



Description

The ESD5Zxx is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, it is suited for use in cellular phones, portable devices, digital cameras, power supplies and many other portable applications.

Features

- IEC61000-4-2 Level 4 ESD Protection
- Protects one directional I/O line
- Low clamping voltage
- Working voltage : 15V
- Low leakage current

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

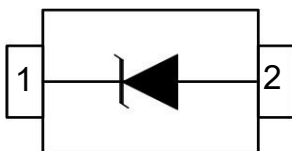
Ordering Information

- Device: ESD5Zxx
- Package: SOD-523
- Material: Halogen free
- Packing: Tape & Reel
- Quantity per reel: 3,000pcs

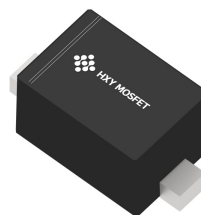
Applications

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

Pin Configuration



Package Outline





Absolute Maximum Rating

Symbol	Parameter	Value	Units
V_{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	± 30 ± 22	kV
ESD	ESD Voltage per human body model ESD Voltage per machine model	16 400	kV V
P_D	Total Power Dissipation on FR-5 Board (Note 1) @ $T_a=25^{\circ}\text{C}$	150	mW
T_J, T_{STG}	Junction and Storage Temperature	-55/+150	$^{\circ}\text{C}$
T_L	Lead Solder Temperature – Maximum (10 Second Duration)	260	$^{\circ}\text{C}$

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 ($T_{amb}=25^{\circ}\text{C}$)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage				15	V
P_{PK}	Peak Power Dissipation				120	W
V_{BR}	Reverse Breakdown Voltage	$I_T = 1\text{mA}$	16.0			V
I_R	Reverse Leakage Current	$V_{RWM} = 15\text{V}$			0.5	μA
V_C	Clamping Voltage	$I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$			23.0	V
		$I_{PP} = 4\text{A}, t_p = 8/20\mu\text{s}$			30.0	V
C_J	Junction Capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$			28	pF



Electrical Characteristics Curve

Fig 1 8/20 μ s Waveform per IEC61000-4-5

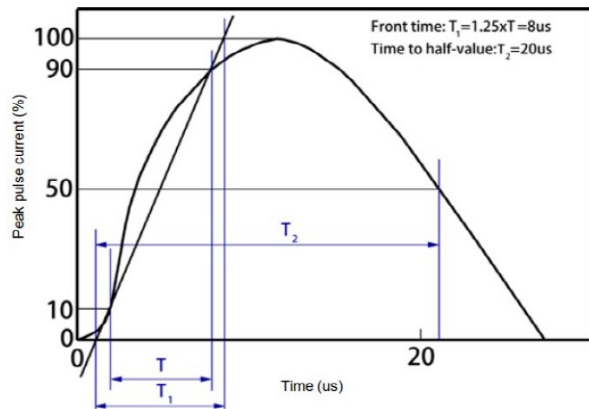


Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2)

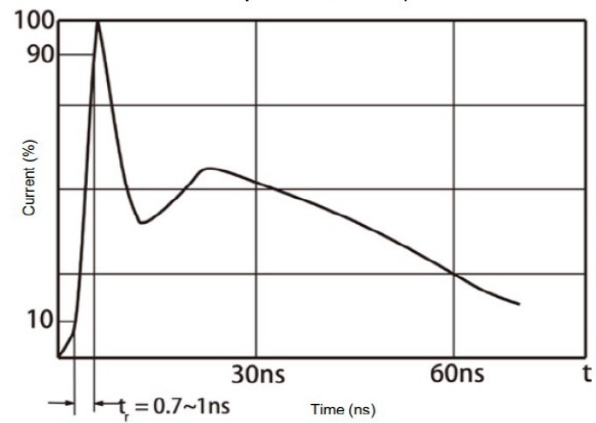


Fig 3 Voltage vs Capacitance

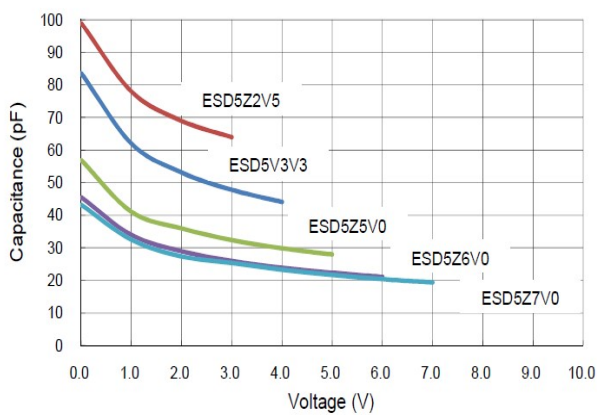


Fig 4 Voltage vs Capacitance

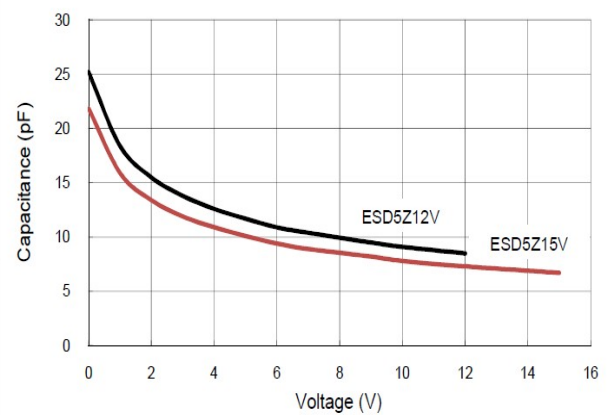


Fig 5 Clamping Voltage vs Peak Pulse Current

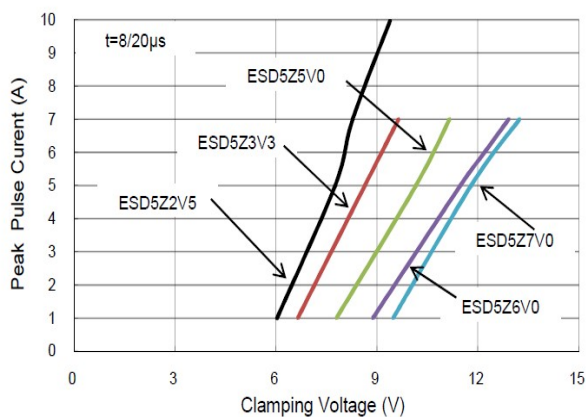
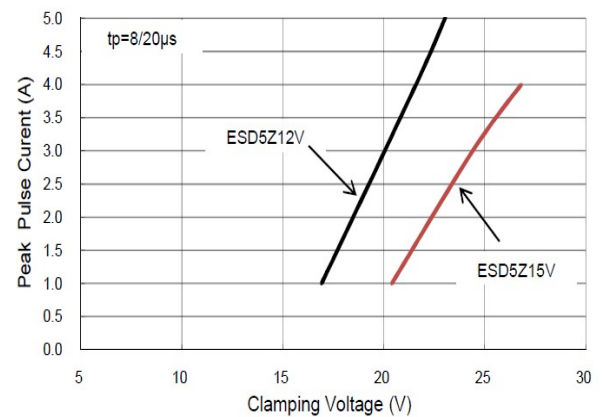
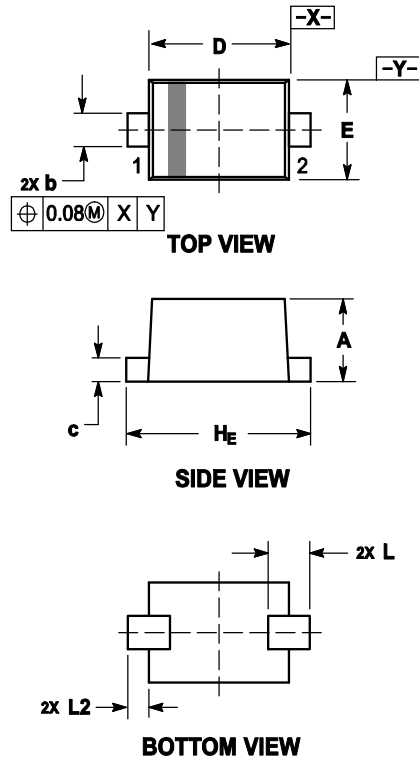


Fig 6 Clamping Voltage vs Peak Pulse Current





Outline And Dimensions

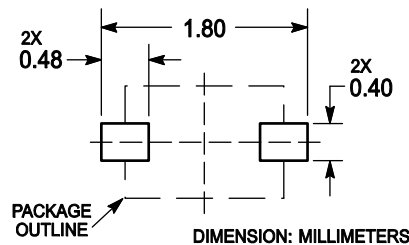


Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.50	0.60	0.70	0.020	0.024	0.028
b	0.25	0.30	0.35	0.010	0.012	0.014
c	0.07	0.14	0.20	0.003	0.006	0.008
D	1.10	1.20	1.30	0.043	0.047	0.051
E	0.70	0.80	0.90	0.028	0.031	0.035
H _E	1.50	1.60	1.70	0.059	0.063	0.067
L	0.30 REF			0.012 REF		
L ₂	0.15	0.20	0.25	0.006	0.008	0.010

Soldering Footprint





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