Description

The DCxx71D3UH is a high power uni-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 DCxx71D3UH complies with the IEC 61000-4-2 (ESD) standard with ±30kV air and ±30kV 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.

Features

- 2200W peak pulse power (8/20μs)
- Protects one data or power line
- Operating voltage: 3.3V,5V,7V,12V,15V 18V,24V,36V
- Ultra low clamping voltage
- High peak pulse current capability
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±30kV
    Contact discharge: ±30kV
  - IEC61000-4-4 (EFT) 80A (5/50ns)
- RoHS Compliant

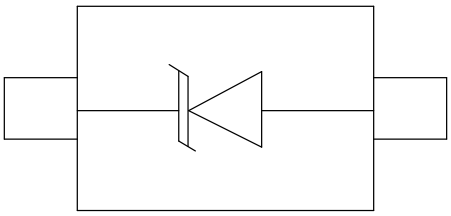
Mechanical Characteristics

- 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

Applications

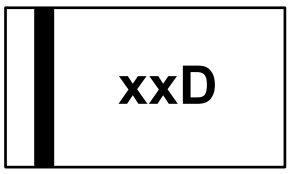
- Power Management
- Battery Protetion
- Power Supply Protection
- Mobile Phones and Accessories
- USB VBus
- Hand Held Portablr Applications

Dimensions and Pin Configuration



SOD-323(Top View)
Circuit and Pin Schematic

Marking Information



xxD：Device Marking Code
Bar denotes Cathode

Ordering Information

Part Number	Marking	Packaging	Reel Size
DCxx71D3UH	xxD	3000/Tape & Reel	7 inch

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±30 ±30	kV
Operating Temperature Range	T_J	−40 to +85	°C
Storage Temperature Range	Tstg	−55 to +150	°C

Electrical Characteristics (T_A=25°C unless otherwise specified)

DC0371D3UH (Marking Code: 37D)						
Parameter	**Symbol**	**Min**	**Typ**	**Max**	**Unit**	**Test Condition**
Reverse Working Voltage	V_{RWM}			3.3	V	
Breakdown Voltage	V_{BR}	3.5			V	I_T = 1mA
Reverse Leakage Current	I_R			1.0	μA	V_{RWM} = 3.3V
Forward Voltage	V_F		1.0	1.2	V	I_F=10mA
Clamping Voltage	V_C			15	V	I_{PP} = 140A (8 x 20μs pulse)
Peak Pulse Current	I_{PP}			140	A	tp=8/20μs
Junction Capacitance	C_J			750	pF	VR = 0V, f = 1MHz

DC0571D3UH (Marking Code: 57D)						
Parameter	**Symbol**	**Min**	**Typ**	**Max**	**Unit**	**Test Condition**
Reverse Working Voltage	V_{RWM}			5	V	
Breakdown Voltage	V_{BR}	6			V	I_T = 1mA
Reverse Leakage Current	I_R			1.0	μA	V_{RWM} = 5V
Forward Voltage	V_F		1.0	1.2	V	I_F=10mA
Clamping Voltage	V_C			17	V	I_{PP} = 130A (8 x 20μs pulse)
Peak Pulse Current	I_{PP}			130	A	tp=8/20μs
Junction Capacitance	C_J			650	pF	VR = 0V, f = 1MHz

DC0771D3UH (Marking Code: 77D)						
Parameter	**Symbol**	**Min**	**Typ**	**Max**	**Unit**	**Test Condition**
Reverse Working Voltage	V_{RWM}			7	V	
Breakdown Voltage	V_{BR}	7.5			V	I_T = 1mA
Reverse Leakage Current	I_R			0.5	μA	V_{RWM} = 7V
Forward Voltage	V_F		1.0	1.2	V	I_F=10mA
Clamping Voltage	V_C			20	V	I_{PP} = 115A (8 x 20μs pulse)
Peak Pulse Current	I_{PP}			115	A	tp=8/20μs
Junction Capacitance	C_J			550	pF	VR = 0V, f = 1MHz

DC1271D3UH (Marking Code: 72D)						
Parameter	**Symbol**	**Min**	**Typ**	**Max**	**Unit**	**Test Condition**
Reverse Working Voltage	V_{RWM}			12	V	
Breakdown Voltage	V_{BR}	12.6			V	I_T = 1mA
Reverse Leakage Current	I_R			0.1	μA	V_{RWM} = 12V
Forward Voltage	V_F		1.0	1.2	V	I_F=10mA
Clamping Voltage	V_C			28	V	I_{PP} = 80A (8 x 20μs pulse)
Peak Pulse Current	I_{PP}			80	A	tp=8/20μs
Junction Capacitance	C_J			500	pF	VR = 0V, f = 1MHz

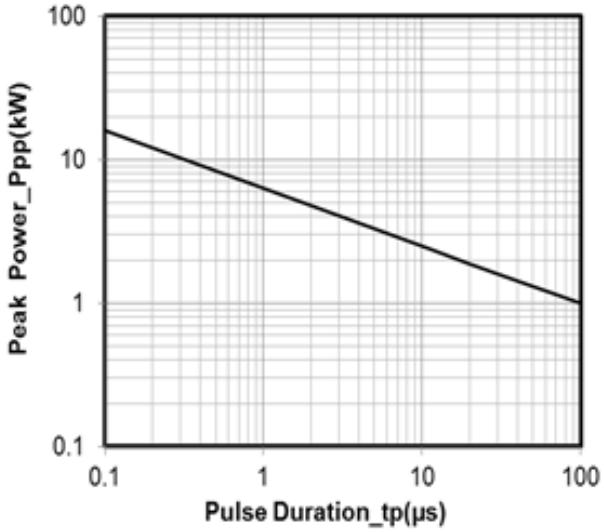
DC1571D3UH (Marking Code: 75D)						
Parameter	**Symbol**	**Min**	**Typ**	**Max**	**Unit**	**Test Condition**
Reverse Working Voltage	V_{RWM}			15	V	
Breakdown Voltage	V_{BR}	16.5			V	I_T = 1mA
Reverse Leakage Current	I_R			0.1	μA	V_{RWM} = 15V
Forward Voltage	V_F		1.0	1.2	V	I_F=10mA
Clamping Voltage	V_C			37	V	I_{PP} = 60A (8 x 20μs pulse)
Peak Pulse Current	I_{PP}			60	A	tp=8/20μs
Junction Capacitance	C_J			450	pF	VR = 0V, f = 1MHz

DC1871D3UH (Marking Code: 78D)						
Parameter	**Symbol**	**Min**	**Typ**	**Max**	**Unit**	**Test Condition**
Reverse Working Voltage	V_{RWM}			18	V	
Breakdown Voltage	V_{BR}	19.6			V	I_T = 1mA
Reverse Leakage Current	I_R			0.1	μA	V_{RWM} = 18V
Forward Voltage	V_F		1.0	1.2	V	I_F=10mA
Clamping Voltage	V_C			50	V	I_{PP} = 45A (8 x 20μs pulse)
Peak Pulse Current	I_{PP}			45	A	tp=8/20μs
Junction Capacitance	C_J			350	pF	VR = 0V, f = 1MHz

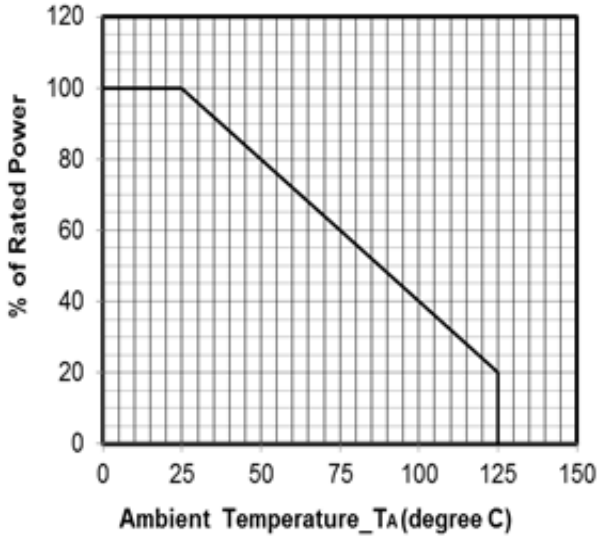
DC2471D3UH (Marking Code: 74D)						
Parameter	**Symbol**	**Min**	**Typ**	**Max**	**Unit**	**Test Condition**
Reverse Working Voltage	V_{RWM}			24	V	
Breakdown Voltage	V_{BR}	26.7			V	I_T = 1mA
Reverse Leakage Current	I_R			0.1	μA	V_{RWM} = 24V
Forward Voltage	V_F		1.0	1.2	V	I_F=10mA
Clamping Voltage	V_C			63	V	I_{PP} = 35A (8 x 20μs pulse)
Peak Pulse Current	I_{PP}			35	A	tp=8/20μs
Junction Capacitance	C_J			200	pF	VR = 0V, f = 1MHz

DC3671D3UH (Marking Code: 79D)						
Parameter	**Symbol**	**Min**	**Typ**	**Max**	**Unit**	**Test Condition**
Reverse Working Voltage	V_{RWM}			36	V	
Breakdown Voltage	V_{BR}	37			V	I_T = 1mA
Reverse Leakage Current	I_R			0.1	μA	V_{RWM} = 36V
Forward Voltage	V_F		1.0	1.2	V	I_F=10mA
Clamping Voltage	V_C			80	V	I_{PP} = 25A (8 x 20μs pulse)
Peak Pulse Current	I_{PP}			25	A	tp=8/20μs
Junction Capacitance	C_J			150	pF	VR = 0V, f = 1MHz

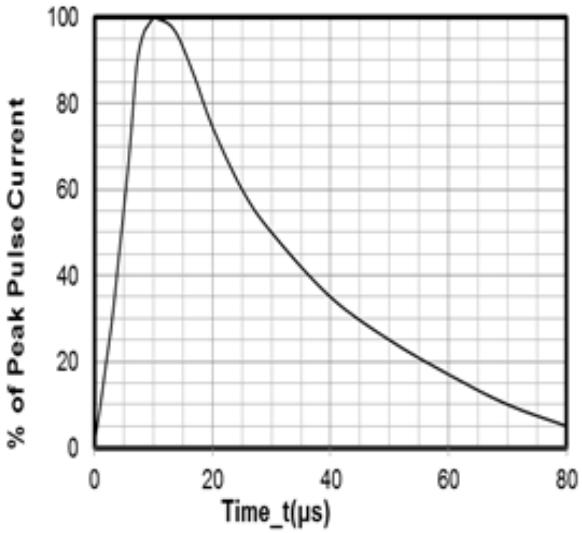
Typical Performance Characteristics (T_A=25℃ unless otherwise Specified)



Junction Capacitance vs. Reverse Voltage

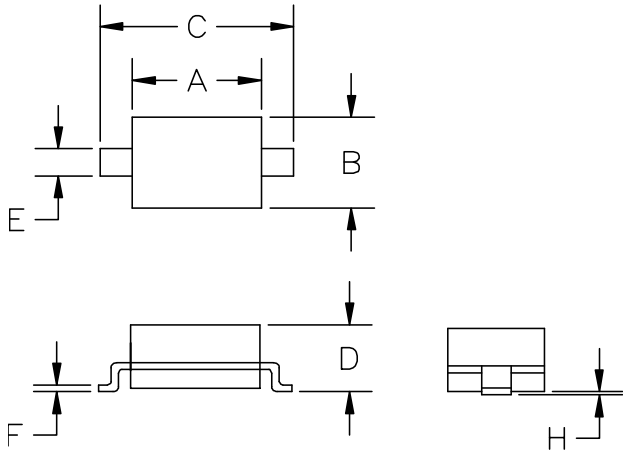


Power Derating Curve



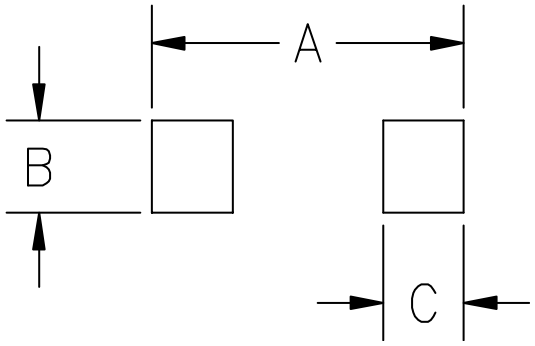
8 X 20 s Pulse Waveform

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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