

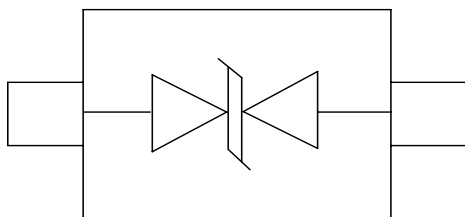
Description

The DC0561D5 is a bi-directional 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 DC0561D5 complies with the IEC 61000-4-2(ESD) with $\pm 15\text{kV}$ air and $\pm 8\text{kV}$ contact discharge. It is assembled into an ultra-small SOD-523 lead-free package. The small size and high ESD surge protection make DC0561D5 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



Circuit and Pin Schematic

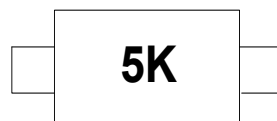
Features

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

Applications

- ◆ Cellular Handsets and Accessories
- ◆ Personal Digital Assistants
- ◆ Notebooks and Handhelds
- ◆ Portable Instrumentation
- ◆ Digital Cameras
- ◆ Peripherals
- ◆ Audio Players
- ◆ Keypads, Side Keys, LCD Displays, USB2.0

Marking Information



5K = Device Marking Code

Ordering Information

Part Number	Marking	Packaging	Reel Size
DC0561D5	5K	3000/Tape & Reel	7 inch

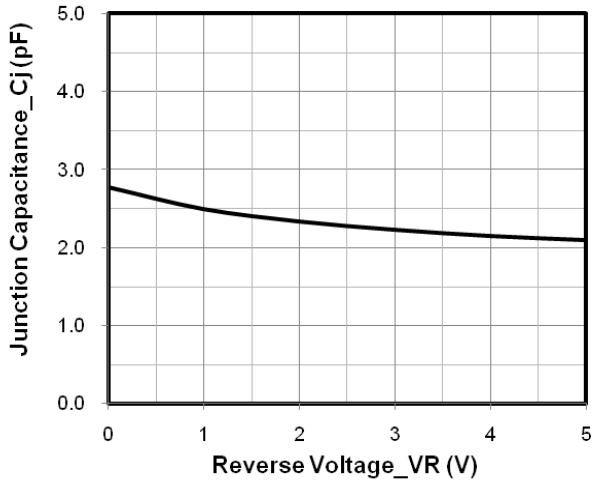
Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
ESD per IEC 61000-4-2 (Air)	VESD	±20	kV
ESD per IEC 61000-4-2 (Contact)		±20	
Peak Pulse Power (8/20µs)	PPK	25	W
Peak Pulse Current	IPP	2	A
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	Tstg	-55 to +150	°C

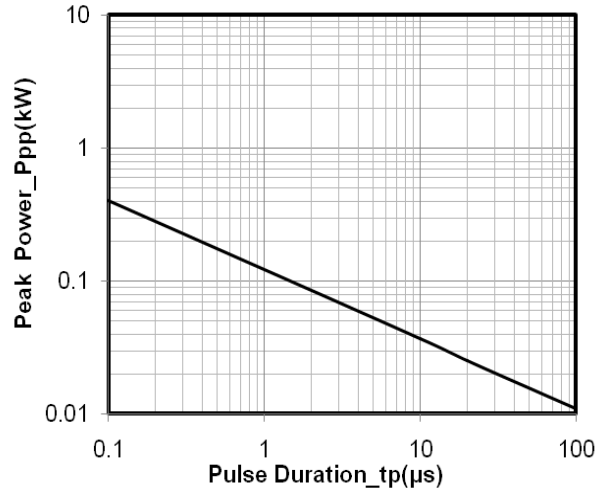
Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			5	V	Pin 1 to Pin 2 or Pin 2 to Pin 1
Breakdown Voltage	VBR	6			V	$I_T = 1\text{mA}$, Pin 1 to Pin 2 or Pin 1 to Pin 2
Reverse Leakage Current	I_R			0.2	µA	VRWM = 5V, Pin 1 to Pin 2 or Pin 1 to Pin 2
Clamping Voltage	VC			10	V	IPP = 1A (8 x 20µs pulse), Pin 1 to Pin 2 or Pin 1 to Pin 2
Clamping Voltage	VC			12.5	V	IPP = 2A (8 x 20µs pulse), Pin 1 to Pin 2 or Pin 1 to Pin 2
Junction Capacitance	CJ		2.5	3	pF	VR = 0V, f = 1MHz

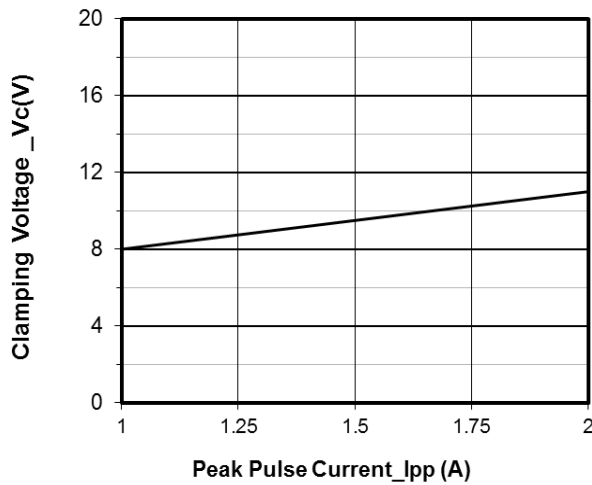
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



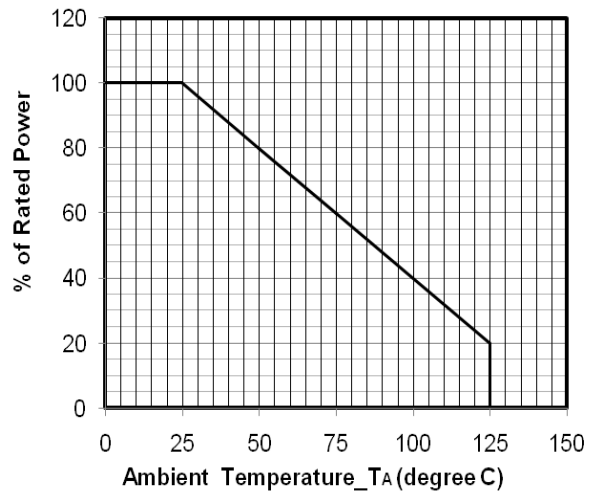
Junction Capacitance vs. Reverse Voltage



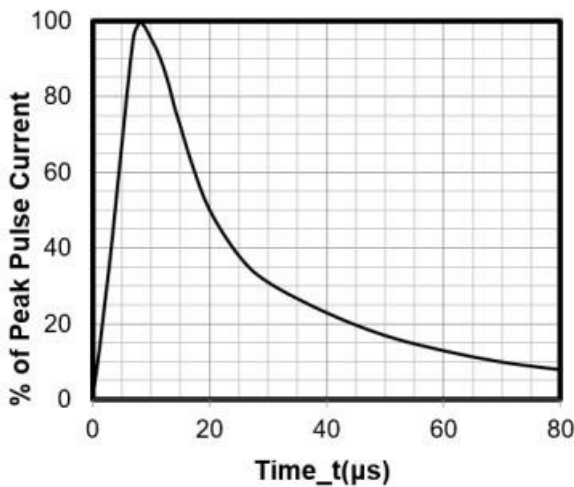
Peak Pulse Power vs. Pulse Time



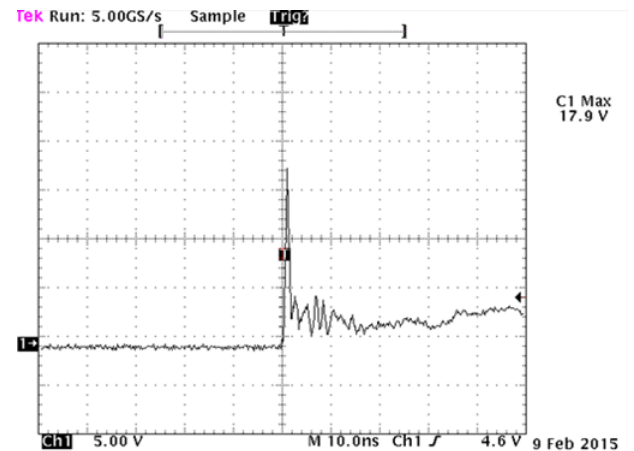
Clamping Voltage vs. Peak Pulse Current (tp = 8/20us)



Power Derating Curve



8 X 20μs Pulse Waveform

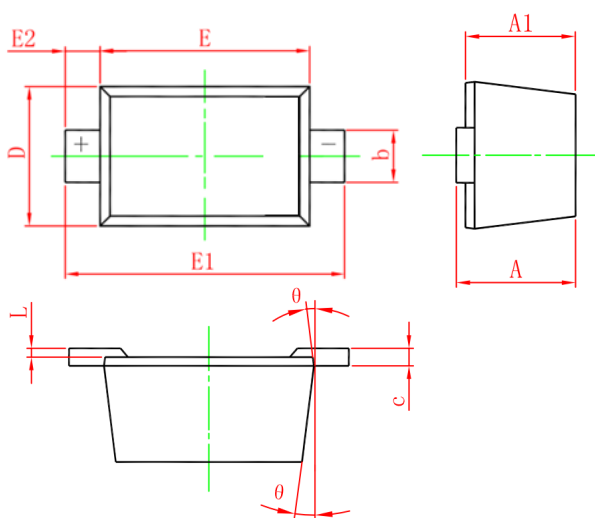


Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

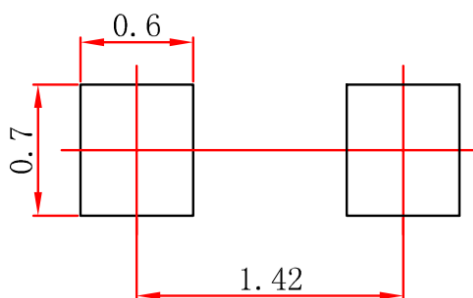
+8 kV Contact per IEC61000-4-2

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



Unit : mm

Contact Information

Changzhou D-first Electronics CO.,Ltd.

www.first-electronic.com

Email: xhf@first-electronic.cn

Phone: +86 (0519) -8817 1671