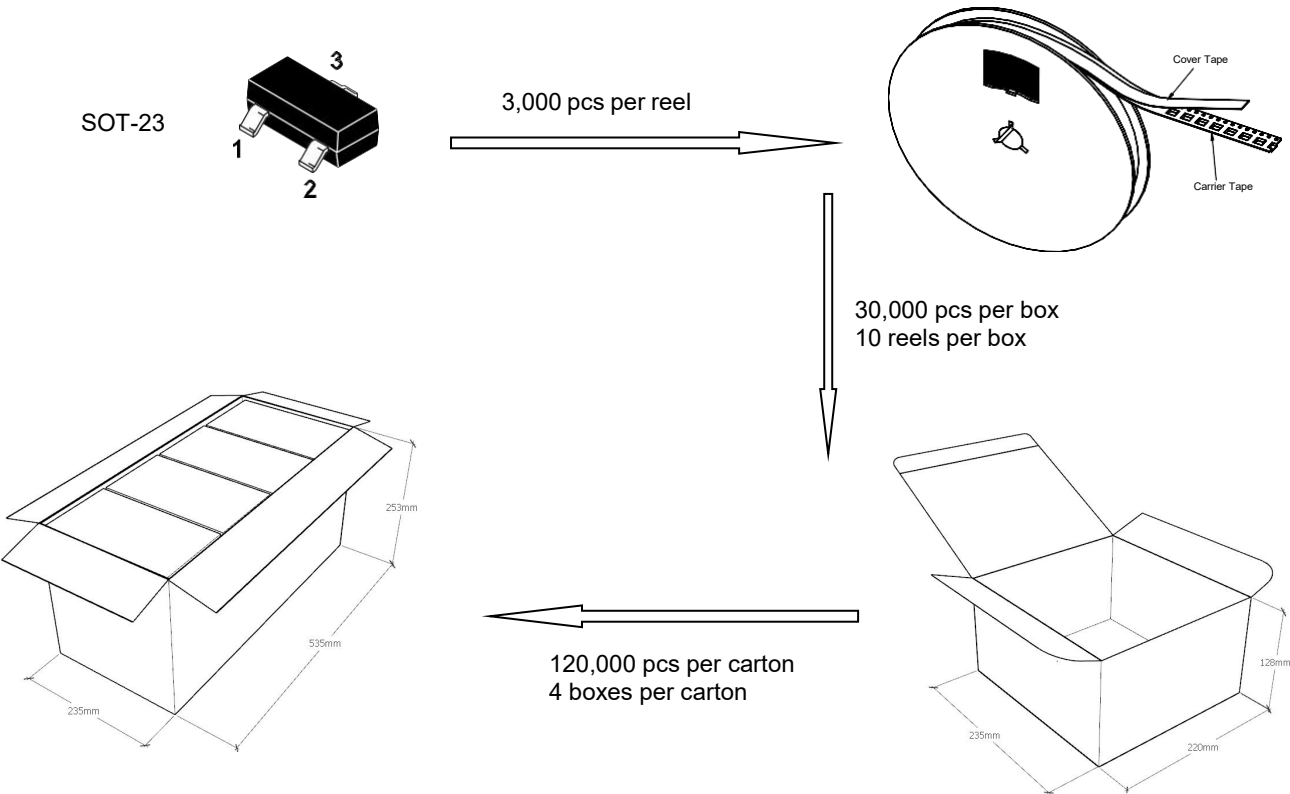
- Temperature: 370 °C
- Time: 3s max.
- Times: one time

◆ Storage conditions

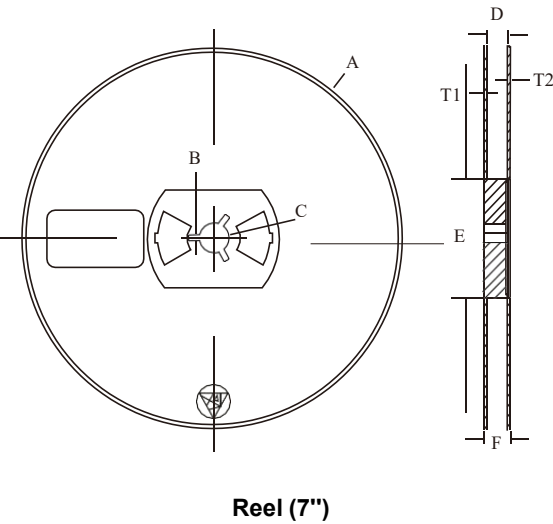
- **Temperature**
5 to 40 °C
- **Humidity**
30 to 80% RH
- **Recommended period**
One year after manufacturing

Package Specifications

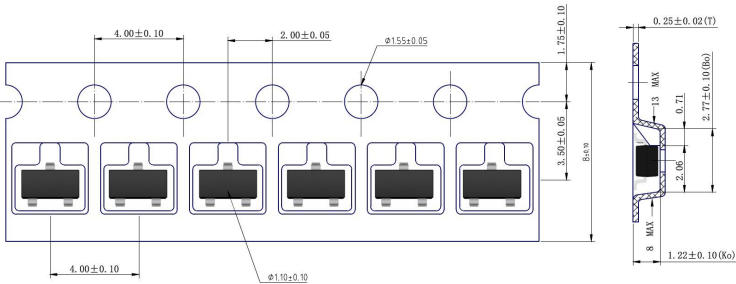
- The method of packaging



◆ Embossed tape and reel data



Symbol	Value (unit: mm)
A	Ø 177.8±1
B	2.7±0.2
C	Ø 13.5±0.2
E	Ø 54.5±0.2
F	12.3±0.3
D	9.6+2/-0.3
T1	1.0±0.2
T2	1.2±0.2



Contact Information

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Product Specification Statement

The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. TANI shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and TANI assumes no responsibility for the application of the product. TANI strives to provide accurate and up-to-date information to the best of our ability. However, due to technical, human, or other reasons, TANI cannot guarantee that the information provided in the product specification is entirely accurate and error-free. TANI shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications.

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