

### Description

The DC2401D5-L is a 24V uni-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and ultra low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The DC2401D5-L complies with the IEC 61000-4-2(ESD) with  $\pm 30\text{kV}$  air and  $\pm 30\text{kV}$  contact discharge. It is assembled into an ultra-small SOD-523 lead-free package. The small size and high ESD surge protection make DC2401D5-L an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

### Features

- ◆ Protects one data or power line
- ◆ Ultra low leakage: nA level
- ◆ Working voltage: 24V
- ◆ Low clamping voltage
- ◆ Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 30\text{kV}$
    - Contact discharge:  $\pm 30\text{kV}$
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) : 3.5A(8/20 $\mu\text{s}$ )
- ◆ ROHS Compliant

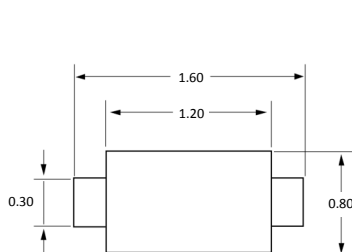
### Mechanical Characteristics

- ◆ 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

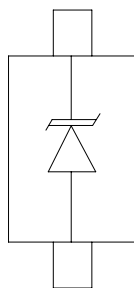
### Applications

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

### Dimensions and Pin Configuration



Package Dimensions



Circuit and Pin Schematic

### Marking Information



4D = Device Marking Code  
Bar denotes Pin1

### Ordering Information

Part Number	Marking	Packaging	Reel Size
DC2401D5-L	4D	3000/Tape & Reel	7 inch

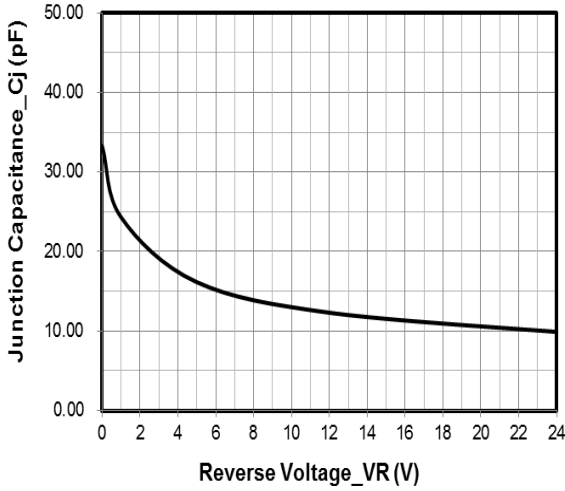
### **Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$ unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppk	220	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	Ipp	3.5	A
ESD per IEC 61000-4-2 (Air)	VESD	$\pm 30$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 30$	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

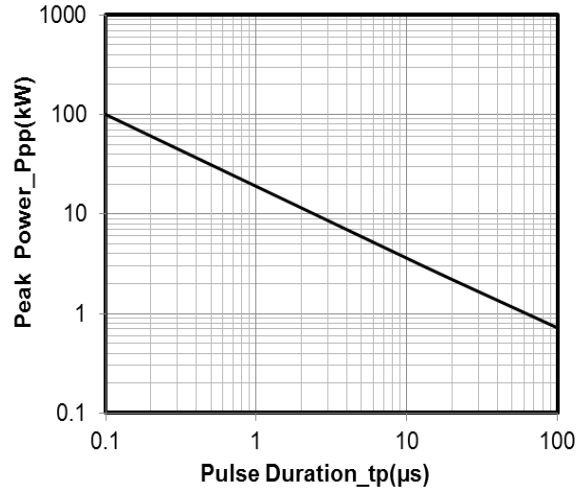
### **Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			24	V	
Breakdown Voltage	VBR	27			V	IT = 1mA
Reverse Leakage Current	IR			0.2	$\mu\text{A}$	VRWM = 24V
Forward Voltage	VF		1.0	1.2	V	IF = 10mA
Clamping Voltage	VC			33	V	I <sub>PP</sub> = 1A (8 x 20 $\mu\text{s}$ pulse)
Clamping Voltage	VC			45	V	I <sub>PP</sub> = 3.5A (8 x 20 $\mu\text{s}$ pulse)
Junction Capacitance	CJ			40	pF	VR = 0V, f = 1MHz

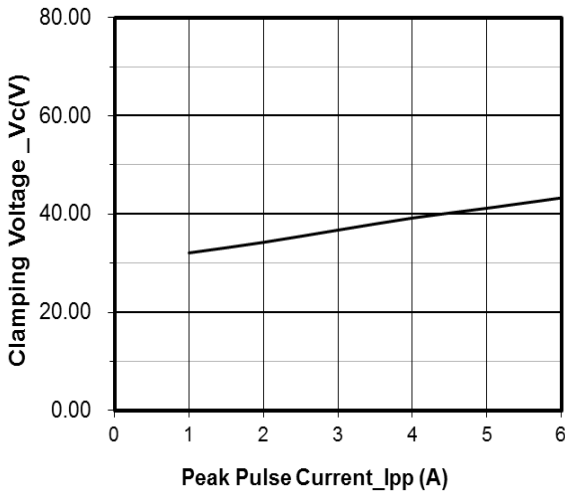
**Typical Performance Characteristics (TA=25°C unless otherwise Specified)**



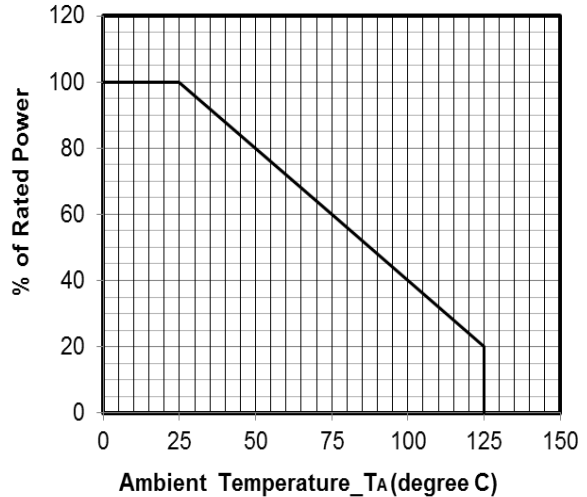
**Junction Capacitance vs. Reverse Voltage**



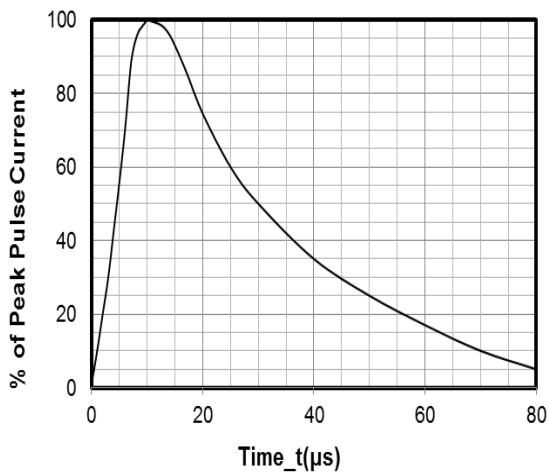
**Peak Pulse Power vs. Pulse Time**



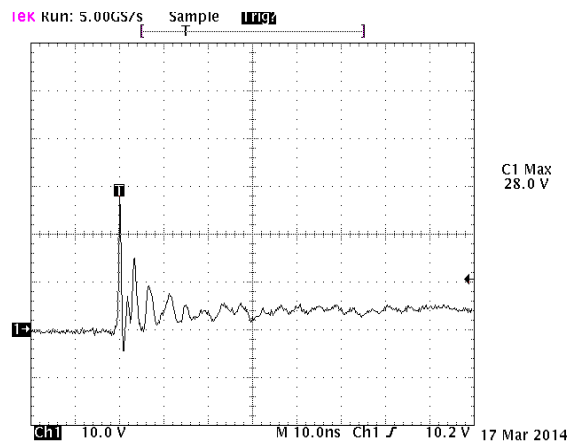
**Clamping Voltage vs. Peak Pulse Current**



**Power Derating Curve**



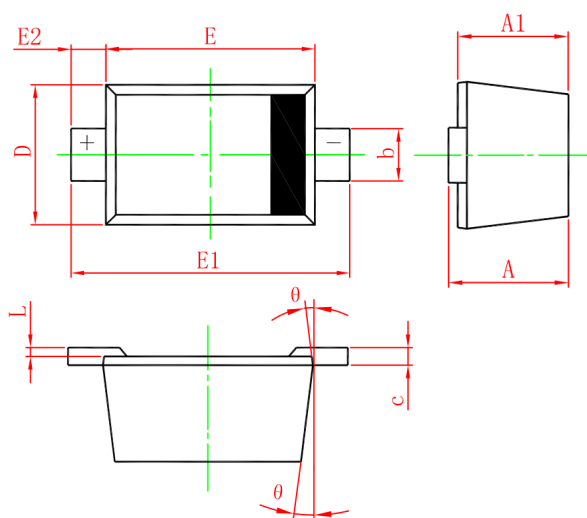
**8 X 20μs Pulse Waveform**



Note: Data is taken with a 10x attenuator

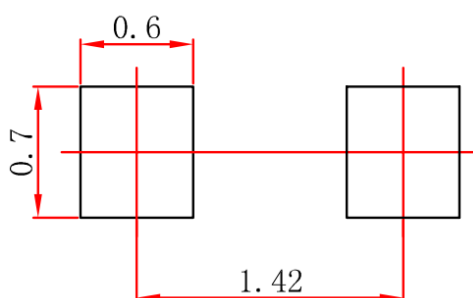
**ESD Clamping Voltage  
8 kV Contact per IEC61000-4-2**

## 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



单位 (mm)

## Contact Information

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