

Description

The ESD5Z12V is an uni-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and ultra low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The ESD5Z12V complies with the IEC 61000-4-2 (ESD) standard with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into an ultra-small SOD-523 lead-free package. The small size and high ESD surge protection make ESD5Z12V an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features

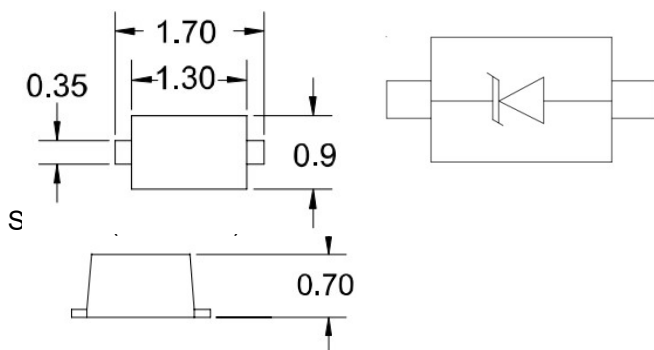
- Protects one data line
- Ultra low leakage: nA level
- Stand-off Voltage: 2.5 V ~15V
- Ultra low clamping voltage
- Response Time is Typically < 1ns
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test

Air discharge: $\pm 30\text{kV}$

Contact discharge: $\pm 30\text{kV}$

- RoHS Compliant

Dimensions & Symbol (Unit: mm Max)



Package Dimensions Circuit and Pin Schematic

Mechanical Characteristics

- Package: SOD-523
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays

Marking Information



Ordering Information

Part Number	Packaging	Reel Size
ESD5Z12V	3000/Tape & Reel	7 inch

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

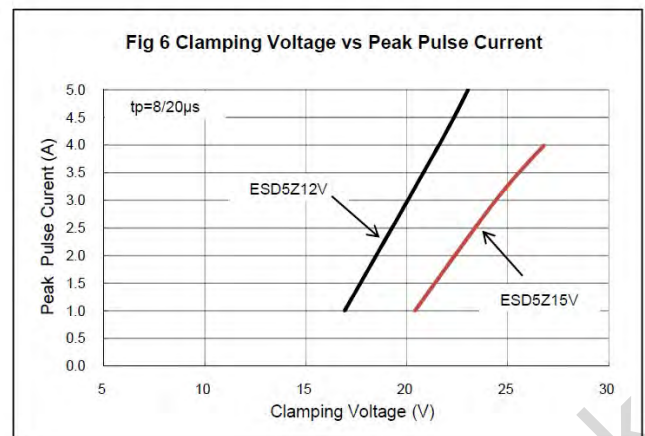
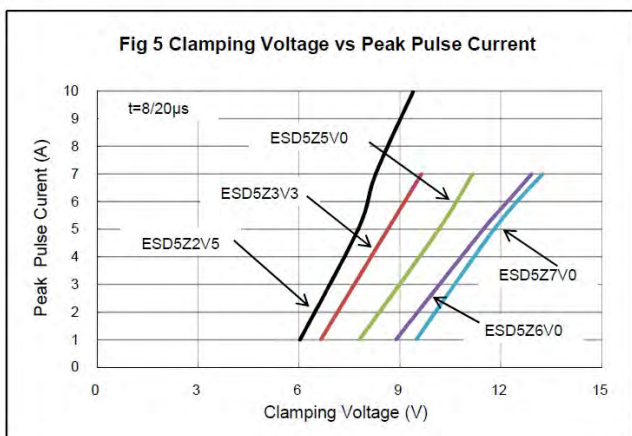
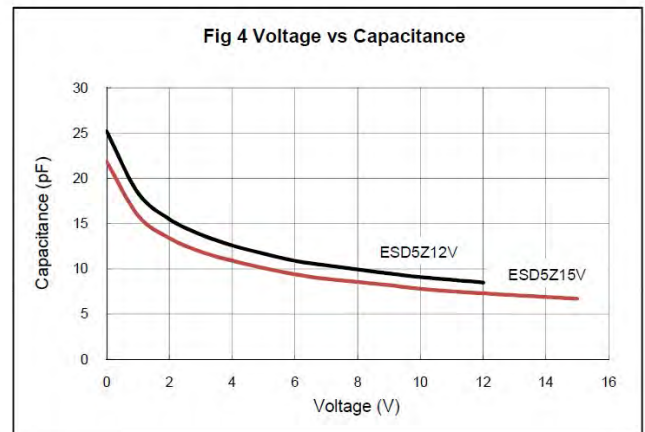
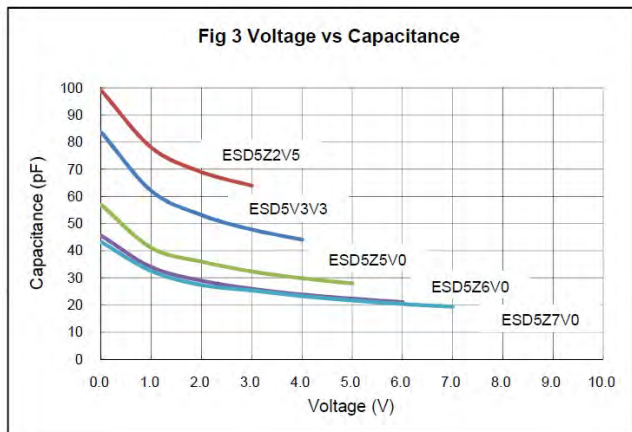
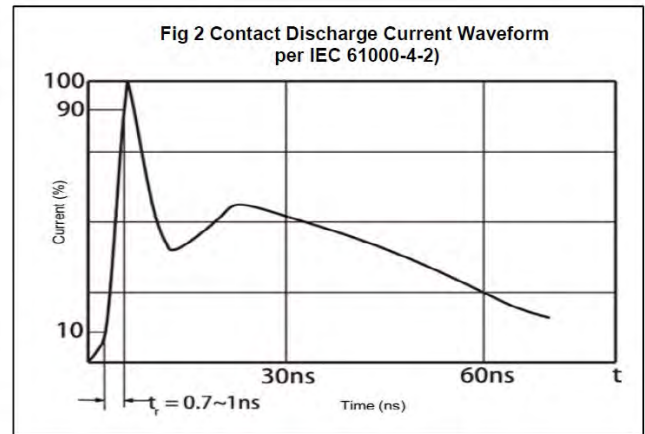
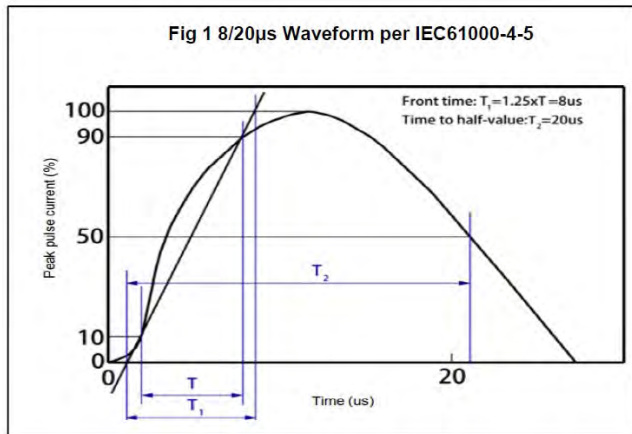
Note 1. FR-5=1.0x0.75x0.62 in.

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

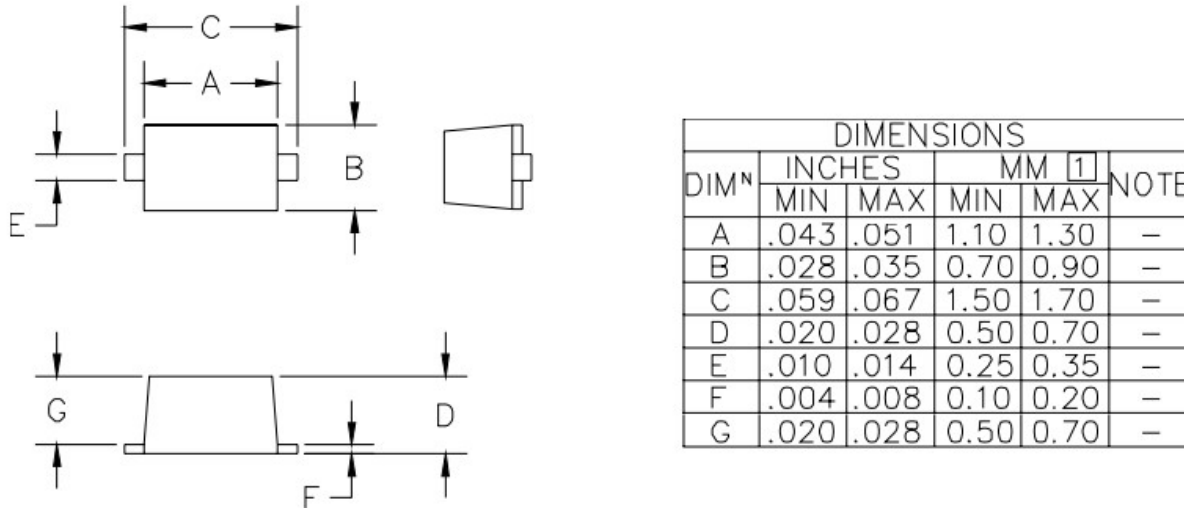
PART NUMBER	V_{RWM}	I_R	V_B	I_T	V_C		V_C		P_{PK}	C_J
	(V)	(μA)	(V)	(mA)	(V)		(V)		(W)	(pF)
	Max	Max	Min		Max	@A	Max	@A	Max	Max
ESD5Z12V	12.0	0.03	14.1	1	20.0	1.0	26.0	4.0	104	45

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ELECTRICAL CHARACTERISTICS CURVE

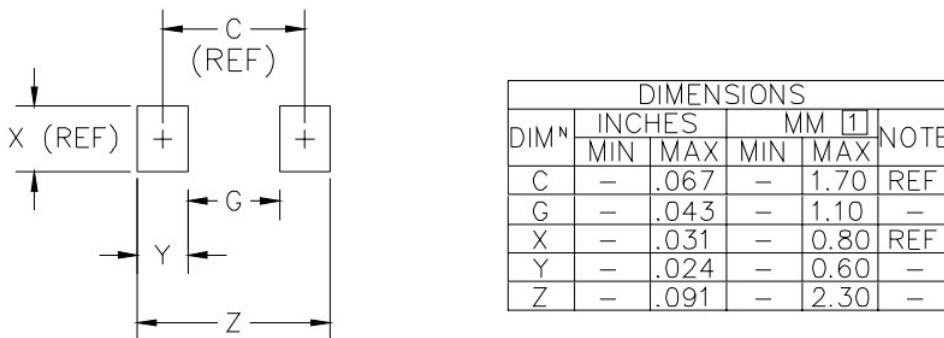


Package mechanical data



[1] CONTROLLING DIMENSION: MILLIMETERS

Suggested Land Pattern



[1] CONTROLLING DIMENSION: MILLIMETERS

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