

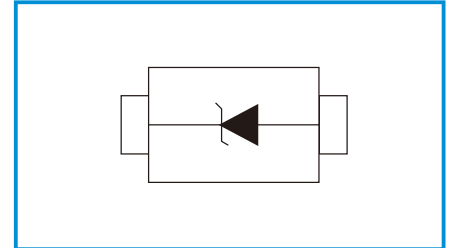
Transient Voltage Suppressors

Features

- IEC61000-4-2 Level 4 ESD Protection
- Protects one directional I/O line
- Low clamping voltage
- Working voltages : 24V
- Low leakage current
- Marking: 5S



Functional Diagram

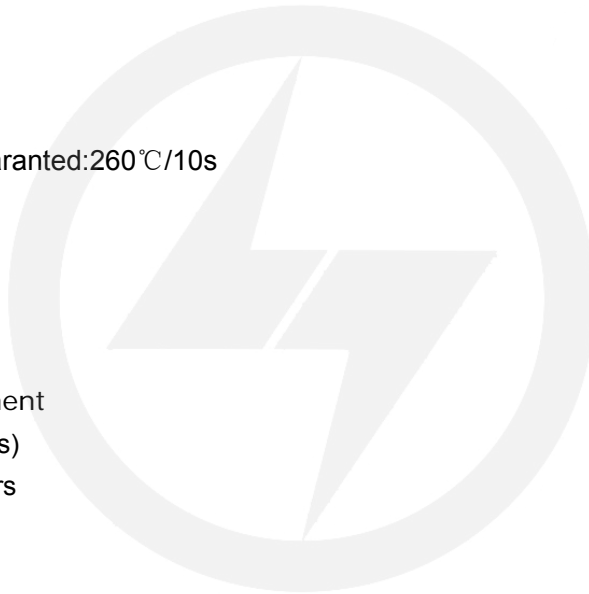


Mechanical Data

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

Applications

- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Peripherals
- Pagers



Absolute Maximum Rating

Symbol	Parameter	Value	Unit
V_{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	± 15 ± 8	kV
P_D	Total Power Dissipation on FR-5 Board (Note 1) @ $T_a=25^\circ\text{C}$	150	mW
T_{OPT}	Operating Temperature	-55~125	$^\circ\text{C}$
T_{STG}	Storage Temperature	-55~150	$^\circ\text{C}$

These ratings are limiting values above which the serviceability of the diode may be impaired.

Note 1: FR-5=1.0x0.75x0.62 in.

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

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage				24	V
V_{BR}	Reverse Breakdown Voltage	$I_T = 1\text{mA}$	26			V
I_R	Reverse Leakage Current	$V_{RWM} = 24\text{V}$			5	μA
V_C	Clamping Voltage	$I_{PP} = 1\text{A}$, $t_p = 8/20\mu\text{s}$			35	V
C_J	Junction Capacitance	$V_R = 0\text{V}$, $f = 1\text{MHz}$			50	pF

Characteristic Curves

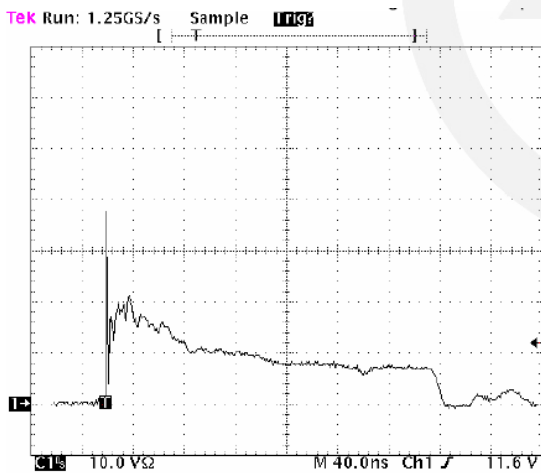


Figure 1. ESD Clamping Voltage Screenshot
Positive 8 kV contact per IEC 61000-4-2

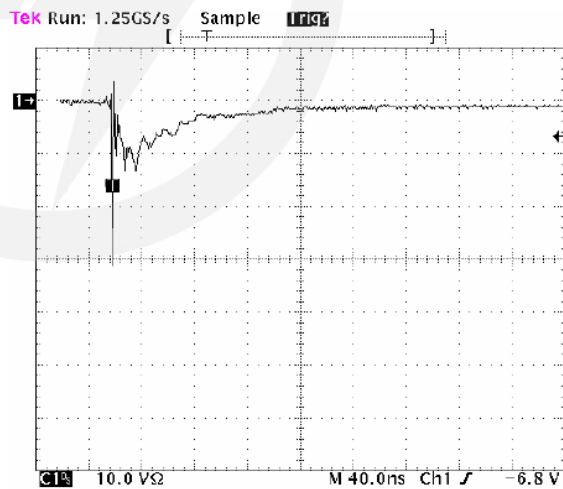
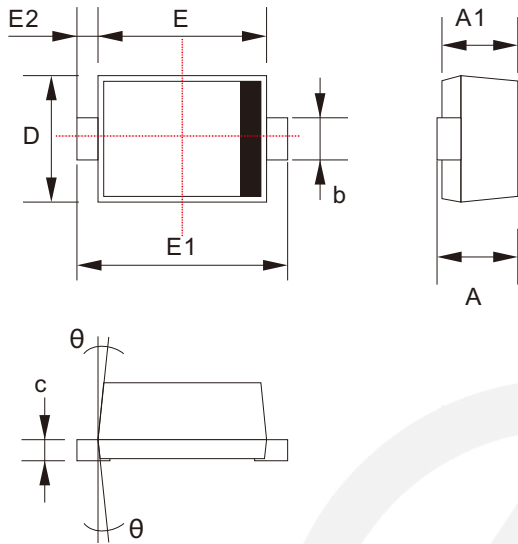


Figure 2. ESD Clamping Voltage Screenshot
Negative 8 kV contact per IEC 61000-4-2

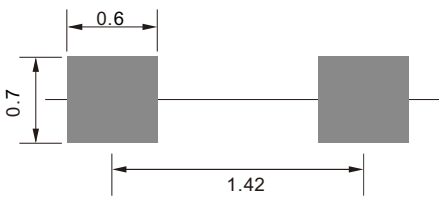
SOD-523 PACKAGE OUTLINE

Unit: mm

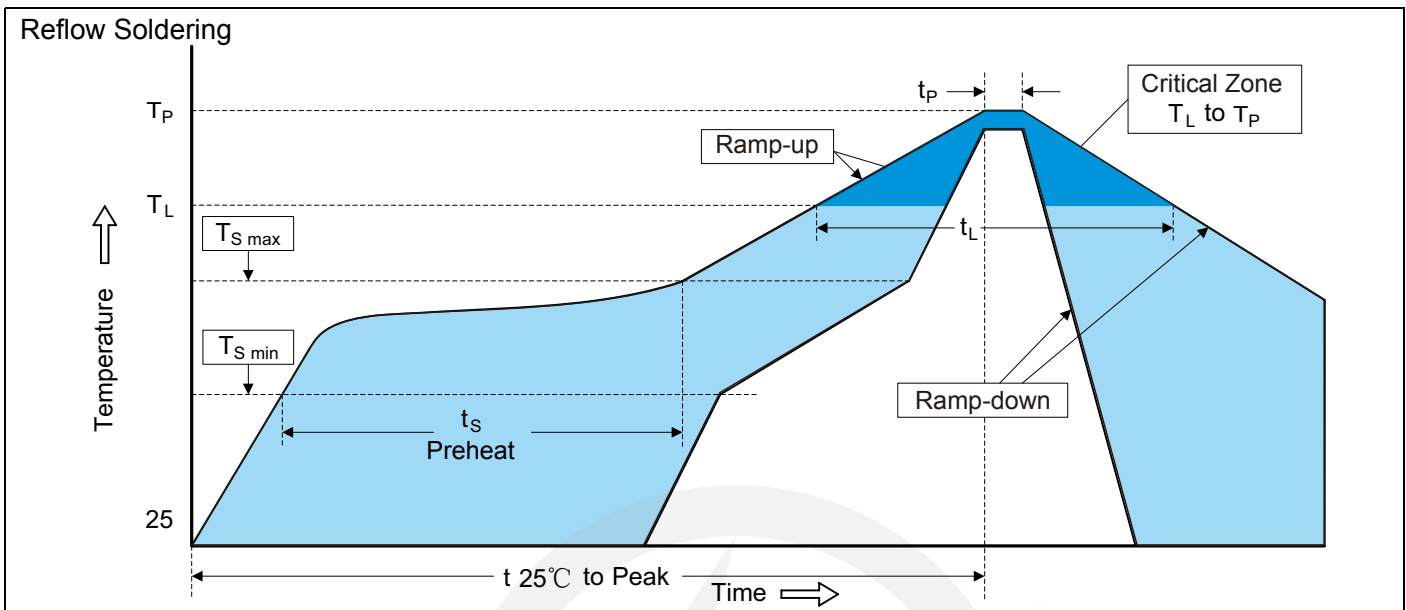


SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.500	0.770
A1	0.500	0.700
b	0.250	0.380
c	0.070	0.200
D	0.700	0.900
E	1.100	1.300
E1	1.500	1.700
E2	0.200 REF	
θ	7° REF	

Recommended Solder Pad Footprint



- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: ± 0.05 mm.
 3. The pad layout is for reference purposes only.

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