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PRODUCT DATASHEET

Electro-Static Discharge

JED523-5V ESD

Features

- Ultra small package: SOD523
- Protects one data or power line
- Ultra low leakage: nA level
- Operating voltage: 5V
- 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) 8A (8/20 μs)
- RoHS compliant

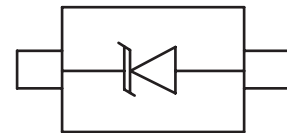
Pin Description



Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays

Schematic Diagram



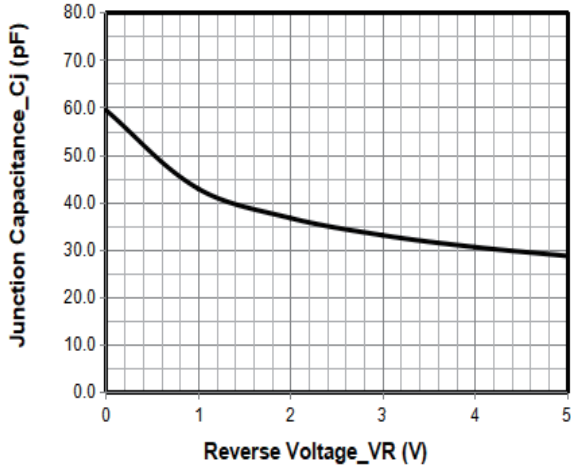
Limiting Values($T_A = 25^\circ\text{C}$, unless otherwise specified)

Symbol	Parameter	Conditions	Value	Unit
V_{ESD}	Electrostatic Discharge Voltage	IEC 61000-4-2;Contact Discharge	± 30	kV
		IEC 61000-4-2;Air Discharge	± 30	kV
P_{PP}	Peak Pulse Power	$t_P=8/20\mu\text{s}$	100	W
I_{PP}	Peak Pulse Current	$t_P=8/20\mu\text{s}$	8	A
T_J	Operating Temperature Range	-	-55 to +125	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-	-55 to +150	$^\circ\text{C}$

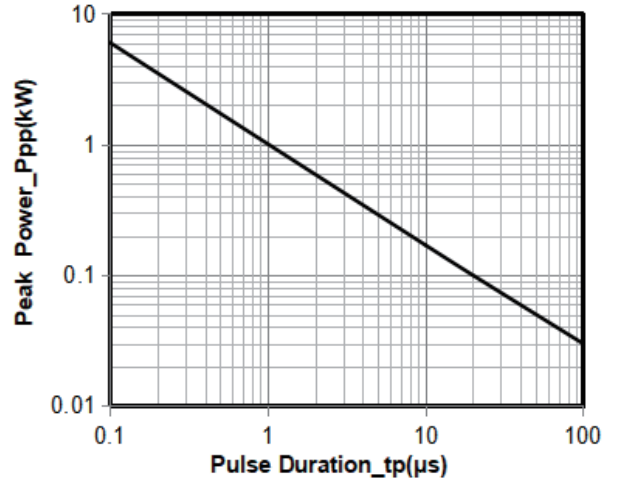
Electrical Characteristics($T_A = 25^\circ\text{C}$, unless otherwise specified)

Symbol	Parameter	Conditions	Min	Typ.	Max	Unit
V_{RWM}	Reverse Working Voltage	$T_A=25^\circ\text{C}$;Pin 1 to Pin 2	-	-	5	V
V_{BR}	Breakdown Voltage	$I_T=1\text{mA}$;Pin 1 to Pin 2	6.	-	8.5	V
I_R	Reverse Leakage Current	$V_{RWM}=5\text{V}$;Pin 1 to Pin 2	-	-	0.2	μA
V_F	Forward Voltage	$I_F=10\text{mA}$;Pin 2 to Pin 1	-	1.0	1.2	V
V_C	Clamping Voltage	$I_{PP}=8\text{A}(8\times 20\mu\text{s pulse})$;Pin 1 to Pin 2	-	-	12	V
C_J	Junction Capacitance	$V_R=0\text{V}, f=1\text{MHZ}$	-	60	-	pF

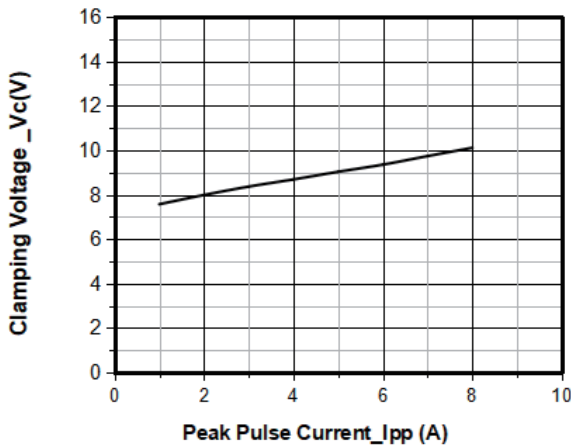
Typical Characteristics



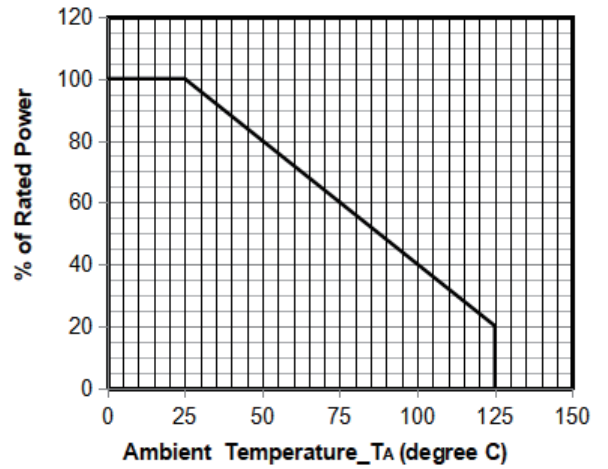
Junction Capacitance vs. Reverse Voltage



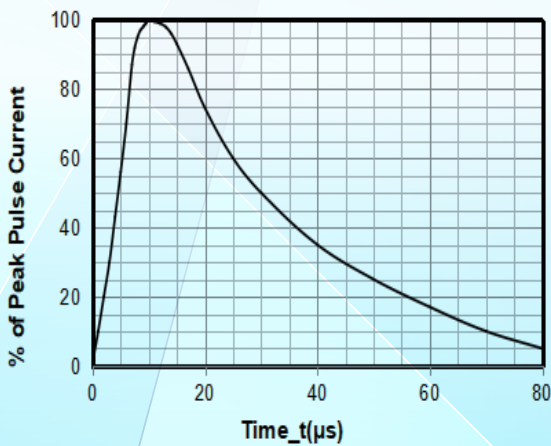
Peak Pulse Power vs. Pulse Time



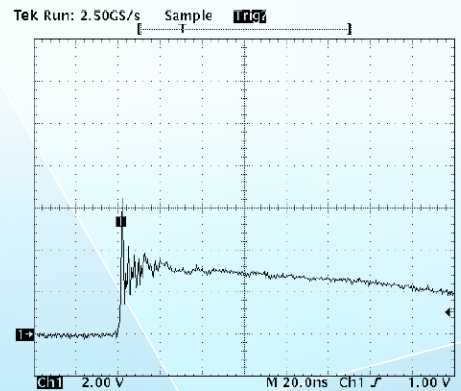
Clamping Voltage vs. Peak Pulse Current (tp = 8/20 μs)



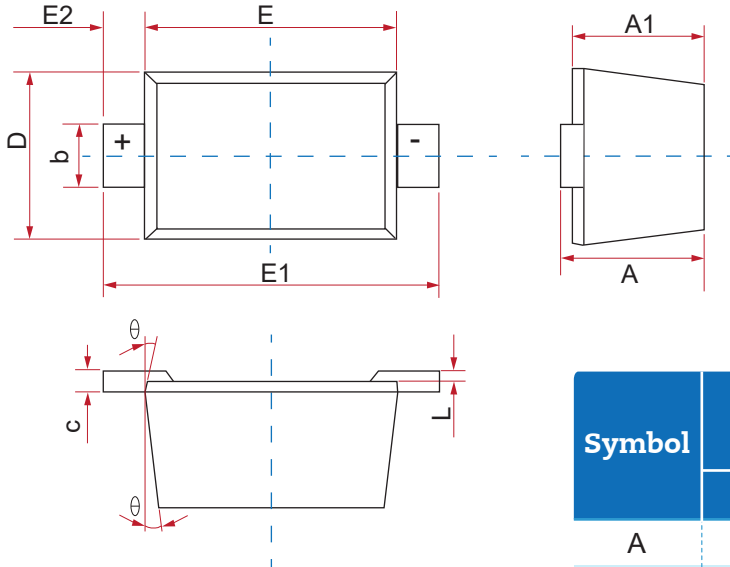
Power Derating Curve



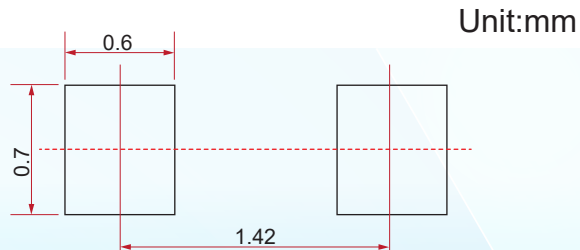
8 X 20 μs Pulse Waveform



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

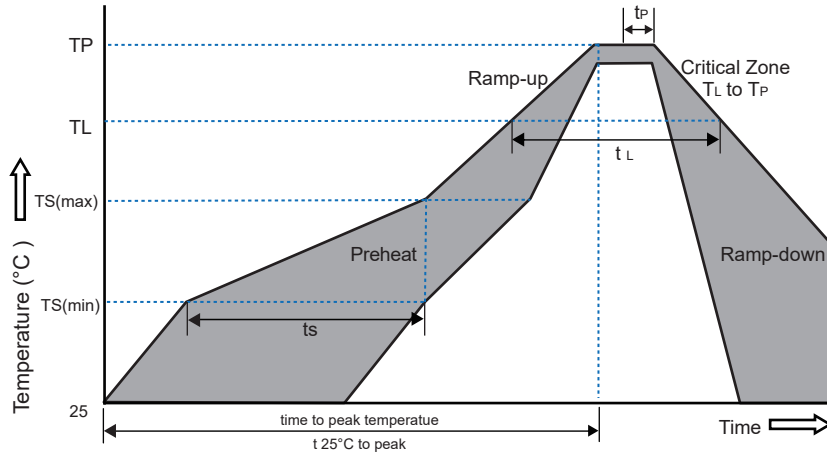
Physical Dimensions(mm.)


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
θ	7° REF		7° REF	

Suggested Land Pattern

Packaging Quantity

Part Number	Delivery Form	Delivery Quantity
JED523-15V	7"T&R	3,000

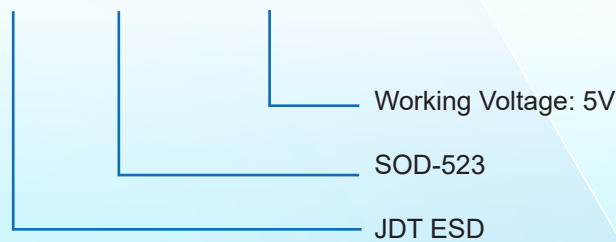
Soldering Parameters



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 - 5V



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