

## SOD-523 ESD 静电保护二极管

### ■ Features 特点

Un-directional 单向

ESD Protection 静电保护

### ■ Applications 应用

Power Lines 电源线

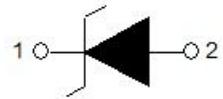
Portable Instrumentation 便携仪器仪表

Personal Digital Assistants 个人数码助手

Notebooks & Handhelds 笔记本或手持机

Microprocessor based equipment 带微处理器设备

Cellular handsets and accessories 蜂窝手机及配件



### ■ Device Marking 产品打标

18

### ■ Absolute Maximum Ratings 最大额定值

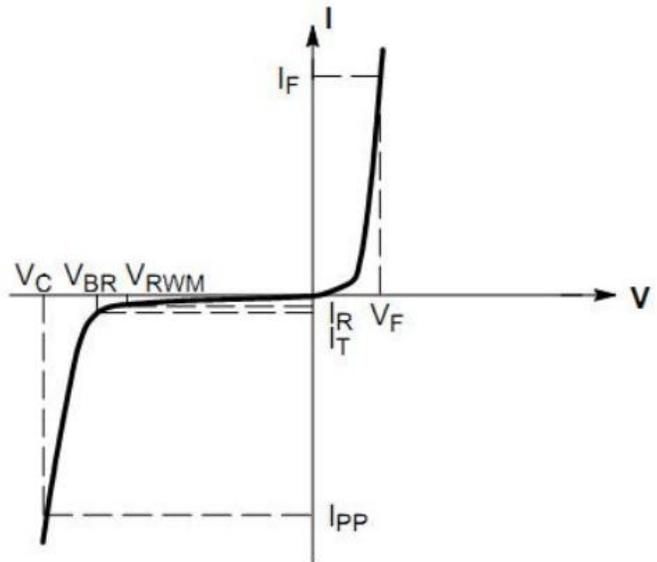
Characteristic 特性参数	Symbol 符号	Rat 额定值	Unit 单位
ESD (IEC61000-4-2 contact discharge) @25°C接触放电	$V_{ESD}$	$\pm 30$	KV
ESD (IEC61000-4-2 air discharge) @25°C空气放电	$V_{ESD}$	$\pm 30$	KV
Peak Pulse Power @25°C峰值脉冲功率	$P_{PK}$	320	W
Peak Pulse Current @25°C峰值脉冲电流	$I_{PP}$	10	A
Lead Temperature 管脚温度	$T_L$	260	°C
Lead Solder Time 管脚焊接时间	$T_L$	10	S
Operating Temperature 工作温度	$T_{op}$	-40~85	°C
Junction Temperature 结温	$T_J$	-40~125	°C
Storage Temperature 储存温度	$T_{stg}$	-55~150	°C

■ **Electrical Characteristics 电特性**

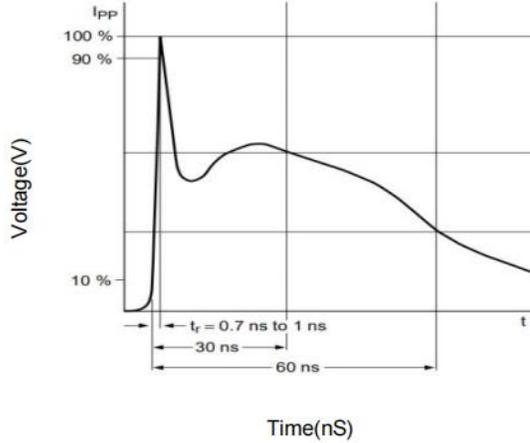
( $T_A=25^\circ\text{C}$  unless otherwise noted 如无特殊说明, 温度为  $25^\circ\text{C}$ )

Characteristic Parameters 特性参数	Symbol 符号	Min 最小值	Typ 典型值	Max 最大值	Unit 单位	Condition 条件
Reverse Stand-off Voltage 反向工作电压	$V_{RWM}$			18	V	
Reverse Breakdown Voltage 反向击穿电压	$V_{BR}$	19.5	21	23	V	$I_T=1\text{mA}$
Reverse Leakage Current 反向漏电流	$I_R$			0.1	$\mu\text{A}$	$V_{RWM}=18\text{V}$
Clamping Voltage 钳位电压	$V_C$		22		V	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$
Clamping Voltage 钳位电压	$V_C$		30	32	V	$I_{PP}=10\text{A}, t_p=8/20\mu\text{s}$
Diode Capacitance 二极管电容	$C_D$		58 18	70 25	pF	$V_R=0\text{V}, f=1\text{MHz}$ $V_R=18\text{V}, f=1\text{MHz}$

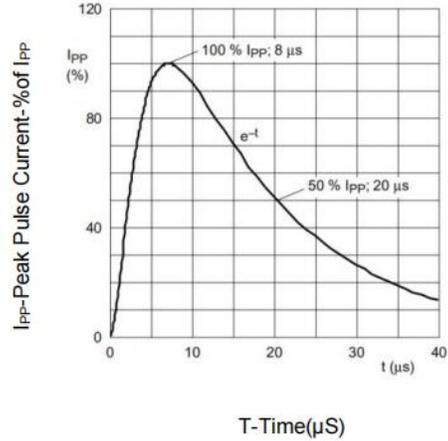
$V_{RWM}$	Reverse Working Voltage 反向工作电压
$V_{R(BR)}$	Reverse Breakdown Voltage 反向击穿电压@ $I_T=1\text{mA}$
$I_T$	Test Current 测试电流
$I_R$	Reverse Leakage Current 反向漏电流@ $V_{RWM}$
$V_C$	Clamping Voltage 钳位电压
$I_{PP}$	Reverse Peak Pulse Current 浪涌电流
$C_D$	Diode Capacitance 二极管电容 $V_{I0}=0\text{V}, V_{P-P} = 30\text{mV}, f = 1\text{MHz}$



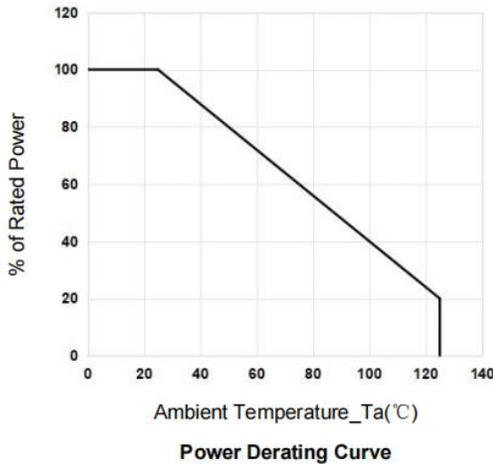
■ Typical Characteristic Curve 典型特性曲线



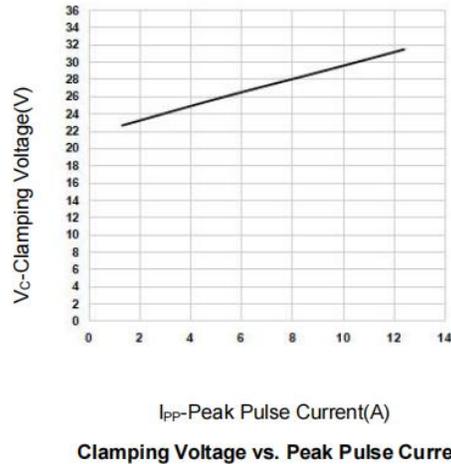
IEC61000-4-2 Pulse Waveform



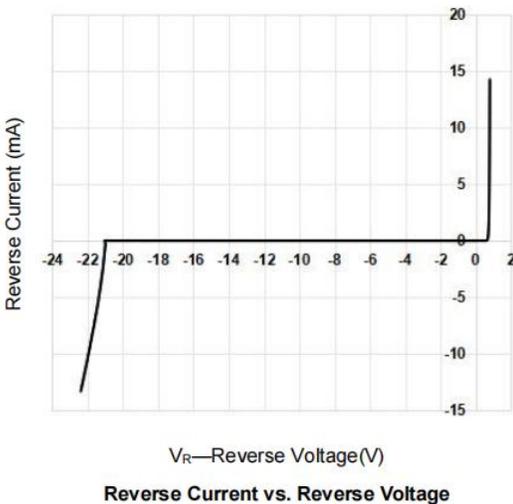
IEC61000-4-5 8X20µs Pulse Waveform



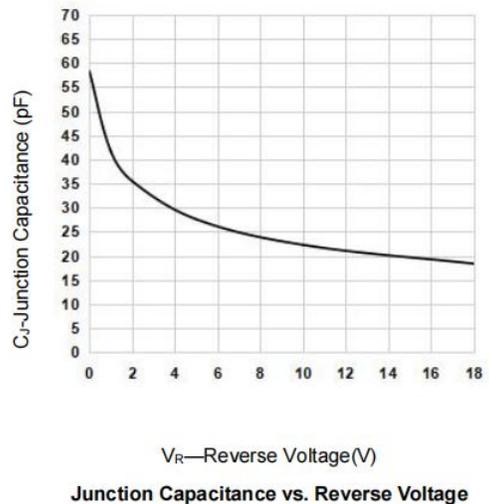
Power Derating Curve



Clamping Voltage vs. Peak Pulse Current

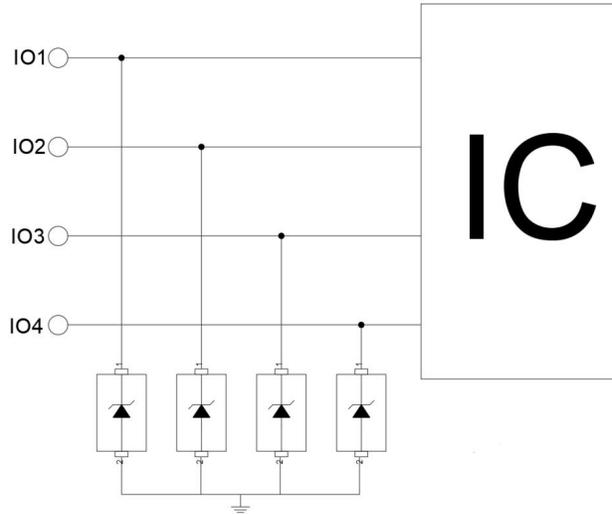


Reverse Current vs. Reverse Voltage

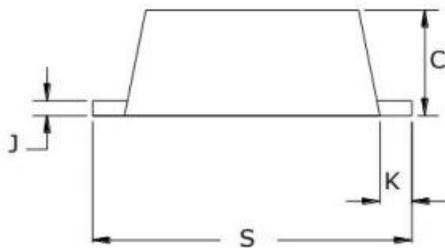
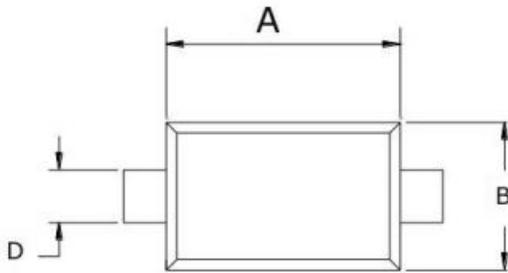


Junction Capacitance vs. Reverse Voltage

■ Typical Application 典型应用



■ Dimension 外形封装尺寸



SYMBOL	MILLIMETERS	
	MIN	MAX
A	1.10	1.30
B	0.70	0.90
C	0.50	0.70
D	0.25	0.35
J	0.07	0.20
K	0.15	0.25
S	1.50	1.70

■ Soldering Parameters 焊接参数

Reflow Condition		Pb-Free Assembly
Pre-heat	-Temperature Min ( $T_{s(min)}$ )	+150°C
	-Temperature Max( $T_{s(max)}$ )	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp ( $T_L$ ) to peak)		3°C/sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature( $T_L$ )(Liquid us)	+217°C
	-Temperature( $t_L$ )	60-150 secs.
Peak Temp ( $T_p$ )		+260(+0/-5)°C
Time within 5°C of actual Peak Temp ( $t_p$ )		30 secs. Max
Ramp-down Rate		6°C/sec. Max
xTime 25°C to Peak Temp ( $T_P$ )		8 min. Max
Do not exceed		+260°C

