

General description

Unidirectional ElectroStatic Discharge (ESD) protection diode in a SOD523 plastic package designed to protect one transmission or data line from the damage caused by ESD and other transients

Features and benefits

- Unidirectional ESD protection of one line
- Reverse stand-off voltage: 36V Max
- Low leakage current: nA Level
- Response time is typically < 1 ns
- Low clamping voltage: $V_C = 63 \text{ V} @ I_{PP} = 6 \text{ A}$ (TYP)
- ESD Protection: 30kV(air)/ 30kV(contact) (IEC61000-4-2)
- Surge Protection: 6A (IEC 61000-4-5 8/20 μs)

Application information

- Cellular phones
- Portable devices
- Digital cameras
- Power supplies

Ordering information

Device	Package	Packaging	Reel Size
ESD5Z36-SL	SOD523	3000/Tape & Reel	7 Inch

Schematic & Pin configuration

Simplified outline	Graphic symbol

Maximum Ratings ($T_{OP} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

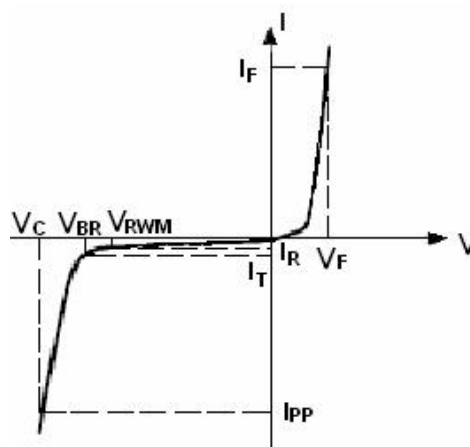
Parameter	Symbol	Value	Unit
Peak Pulse Power ($t_p = 8/20\text{ }\mu\text{s}$)	P_{PPM}	390	W
Peak Pulse Current($t_p = 8/20\text{ }\mu\text{s}$)	I_{PPM}	6	A
Maximum lead temperature for soldering during 10s	T_L	260	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^{\circ}\text{C}$
Operating Temperature Range	T_{OP}	-40 to +125	$^{\circ}\text{C}$
Maximum junction temperature	T_j	150	$^{\circ}\text{C}$
ESD voltage IEC 61000-4-2 (air discharge)	V_{ESD}	30	kV
ESD voltage IEC 61000-4-2 (contact discharge)	V_{ESD}	30	kV

Electrical Characteristics ($T_{OP} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

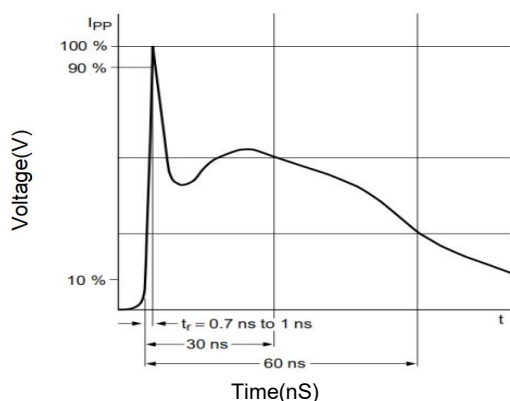
Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	V_{RWM}	--	--	36	V	
Breakdown Voltage	V_{BR}	40.5	--	45.5	V	$I_T=1\text{mA}$
Forward Voltage	V_F	0.7	0.8	0.9	V	$I_F=10\text{mA}$
Leakage Current I_{Leak}	I_R	--	--	100	nA	$V_{RWM}=36\text{V}$
Clamping Voltage	V_C	--	63	65	V	$I_{pp}=6\text{A}, t_p=8/20\mu\text{s}$
Junction Capacitance	C_J	--	30	35	pF	$V_R=0\text{V}, f=1\text{MHz}$
		--	7.0	8.0	pF	$V_R=36\text{V}, f=1\text{MHz}$

Portion Electronics Parameter

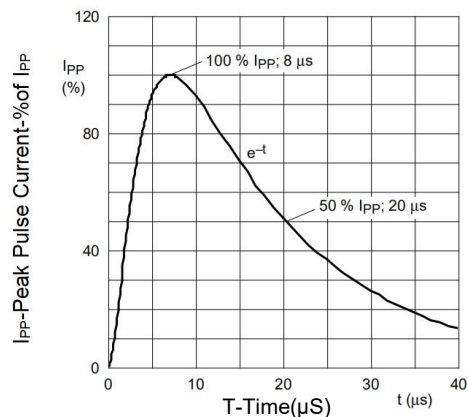
Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Reverse Leakage Current @ V_{RWM}
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T
I_F	Forward Current
V_F	Forward Voltage @ I_F



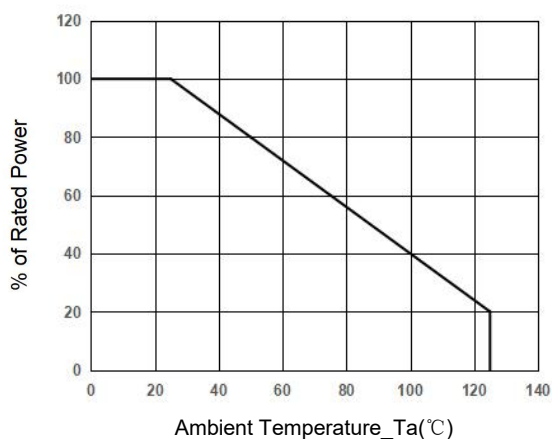
Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



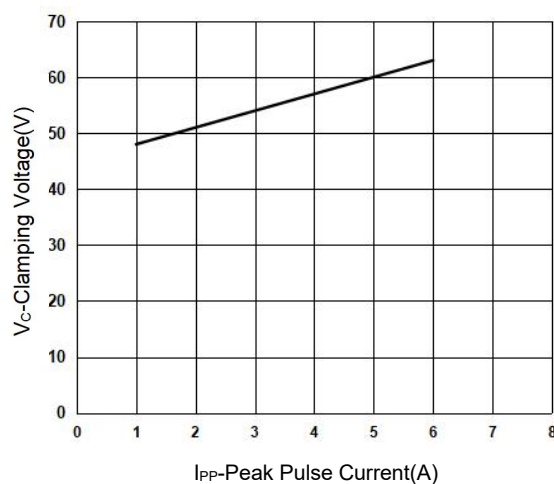
IEC61000-4-2 Pulse Waveform



IEC61000-4-5 8X20 μs Pulse Waveform



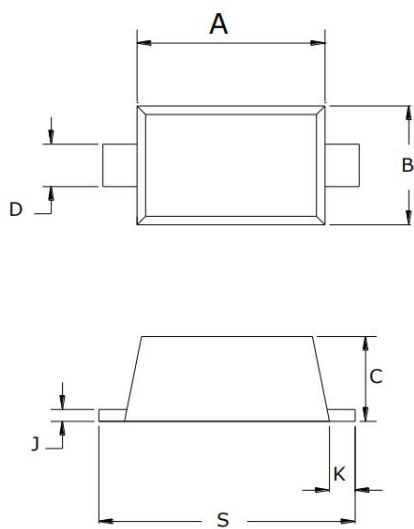
Power Derating Curve



Clamping Voltage vs. Peak Pulse Current

Package Outline Dimensions

SOD523



SYMBOL	MILLIMETERS		
	MIN	NOR	MAX
A	1.10	1.20	1.30
B	0.70	0.80	0.90
C	0.60	0.65	0.70
D	0.25	0.30	0.35
J	0.08	0.11	0.15
K	0.15	0.20	0.25
S	1.50	1.60	1.70

Soldering Footprint (mm)

