

Transient Voltage Suppressors for ESD Protection

General Description

The ESD3Z5V0 Series is designed to protect voltage sensitive components from ESD and transient voltage events.

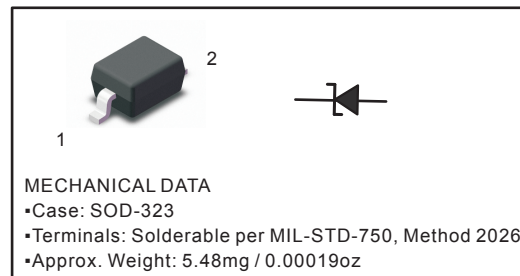
Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.

Features

- Small Body Outline Dimensions
- 350 Watts peak pulse power ($t_p = 8/20\mu s$)
- Transient protection for data lines to
- IEC 61000-4-2 (ESD) $\pm 15kV$ (air), $\pm 8kV$ (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 24A (8/20 μs)
- Small package for use in portable electronics
- Suitable replacement for MLV's in ESD protection applications
- Protects one I/O or power line
- Low clamping voltage
- Notebooks, Desktops, and Servers

PINNING

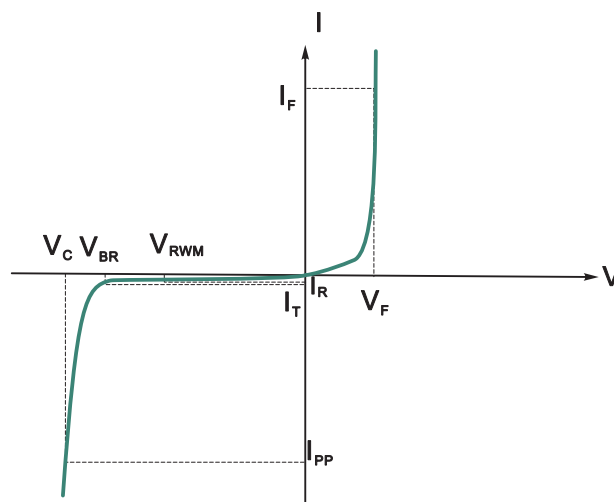
PIN	DESCRIPTION
1	Cathode
2	Anode



- Portable Instrumentation Pagers Peripherals
- Working voltages: 5V and 12V
- Low leakage current
- Solid-state silicon-avalanche technology
- We declare that the material of product compliance with RoHS requirements.
- S-Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

Electronics Parameter

Parameter	Symbol
Maximum Reverse Peak Pulse Current	I_{PP}
Clamping Voltage @ I_{PP}	V_C
Peak Reverse Working Voltage	V_{RWM}
Reverse Leakage Current @ V_{RWM}	I_R
Breakdown Voltage @ I_T	V_{BR}
Test Current	I_T
Forward Current	I_F
Forward Voltage @ I_F	V_F



Absolute Ratings
 (T_{amb}=25°C)

Parameter	Symbol	Value	Unit
Peak Pulse Power(tp=8/20us)	P _{PK}	250	W
ESD Voltage(HBM Waveform per IEC 61000-4-2)	V _{ESD}	30	kV
Operating Junction Temperature	T _J	-55 to +125	°C
Storage Temperature	T _{STG}	-55 to +150	°C

Electrical Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

Device	V _{RWM} (V)	I _R (uA) @V _{RWM} =5V	V _{BR} (V) @IT=1mA	V _C (V) @IPP=5A tp=8/20us	V _C (V) @IPP=24A tp=8/20us	I _{PP} (A) tp=8/20us	C _J (pF)
	Max.	Max.	Min.	Typ.	Max.	Max.	Typ.
ESD3Z5V0	5.0	10	6.0	9.8	10.5	24	350
ESD3Z12	12.0	1.0	13.3	19.0	16.5	15	150

Fig.1 Non-Repetitive Peak Pulse Power vs. Pulse Time

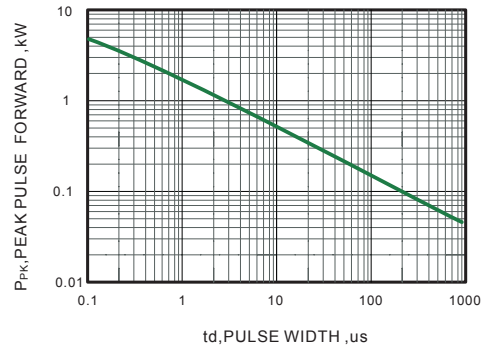


Fig.2 Forward Current Derating Curve

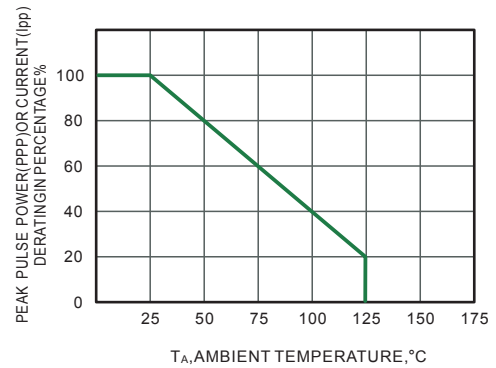


Fig.3 Waveform

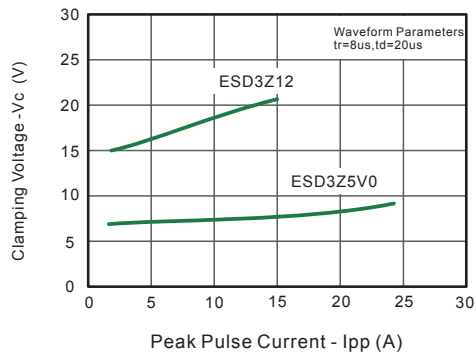


Fig.4 Power Derating Curve

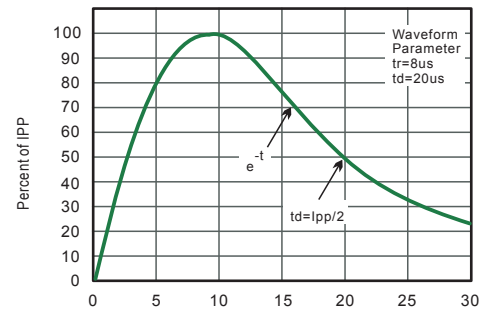
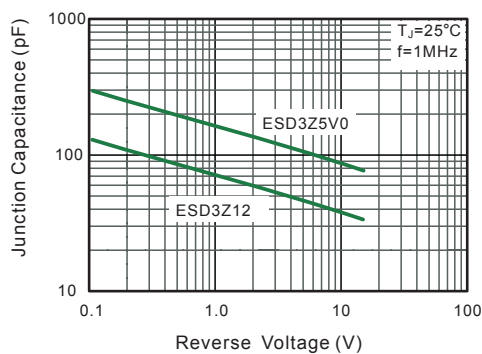


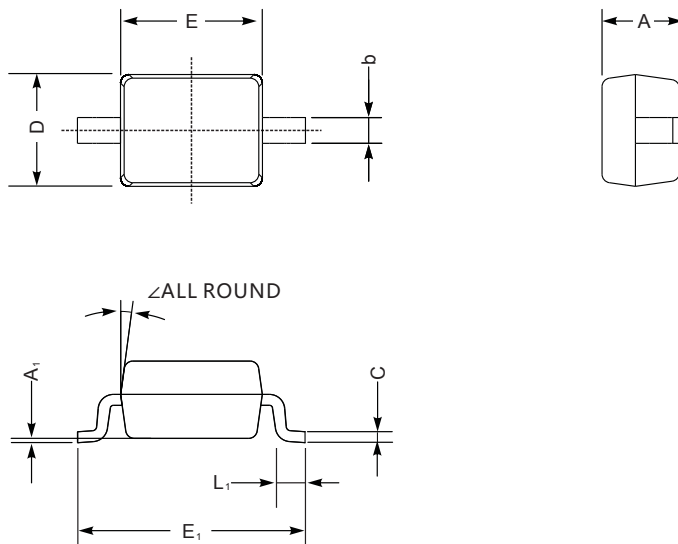
Fig.5 Typical Junction Capacitance



PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

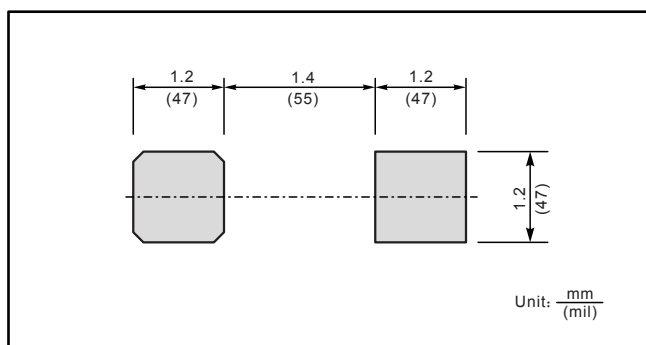
SOD-323



SOD-323 mechanical data

UNIT		A	C	D	E	E ₁	b	L ₁	A ₁	∠
mm	max	1.1	0.15	1.4	1.8	2.75	0.4	0.45	0.2	9°
	min	0.8	0.08	1.2	1.4	2.55	0.25	0.2	—	
mil	max	43	5.9	55	70	108	16	16	8	
	min	32	3.1	47	63	100	9.8	7.9	—	

The recommended mounting pad size



Marking

Type number	Marking code
ESD3Z5V0	05
ESD3Z12	12