

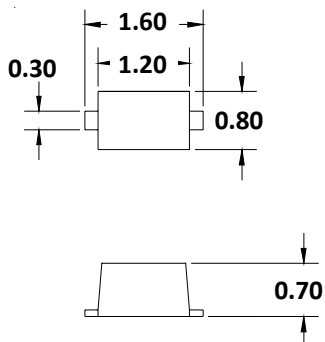
Description

The DC2421D5S is a 24V bidirectional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The DC2421D5S complies with the IEC61000-4-2(ESD) with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into an ultra small SOD-523 leadfree package. The small size and high ESD surge protection make DC2421D5S an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

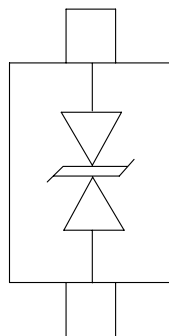
Mechanical Characteristics

- ◆ Package: SOD-523
- ◆ Lead Finish: Matte Tin
- ◆ Case Material: "Green" Molding Compound.
- ◆ Moisture Sensitivity: Level 3 per J-STD-020
- ◆ Terminal Connections: See Diagram Below
- ◆ Marking Information: See Below

Dimensions and Pin Configuration



Maximum Dimensions (mm)



Package Dimensions

Circuit and Pin Schematic

Features

- ◆ Protects one data or power line
- ◆ Ultra low leakage: nA level
- ◆ Operating voltage: 24V
- ◆ Low clamping voltage
- ◆ 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) 5A (8/20 μs)
- ◆ ROHS Compliant

Applications

- ◆ Cellular Handsets and Accessories
- ◆ Personal Digital Assistants
- ◆ Notebooks and Handhelds
- ◆ Portable Instrumentation
- ◆ Digital Cameras
- ◆ Peripherals
- ◆ Audio Players

Marking Information



24D = Device Marking Code

Ordering Information

| Part Number | Marking | Packaging | Reel Size |
|-------------|---------|------------------|-----------|
| DC2421D5S | 24D | 3000/Tape & Reel | 7 inch |

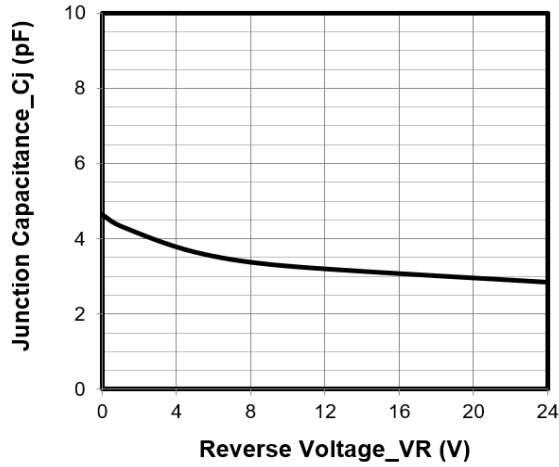
Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|--|--------|-------------|------------------|
| Peak Pulse Power (8/20 μs) | Ppk | 180 | W |
| Peak Pulse Current (8/20 μs) | Ipp | 5 | A |
| ESD per IEC 61000-4-2 (Air) | VESD | ± 30 | kV |
| ESD per IEC 61000-4-2 (Contact) | | ± 30 | |
| Operating Temperature Range | TJ | -55 to +125 | $^\circ\text{C}$ |
| Storage Temperature Range | Tstg | -55 to +150 | $^\circ\text{C}$ |

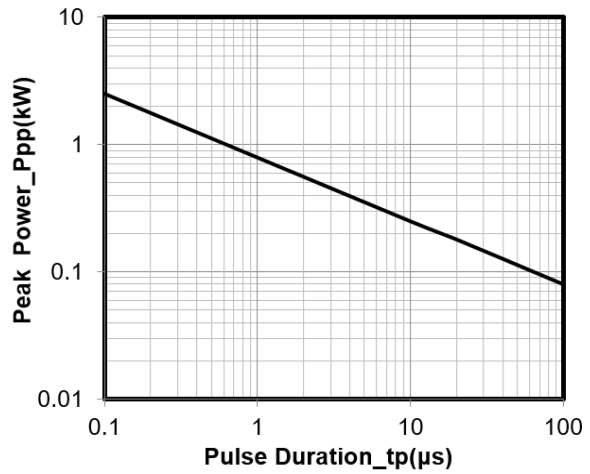
Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
|-------------------------|--------|------|-----|-----|---------------|---|
| Reverse Working Voltage | VRWM | | | 24 | V | |
| Breakdown Voltage | VBR | 24.5 | | | V | $I_T = 2\mu\text{A}$ |
| Reverse Leakage Current | I_R | | | 0.2 | μA | VRWM = 24V |
| Clamping Voltage | VC | | | 32 | V | I _{PP} = 1A (8 x 20 μs pulse) |
| Clamping Voltage | VC | | | 36 | V | I _{PP} = 5A (8 x 20 μs pulse) |
| Junction Capacitance | CJ | | 5 | | pF | VR = 0V, f = 1MHz |

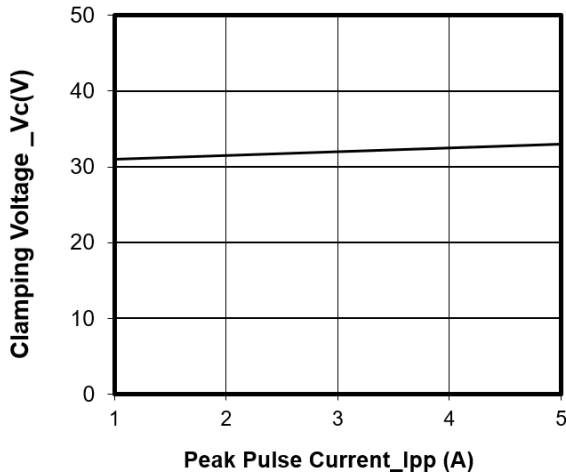
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



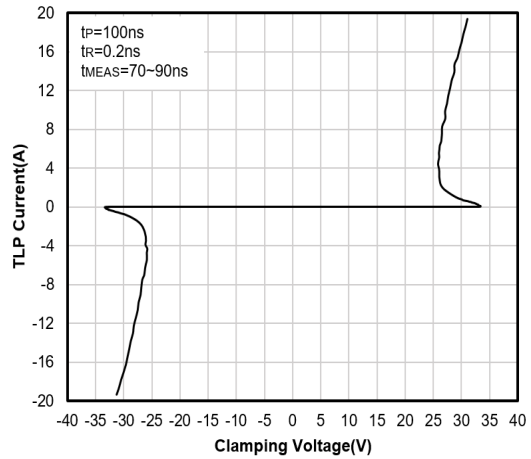
Junction Capacitance vs. Reverse Voltage



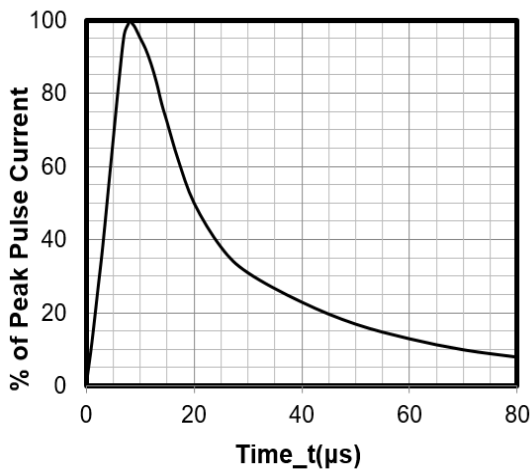
Peak Pulse Power vs. Pulse Time



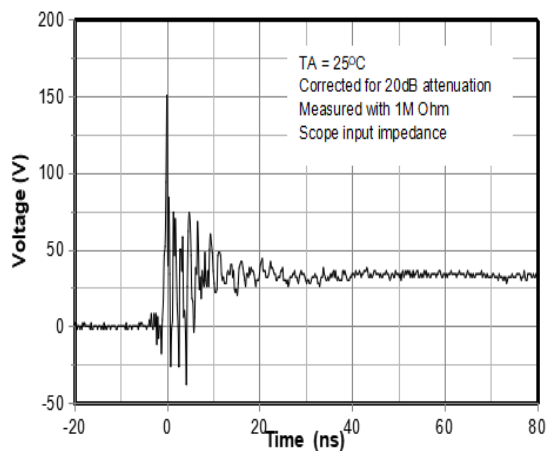
Clamping Voltage vs. Peak Pulse Current



TLP Curve

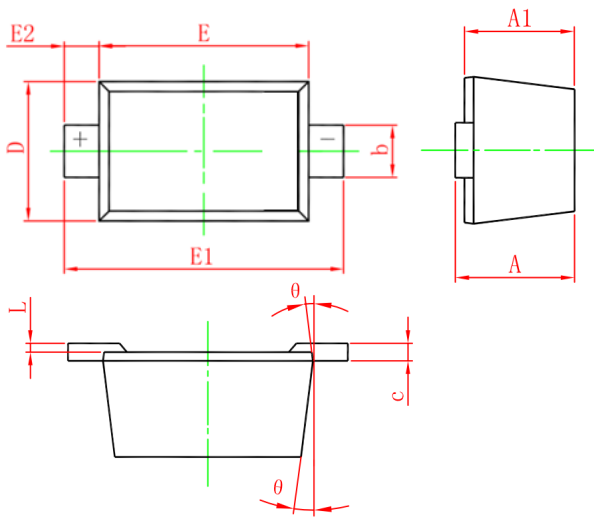


8 X 20μs Pulse Waveform



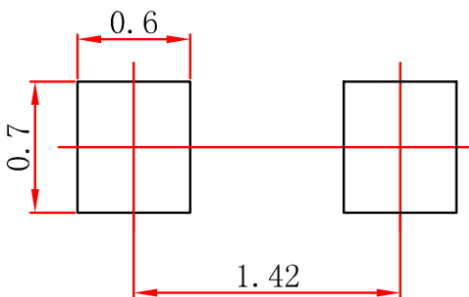
ESD Clamping Voltage
8 kV Contact per IEC61000-4-2

SOD-523 Package Outline Drawing



| SYM | DIMENSIONS | | | | | |
|-----|-------------|-----|------|----------|-----|-------|
| | MILLIMETERS | | | INCHES | | |
| | MIN | NOM | MAX | MIN | NOM | 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 | 0.20REF | | | 0.008REF | | |
| L | 0.01 | -- | 0.07 | 0.001 | -- | 0.003 |
| Θ | 7° REF | | | 7° REF | | |

Suggested Land Pattern



Unit : mm

Contact Information

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