



为您的产品保驾护航

PRODUCT DATASHEET

Electro-Static Discharge

JED523-15V ESD

## Features

- Ultra small package: SOD523
- Protects one data or power line
- Ultra low leakage: nA level
- Operating voltage: 15V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 30\text{kV}$   
Contact discharge:  $\pm 30\text{kV}$
  - IEC61000-4-5 (Lightning) 10A (8/20 $\mu\text{s}$ )
- RoHS compliant

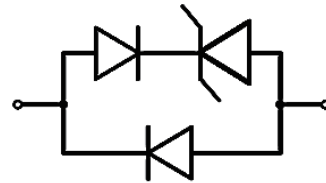
## Pin Description



## Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Power Supply
- Keypads, Side Keys, USB 2.0, LCD Displays

## Schematic Diagram



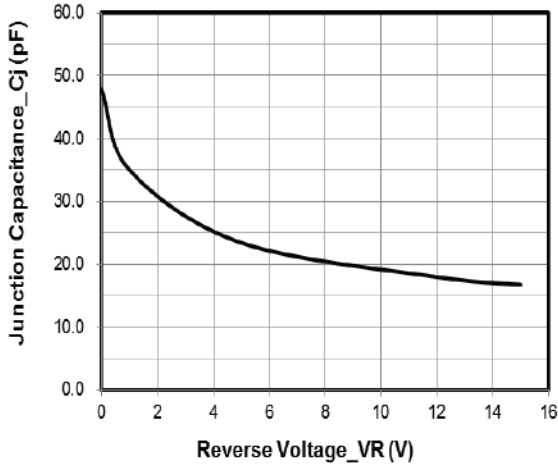
## Limiting Values( $T_A = 25\text{ }^\circ\text{C}$ , unless otherwise specified)

Symbol	Parameter	Conditions	Value	Unit
$V_{ESD}$	Electrostatic Discharge Voltage	IEC 61000-4-2; Contact Discharge	$\pm 30$	kV
		IEC 61000-4-2; Air Discharge	$\pm 30$	kV
$P_{Pk}$	Peak Pulse Power	$t_P=8/20\mu\text{s}$	320	W
$I_{PP}$	Peak Pulse Current	$t_P=8/20\mu\text{s}$	10	A
$T_J$	Operating Temperature Range	-	-55 to +125	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-	-55 to +150	$^\circ\text{C}$

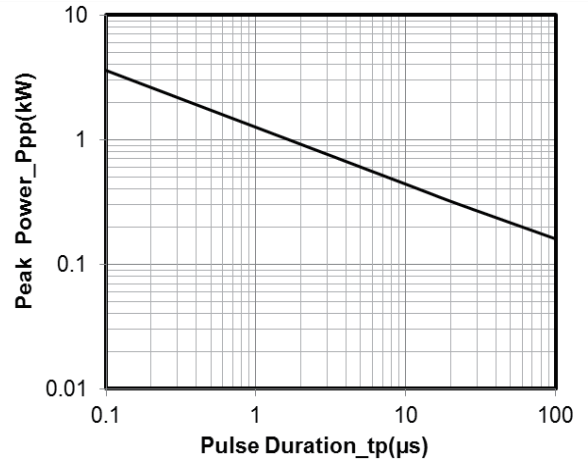
## Electrical Characteristics( $T_A = 25\text{ }^\circ\text{C}$ , unless otherwise specified)

Symbol	Parameter	Conditions	Min	Typ.	Max	Unit
$V_{RWM}$	Reverse Working Voltage	$T_A=25\text{ }^\circ\text{C}$ ; Pin 1 to Pin 2	-	-	15	V
$V_{BR}$	Breakdown Voltage	$I_T=1\text{mA}$ ; Pin 1 to Pin 2	16.5	-	-	V
$I_R$	Reverse Leakage Current	$V_{RWM}=15\text{V}$ ; Pin 1 to Pin 2	-	-	0.2	$\mu\text{A}$
$V_F$	Forward Voltage	$I_F=10\text{mA}$ ; Pin 2 to Pin 1	-	-	1.2	V
$V_C$	Clamping Voltage	$I_{PP}=1\text{A}$ (8x20 $\mu\text{s}$ pulse); Pin 1 to Pin 2	-	-	21	V
$V_C$	Clamping Voltage	$I_{PP}=10\text{A}$ (8x20 $\mu\text{s}$ pulse); Pin 1 to Pin 2	-	-	32	V
$C_J$	Junction Capacitance	$V_R=0\text{V}$ , $f=1\text{MHz}$	-	50	-	pF

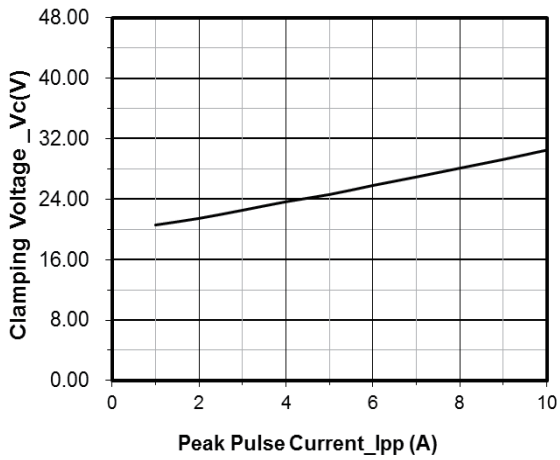
Typical Characteristics



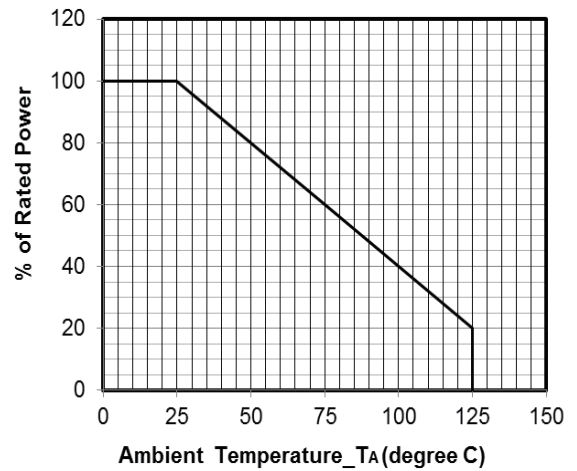
Junction Capacitance vs. Reverse Voltage



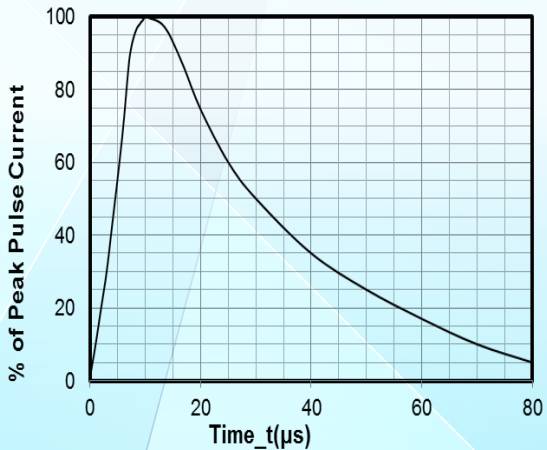
Peak Pulse Power vs. Pulse Time



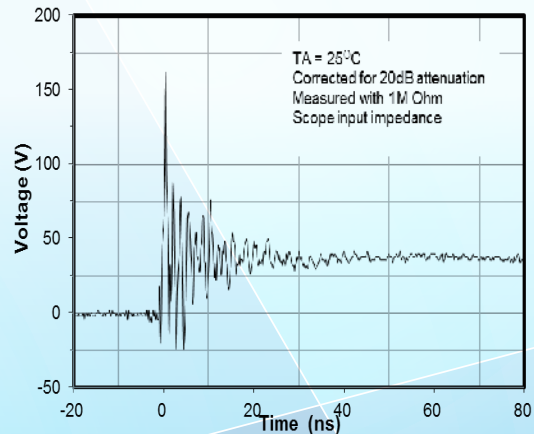
Clamping Voltage vs. Peak Pulse Current ( $t_p = 8/20 \mu s$ )



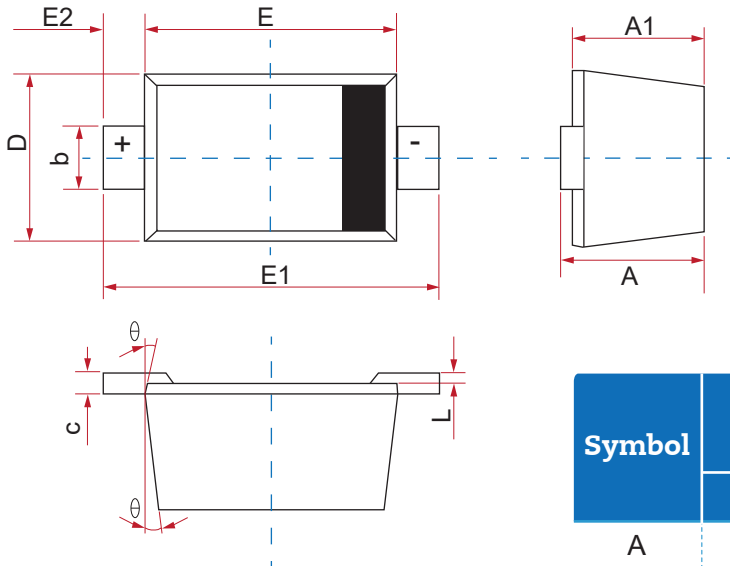
Power Derating Curve



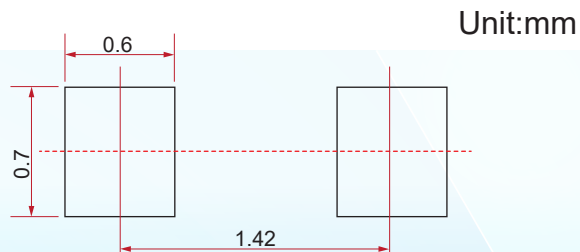
8 X 20 μs Pulse Waveform



ESD Clamping Voltage  
8 kV Contact per IEC61000-4-2

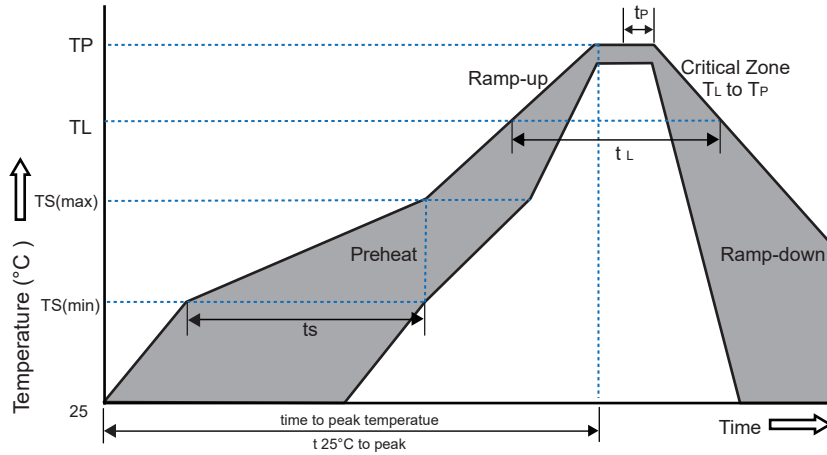
**Physical Dimensions(mm.)**


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.51	0.77	0.020	0.031
A1	0.50	0.70	0.020	0.028
b	0.25	0.35	0.010	0.014
c	0.08	0.15	0.003	0.006
D	0.75	0.85	0.030	0.033
E	1.10	1.30	0.043	0.051
E1	1.50	1.70	0.059	0.067
E2	0.20 REF		0.008 REF	
L	0.01	0.07	0.001	0.003
$\theta$	7° REF		0.037 BSC	

**Suggested Land Pattern**

**Packaging Quantity**

Part Number	Delivery Form	Delivery Quantity
JED523-15V	7"T&R	10,000

### Soldering Parameters



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)( $t_s$ )	60~180 secs.
Average ramp up rate (Liquid us Temp( $T_L$ ) to peak)		3°C/sec. Max
Ts(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 (TP)		8 min. Max
Do not exceed		+260°C

### Part Number System

## JE D523 - 15V

