

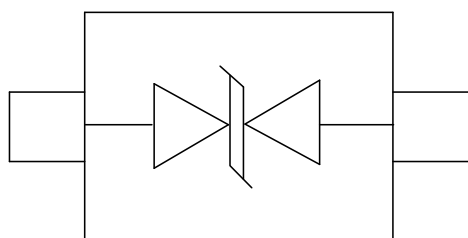
## Description

The DCX581D3UH is a high power 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 lines. The DCX581D3UH complies with the IEC 61000-4-2 (ESD) standard with  $\pm 15\text{kV}$  air and  $\pm 8\text{kV}$  contact discharge. It is assembled into a 3-pin SOD-323 lead-free package. The leads are finished with NiPdAu. Each device will protect one line. The combination of small size, and high surge capability makes them ideal for use in applications such as cellular phones, LCD displays, USB, and multimedia card interfaces.

## Mechanical Characteristics

- ◆ Package: SOD-323
- ◆ Lead Finish: NiPdAu
- ◆ Case Material: "Green" Molding Compound.
- ◆ UL Flammability Classification Rating 94V-0
- ◆ 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

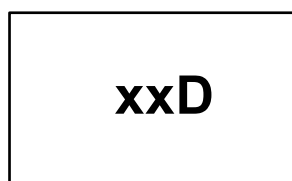
## Features

- ◆ 2200W peak pulse power (8/20 $\mu\text{s}$ )
- ◆ Low leakage: nA level
- ◆ Low Operating voltage: 4.5V, 5V
- ◆ Ultra low clamping voltage
- ◆ One power line protects
- ◆ 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)
- ◆ RoHS Compliant

## Applications

- ◆ Power Management
- ◆ Industrial Application
- ◆ Power Supply Protection

## Marking Information



xxD=Device Marking Code

## Ordering Information

Part Number	Marking	Packaging	Reel Size
DCX581D3UH	xxD	3000/Tape & Reel	7 inch

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

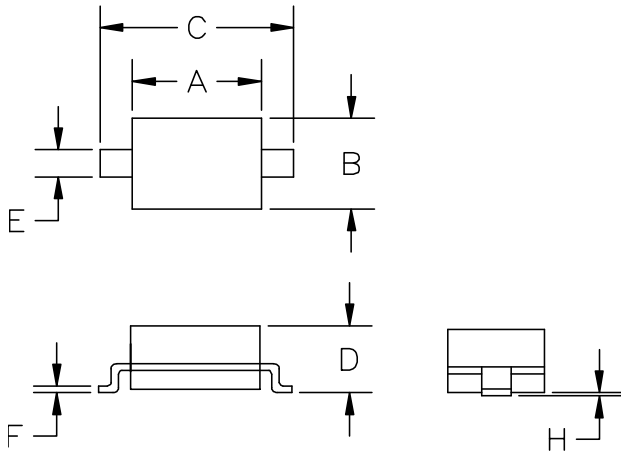
Parameter	Symbol	Value	Unit
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	±30	kV
ESD per IEC 61000-4-2 (Contact)		±30	
Operating Temperature Range	T <sub>J</sub>	-55 to +125	°C
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	°C

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

DC4581D3UH						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			4.5	V	
Breakdown Voltage	V <sub>BR</sub>	4.7			V	I <sub>T</sub> = 1mA
Reverse Leakage Current	I <sub>R</sub>		1	100	nA	V <sub>RWM</sub> = 4.5V
Clamping Voltage	V <sub>C</sub>		15		V	I <sub>PP</sub> = 145A (8 x 20µs pulse)
Peak Pulse Current	I <sub>PP</sub>			145	A	t <sub>p</sub> =8/20µs
Junction Capacitance	C <sub>J</sub>		300		pF	V <sub>R</sub> = 0V, f = 1MHz

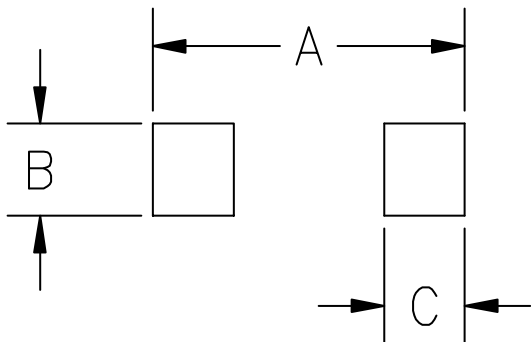
DC0581D3UH						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			5	V	
Breakdown Voltage	VBR	6			V	IT = 1mA
Reverse Leakage Current	IR		1	100	nA	VRWM = 5V
Clamping Voltage	VC		17		V	I <sub>PP</sub> = 130A (8 x 20µs pulse)
Peak Pulse Current	I <sub>PP</sub>			130	A	tp=8/20µs
Junction Capacitance	CJ		250		pF	VR = 0V, f = 1MHz

## SOD-323 Package Outline Drawing



SYM	DIMENSIONS			
	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.50	1.80	0.060	0.071
B	1.20	1.40	0.045	0.054
C	2.30	2.70	0.090	0.107
D	-	1.10	-	0.043
E	0.30	0.40	0.012	0.016
F	0.10	0.25	0.004	0.010
H	-	0.10	-	0.004

## Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
A	3.15	0.120
B	0.80	0.031
C	0.80	0.031

## Contact Information

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