

SD05LC

Bidirectional small Packaged TVS Diodes for ESD Protection

The SD05LC is designed for applications requiring transient overvoltage protection capability. It is intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines, communication systems, medical equipment and other applications. This device is ideal for situations where board space is at a premium.

It has been specifically designed to protect sensitive components which are connected to power、data and transmission lines from overvoltage caused by ESD(electrostatic discharge), CDE (Cable Discharge Events),and EFT (electrical fast transients).

Features

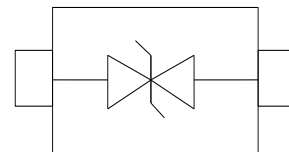
- Peak Power Dissipation – 120 W (8 x 20 us Waveform)
- Replacement for MLV (0805)
- Protects One Power or I/O Port
- Low Clamping Voltage
- Low Leakage
- Stand-off Voltage: 5.0 V
- Response Time is < 1 ns
- Meets MSL 1 Requirements
- **Solid-state Punch-Through TVS Process technology**
- ROHS compliant
- WeiPan technology



SOD-323

Main applications

- Cellular handsets AND accessories
- Portable instrumentation
- Peripherals
- Networking and Telecom
- Serial and Parallel Ports
- Notebooks, Desktops, Servers
- Projection TV



Protection solution to meet

- IEC61000-4-2 (ESD) $\pm 15\text{kV}$ (air), $\pm 8\text{kV}$ (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)

Ordering Information

Device	Qty per Reel	Reel Size
WPSD05LC	3000	7 Inch

Maximum ratings (Tamb=25°C Unless Otherwise Specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs waveform)	P _{PPP}	120	Watts
ESD Rating per IEC61000-4-2:			
Contact		8	KV
Air		15	
Lead Soldering Temperature	T _L	260 (10 sec.)	°C
Operating Temperature Range	T _J	-55 ~ 150	°C
Storage Temperature Range	T _{STG}	-55 ~ 150	°C
Lead Solder Temperature – Maximum (10 Second Duration)	T _L	260	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

*Other voltages may be available upon request.

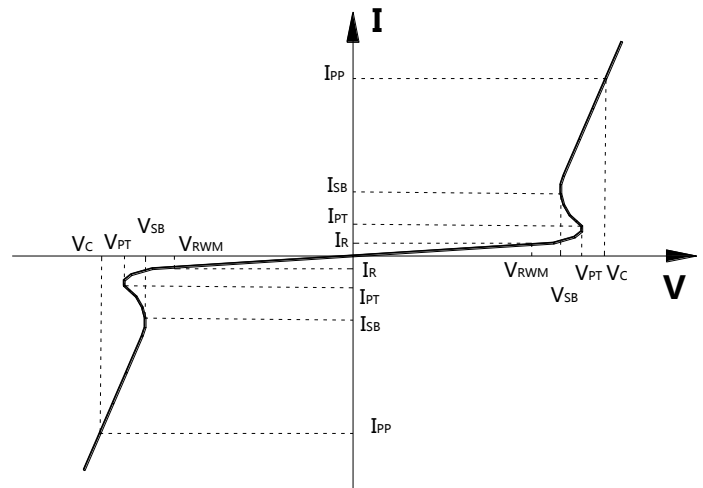
1. Non-repetitive current pulse, per Figure 1.

Electrical characteristics (Tamb=25°C Unless Otherwise Specified)

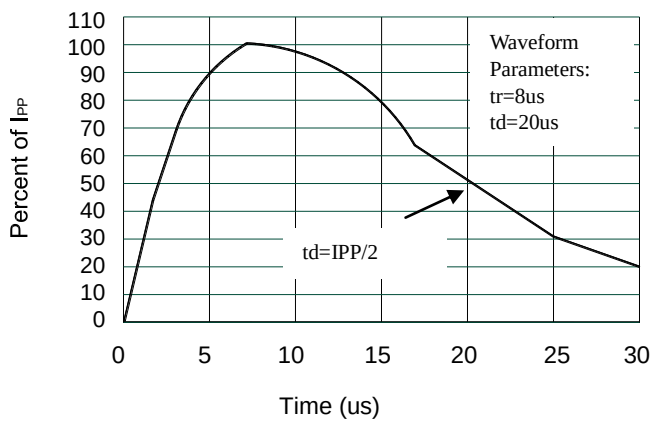
Device	V _{RWM}	I _R @ V _{RWM}		V _{SB} @ 50mA	V _C	Capacitance	
		(uA)		(Volts)	@ 1 A	@ V _R = 0 V, 1 MHz (pF)	
	(V)	Typ	Max	Min	(V)	Typ	Max
SD05LC	5	0.1	1	5.3	9.8	3.5	6

Junction capacitance is measured in VR=0V,F=1MHz

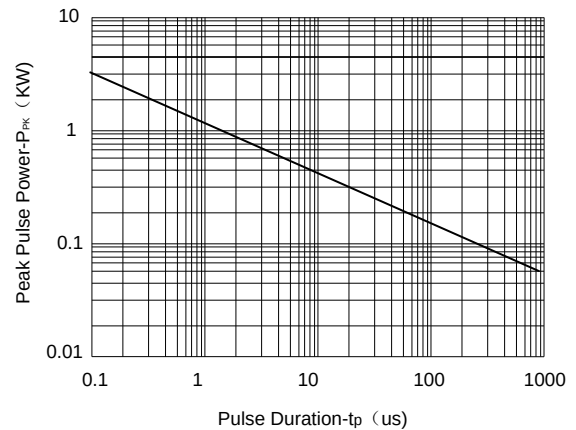
Symbol	Parameter
V _{RWM}	Working Peak Reverse Voltage
V _{PT}	Punch-Through Voltage@ I _{PT}
V _{SB}	Snap-Back Voltage@ I _{SB}
V _C	Clamping Voltage @ I _{PP}
I _T	Test Current
I _{RM}	Leakage current at V _{RWM}
I _{PP}	Peak pulse current
C _O	Off-state Capacitance
C _J	Junction Capacitance



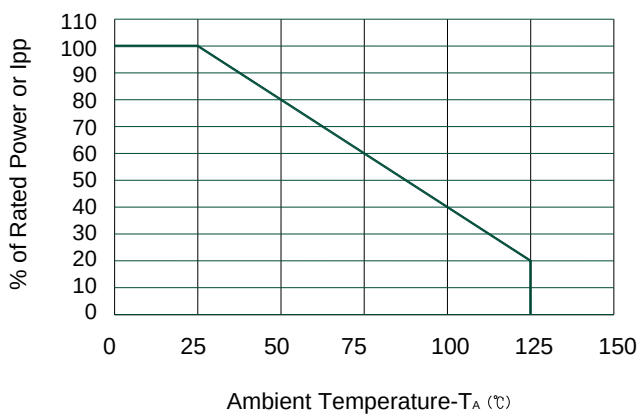
Typical electrical characterist applications



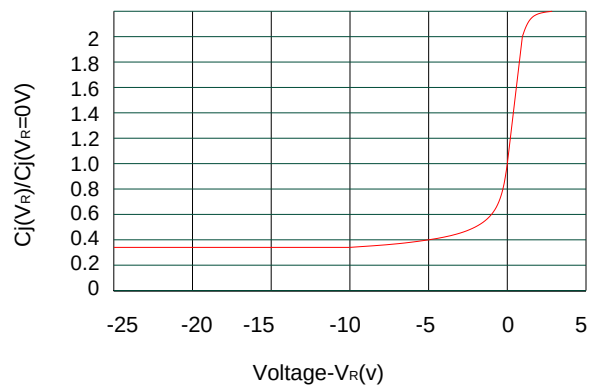
Pulse Waveform



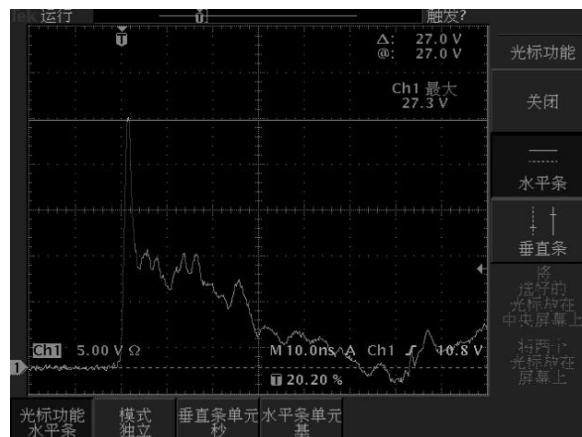
Non-Repetitive Peak Pulse Power vs. Pulse Time



Power Derating Curve



Junction Capacitance vs. Reverse Voltage



ESD Clamping Voltage Screenshot

Positive 8 kV Contact per IEC61000-4-2

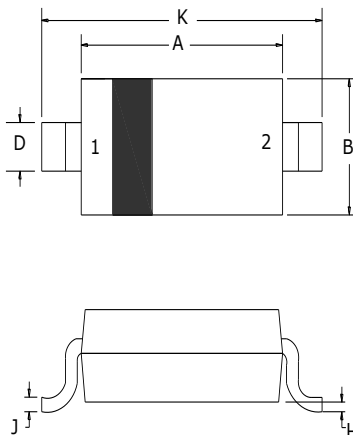
Package Information

SOD-323

Mechanical Data

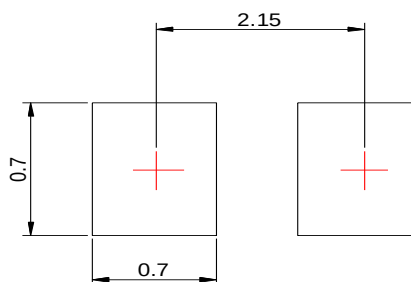
Case: SOD-323

Case Material: Molded Plastic. UL Flammability

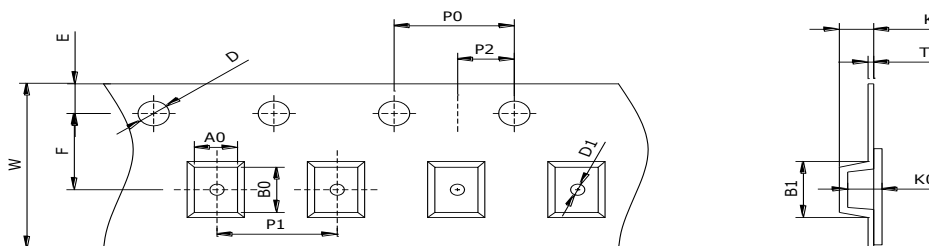


Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	1.60	1.80	0.063	0.071
B	1.2	1.40	0.047	0.055
C	0.80	0.90	0.031	0.035
D	0.25	0.35	0.010	0.014
E	0.15REF		0.006REF	
H	0	0.10	0	0.004
J	0.08	0.15	0.003	0.006
K	2.50	2.70	0.098	0.106

Recommended Pad outline



SOD-323 Reel Dim



Package	Chip Size	Pocket Size B0×A0×K0(mm)	Tape Width	Reel Diameter	Quantity Per Reel	P0	P1
SOD-323	2.60×1.40×1.05	3.30×1.50×1.25	8mm	178mm(7")	3000	4mm	4mm
D0	D1	E	F	K	T	W	
1.5mm	0.5mm	1.75mm	3.5mm	0.95mm	0.2mm	8mm	