

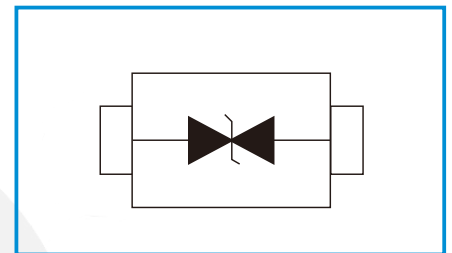
Transient Voltage Suppressors for ESD Protection

Features

- IEC61000-4-2 (ESD) $\pm 30\text{kV}$ (air),
 $\pm 30\text{kV}$ (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- Peak power dissipation: 60W (8/20 μs)
- Protects one I/O line
- Low clamping voltage
- Working voltages : 3.3V
- Low leakage current
- Marking: 3C ∞



Functional Diagram



Mechanical Data

- SOD-523 package
- Flammability Rating: UL 94V-0
- High temperature soldering guaranteed: 260°C/10s
- Packaging: Tape and Reel
- Reel size: 7 inch

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

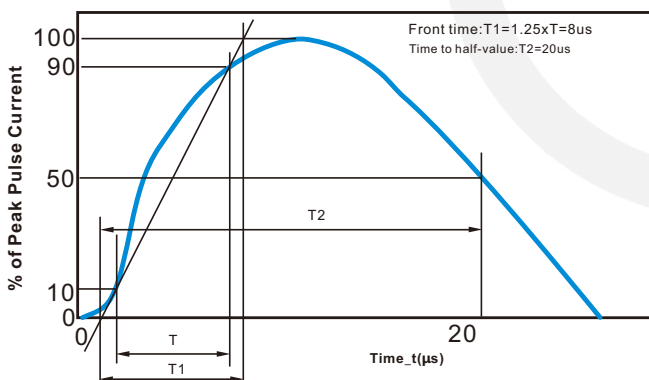
Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

Symbol	Parameter	Value	Units
V _{ESD}	ESD per IEC 61000-4-2 (Air)	± 30	kV
	ESD per IEC 61000-4-2 (Contact)	± 30	
P _{PP}	Peak Pulse Power (8/20 μs)	60	W
T _{OPT}	Operating Temperature	-40~150	°C
T _{STG}	Storage Temperature	-40~150	°C

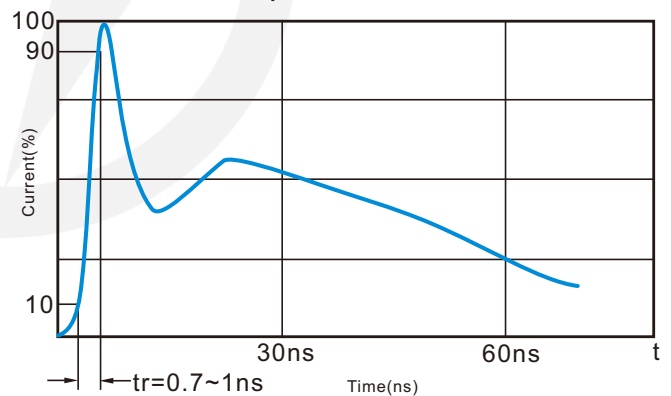
Electrical Characteristics (TA=25°C unless otherwise specified)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage				3.3	V
V_{BR}	Reverse Breakdown Voltage	$I_T = 1\text{mA}$	3.6			V
I_R	Reverse Leakage Current	$V_{RWM} = 3.3\text{V}$			1.0	μA
V_C	Clamping Voltage	$I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$			6.5	V
V_C	Clamping Voltage	$I_{PPmax} = 5\text{A}, t_p = 8/20\mu\text{s}$			12.0	V
V_{CTLP}	TLP Clamping Voltage	$I_{PP} = 16\text{A}$ IEC61000-4-2 Level 4 equivalent ($\pm 8\text{kV}$ Contact, $\pm 15\text{kV}$ Air)		9		V
C_J	Junction Capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$			16.5	pF

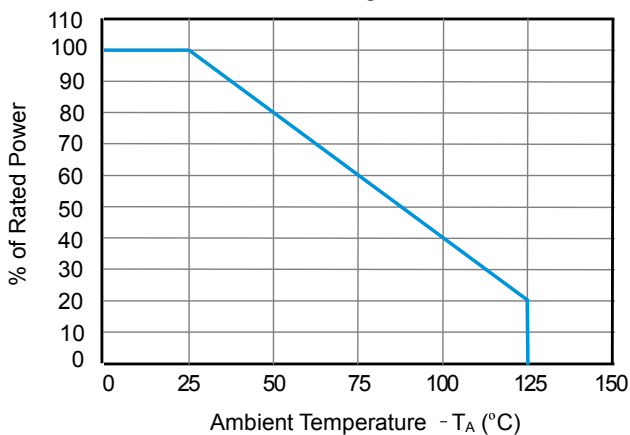
Characteristic Curves

 8x20 μs Waveform per IEC61000-4-5


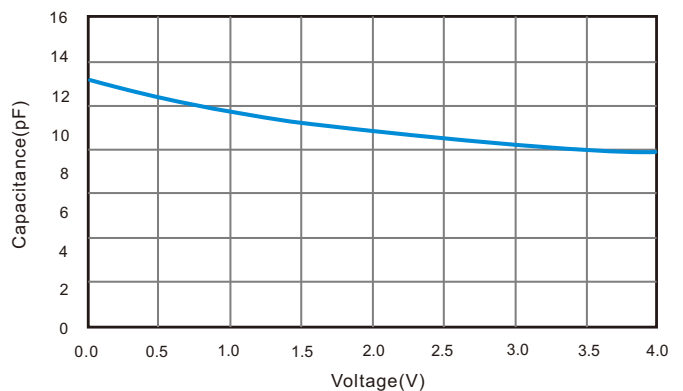
Contact Discharge Current Waveform per IEC 61000-4-2

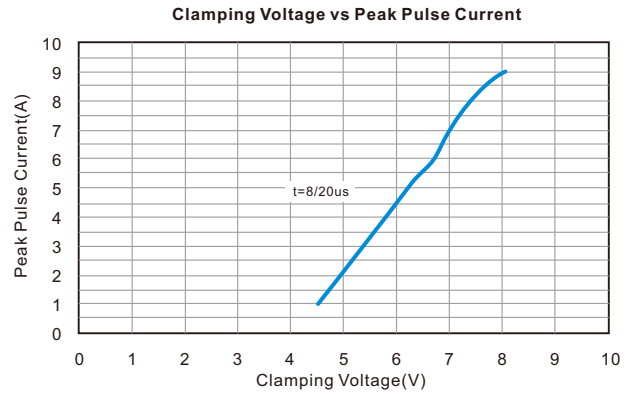
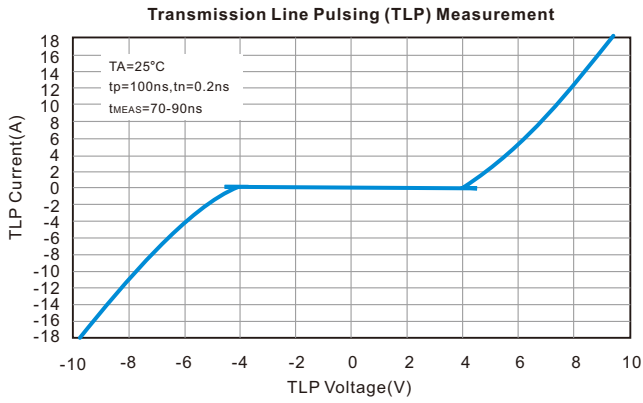


Power Derating Curve

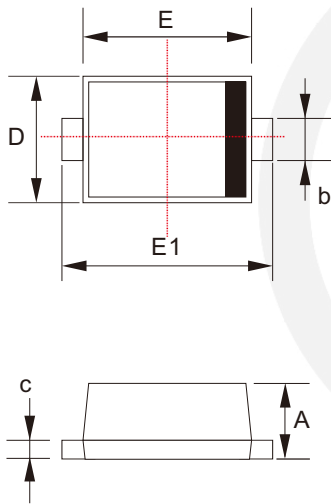


Voltage vs Capacitance



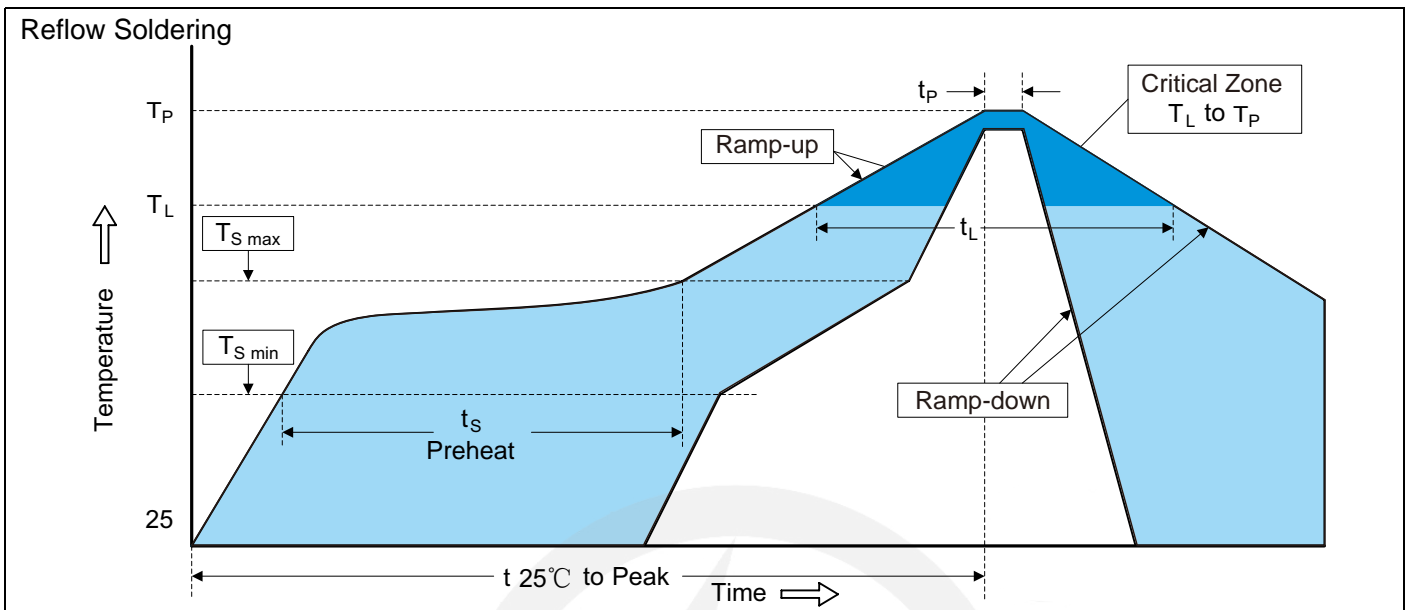


SOD-523 PACKAGE OUTLINE

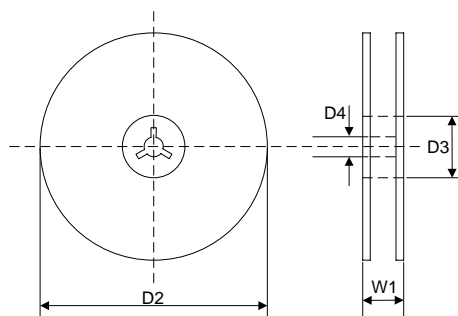


Unit: mm

SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.500	0.770
b	0.250	0.380
c	0.070	0.200
D	0.700	0.900
E	1.100	1.300
E1	1.500	1.700

Recommended Soldering Conditions

Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (t_s)	150°C 200°C 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	3°C/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	217°C 60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

7" Reel


D2	$\Phi 178.0 \pm 2.0$
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D3	$\Phi 50.0 \text{ Min.}$
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D4	$\Phi 13.0 \pm 0.5$
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W1	16.0 ± 2.0
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Quantity: 3000PCS