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PRODUCT DATASHEET

Electro-Static Discharge

JED323-12V-LG ESD

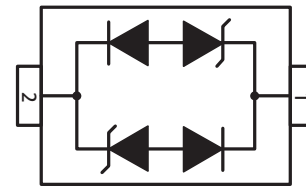
Features

- Package: SOD-323
- 350W peak pulse power (8/20 μ s)
- Ultra low capacitance: 1pF typical
- Ultra low leakage: nA level
- Operating voltage: 12V
- Low clamping voltage
- Protects one power line or data line
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: ± 30 kV
Contact discharge: ± 30 kV
 - IEC61000-4-5 (Lightning) 14A (8/20 μ s)
- RoHS compliant

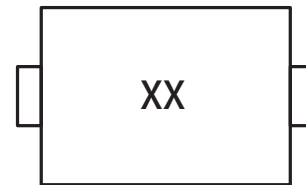
Applications

- USB Ports
- Smart Phones
- Wireless Systems
- Ethernet 10/100/1000 Base T

Schematic Diagram



Pin Description



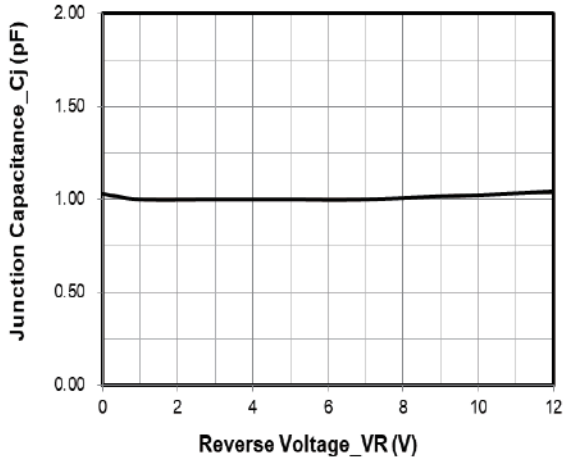
Limiting Values ($T_A = 25^\circ\text{C}$, unless otherwise specified)

| 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 _{PK} | Peak Pulse Power | t _P =8/20 μ s | 350 | W |
| I _{PP} | Peak Pulse Current | t _P =8/20 μ s | 14 | A |
| T _J | Operating Temperature Range | - | -55 to +125 | $^\circ\text{C}$ |
| T _{stg} | Storage Temperature Range | - | -55 to +150 | $^\circ\text{C}$ |

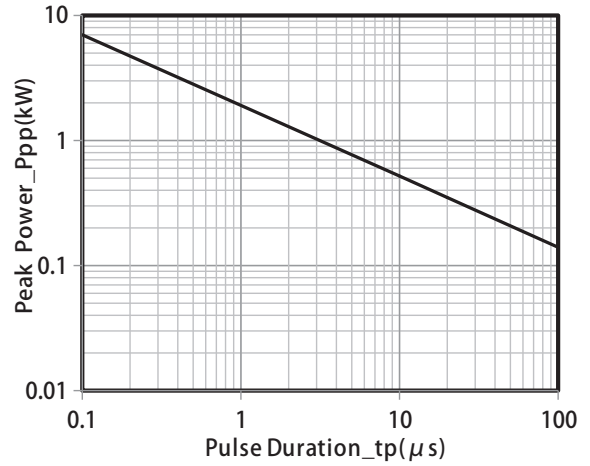
Electrical Characteristics ($T_A = 25^\circ\text{C}$, unless otherwise specified)

| Symbol | Parameter | Conditions | Min | Typ. | Max | Unit |
|------------------|-------------------------|--|------|------|-----|---------------|
| V _{RWM} | Reverse Working Voltage | T _A =25 $^\circ\text{C}$ | - | - | 12 | V |
| V _{BR} | Breakdown Voltage | I _T =1mA; T _A =25 $^\circ\text{C}$ | 13.3 | - | - | V |
| I _R | Reverse Leakage Current | V _{RWM} =12V; T _A =25 $^\circ\text{C}$ | - | - | 0.2 | μA |
| V _C | Clamping Voltage | I _{PP} =1A(8x20 μ s pulse) | - | - | 18 | V |
| V _C | Clamping Voltage | I _{PP} =14A(8x20 μ s pulse) | - | - | 25 | V |
| C _J | Junction Capacitance | V _R =0V, f=1 MHz | - | 1 | - | pF |

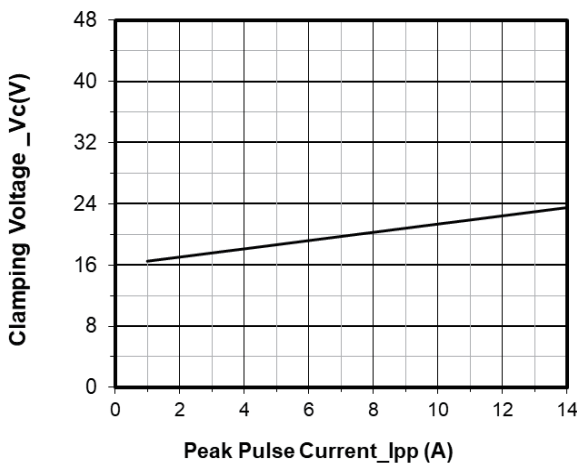
Typical Characteristics



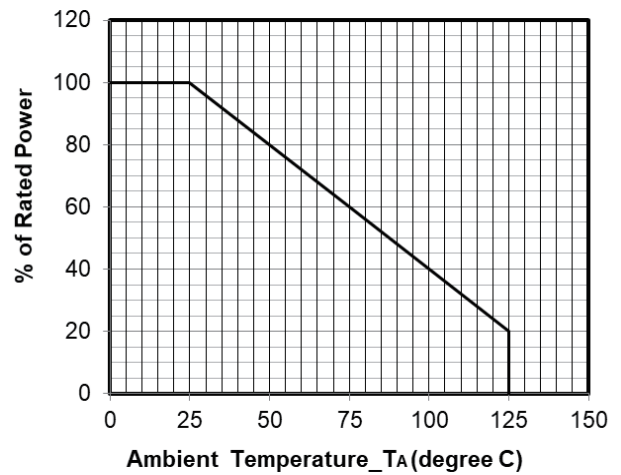
Junction Capacitance vs. Reverse Voltage



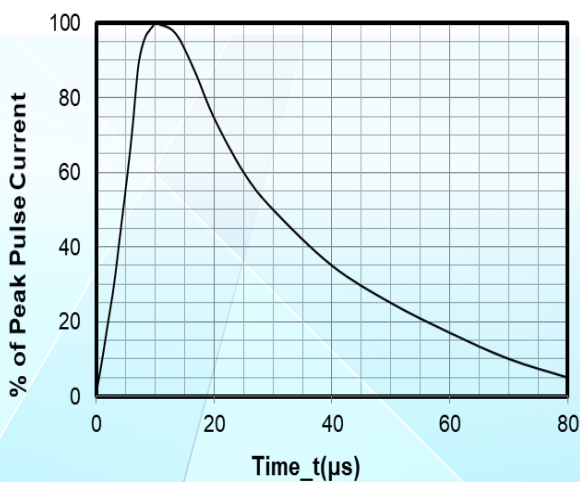
Peak Pulse Power vs. Pulse Time



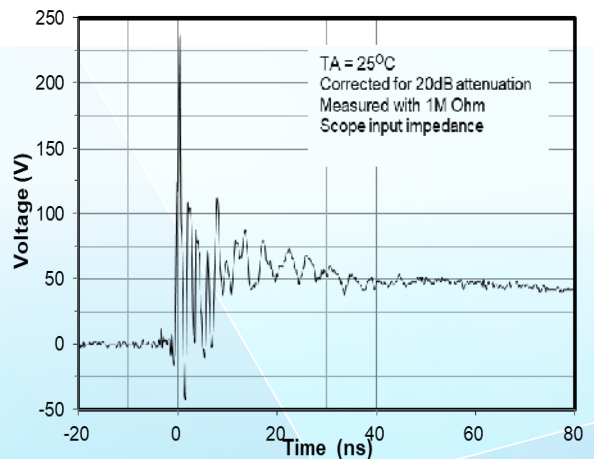
Clamping Voltage vs. Peak Pulse Current (tp = 8/20 μs)



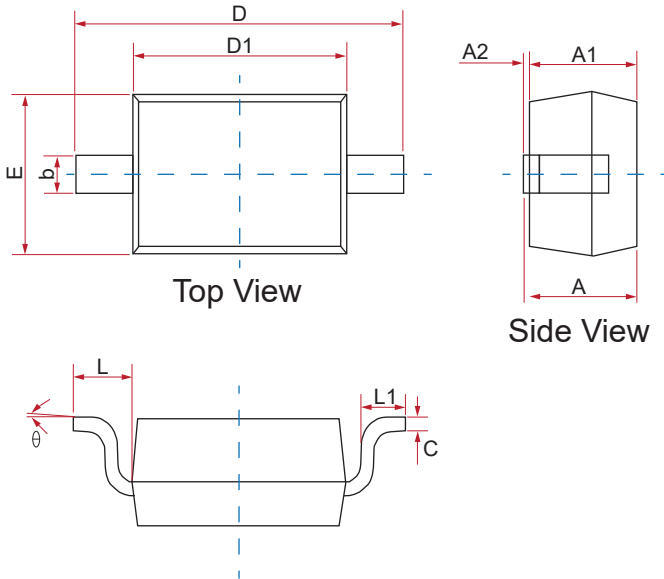
Power Derating Curve



8x20 μs Pulse Waveform



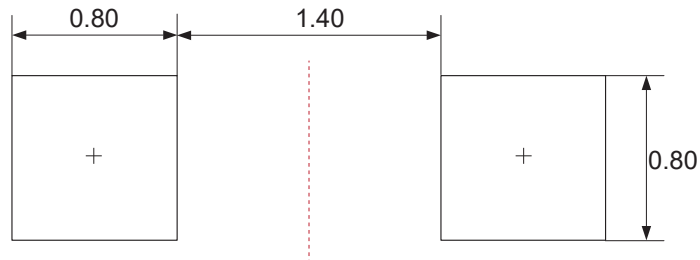
Note: Data is taken with a 10x attenuator
ESD Clamping Voltage
8 kV Contact per IEC61000-4-2

Physical Dimensions(mm.)


| Symbol | Dimensions In Millimeters | | |
|--------|---------------------------|------|-------|
| | Min | Nom | Max |
| A | 0.80 | -- | 1.100 |
| A1 | 0.80 | -- | 0.900 |
| A2 | 0.00 | -- | 0.100 |
| b | 0.25 | -- | 0.400 |
| c | 0.08 | -- | 0.177 |
| D1 | 1.60 | 1.70 | 1.800 |
| D | 2.30 | -- | 2.800 |
| E | 1.15 | -- | 1.400 |
| L | 0.475REF | | |
| L1 | 0.10 | -- | 0.500 |
| θ | 0° | -- | 8° |

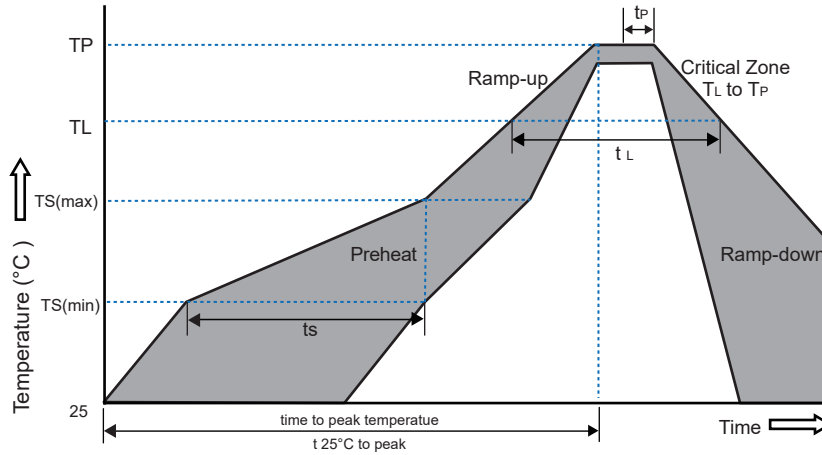
Suggested Land Pattern

Unit:mm


Packaging Quantity

| Part Number | Delivery Form | Delivery Quantity |
|---------------|---------------|-------------------|
| JED323-12V-LC | 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 D323 - 12V - L C

C=Bi-directional
Blank=Uni-directional

L=Low Capacitance

Working Voltage: 12V

SOD-323

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