■Transient Voltage Suppressors for ESD Protection

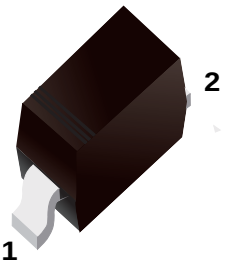
■ Description

The ESD3Z5.0 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.

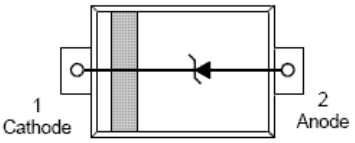
Pb-free

RoHS COMPLIANT

HALOGEN FREE



■ Simplified outline(SOD-323)



■ Features

- Small Body Outline Dimensions
- 250 Watts peak pulse power (tp = 8/20μs)
- Transient protection for data lines to
  IEC 61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
  IEC 61000-4-4 (EFT) 40A (5/50ns)
  IEC 61000-4-5 (Lightning) 24A (8/20μs)
- 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
- Working voltages: 5V and 12V
- Low leakage current

■ Applications

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

■ Absolute Maximum Ratings Ta = 25℃

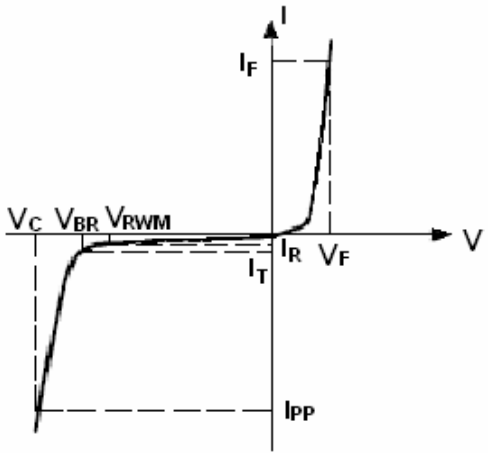
Symbol	Parameter	Value	Units
P_{PK}	Peak Pulse Power (t_p = 8/20μs)	250	W
V_{ESD}	ESD Voltage(HBM Waveform per IEC 61000-4-2)	30	kV
T_L	Maximum lead temperature for soldering during 10s	260	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C
T_J	Maximum junction temperature	-55 to +125	°C

■ ElectricalCharacteristics Ratings at 25°C ambient temperature unless otherwise specified.VF = 0.9V at IF = 10mA

Device	V_{RWM} (V)	I_R(uA) @ V_{RWM}=5V	V_{BR} (V)@ I_t=1mA	V_C (V) @ I_{PP}=5 A t_p=8/20μs	V_C (V) @ I_{PP}=24 t_p=8/20μs	I_{PP} (A) t_p=8/20μs	C (pF)
	Max	Max	Min	Typ	Max	Max	Typ
ESD3Z5.0	5.0	10	6.0	9.8	10.5	24	350
ESD3Z12	12.0	1.0	13.3	19.0	16.5	15	150

■ Electrical Parameter

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



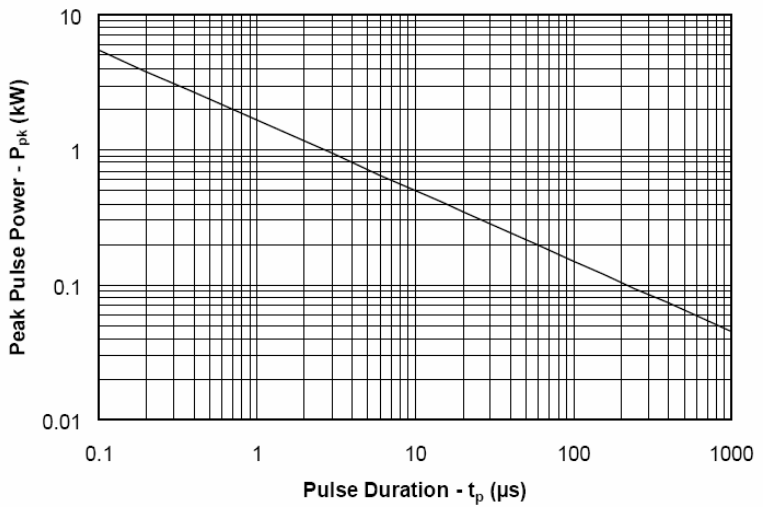


Fig.1 Non-Repetitive Peak Pulse Power vs. Pulse Time

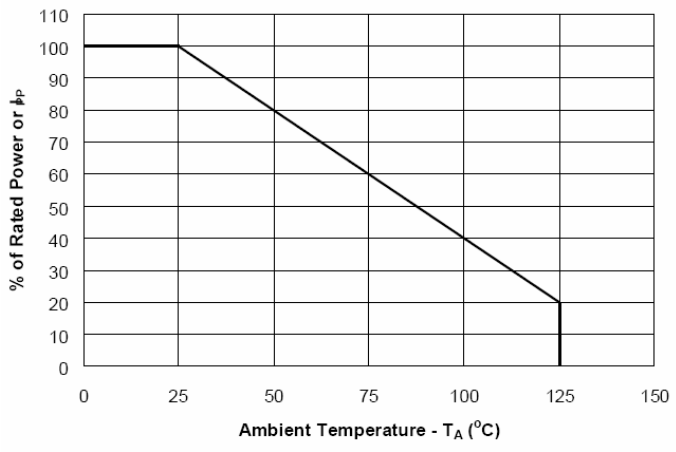


Fig.2 Power Derating Curve

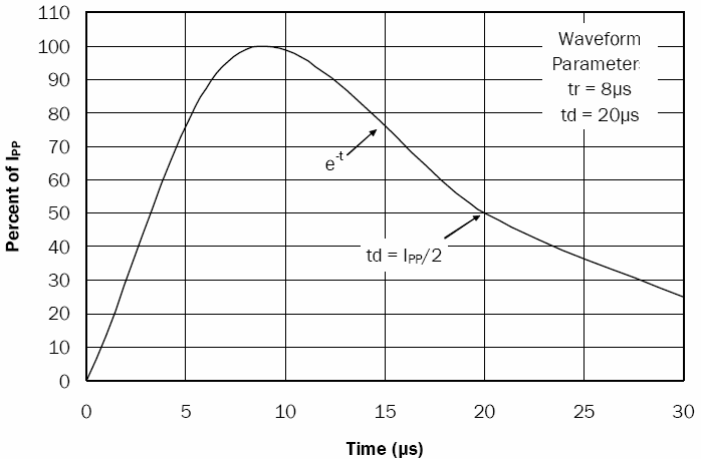


Fig.3 Waveform

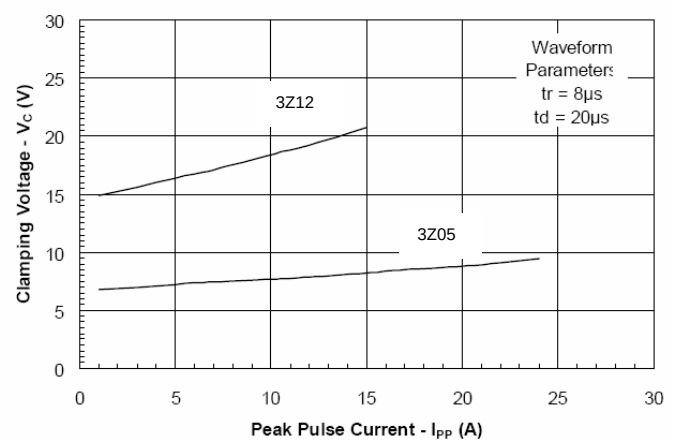


Fig.4 Clamping Voltage vs. Peak Pulse Current

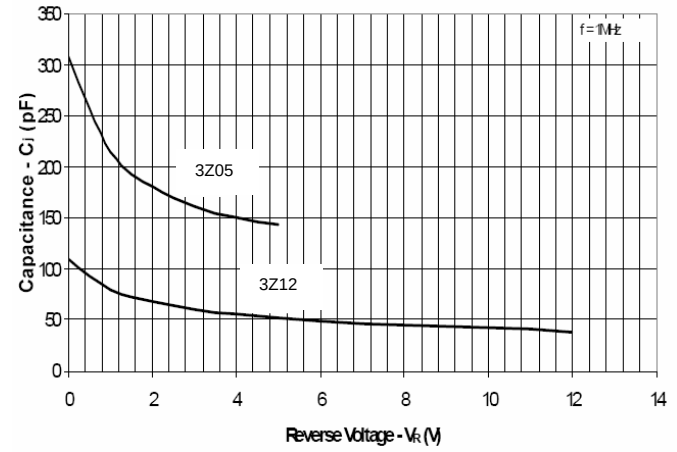


Fig.5 Capacitance vs. Reverse Voltage

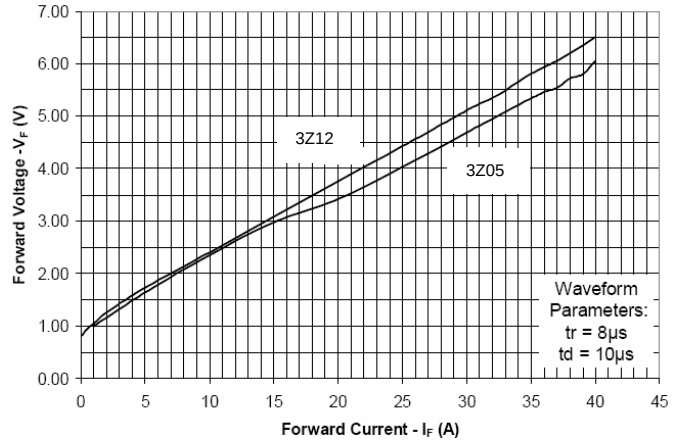
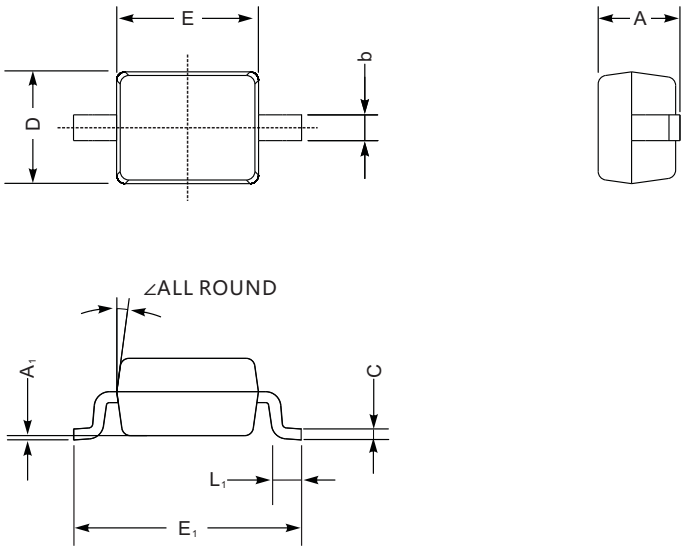


Fig.6 Forward Voltage vs. Forward Current

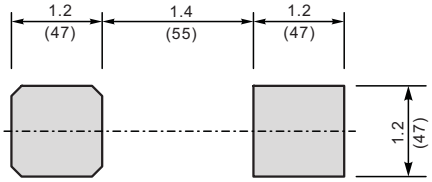
Package Outline SOD-323

Plastic surface mounted package; 2 leads



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



Unit: mm (mil)

Summary of Packing Options

Package	Packing Description	Packing Quantity	Industry Standard
SOD-323	Tape/Reel,7"reel	3000	EIA-481-1