

### Features

- Fast Switching Speed
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability

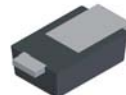
### Mechanical Data

- Case: PowerDI323
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Leads: Matte Tin Finish annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 (e3)
- Polarity: Cathode Band
- Marking Information: See Below
- Ordering Information: See Below
- Weight: 0.005 grams (approximate)

PowerDI323



TOP VIEW



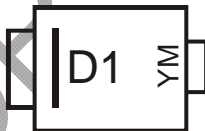
BOTTOM VIEW

### Ordering Information (Note 4)

Part Number	Case	Packaging
PD3SD2580-7	PowerDI323	3000/Tape & Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

### Marking Information



D1 = Product Type Marking Code  
YM = Date Code Marking  
Y = Year (ex: T = 2006)  
M = Month (ex: 9 = September)

#### Date Code Key

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Code	T	U	V	W	X	Y	Z	A	B	C	D	E

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage	V <sub>RM</sub>	100	V
Peak Repetitive Reverse Voltage	V <sub>R(RM)</sub>	80	V
Working Peak Reverse Voltage	V <sub>R(WM)</sub>		
DC Blocking Voltage	V <sub>R</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	57	V
Forward Continuous Current	I <sub>FM</sub>	250	mA
Repetitive Peak Forward Current	I <sub>FRM</sub>	500	mA
Non-Repetitive Peak Forward Surge Current	I <sub>FSM</sub>	3.3 0.5	A
		@ t = 1.0ms @ t = 1.0s	

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 6)	P <sub>D</sub>	500	mW
Thermal Resistance Junction to Ambient Air (Note 6)	R <sub>θJA</sub>	250	/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 5)	V <sub>BR(R)</sub>	80	—	V	I <sub>R</sub> = 1μA
Forward Voltage	V <sub>F</sub>	—	0.715	V	I <sub>F</sub> = 1.0mA
		—	0.72		I <sub>F</sub> = 5.0mA
		—	0.855		I <sub>F</sub> = 10mA
		—	0.90		I <sub>F</sub> = 50mA
		—	1.0		I <sub>F</sub> = 100mA
		—	1.25		I <sub>F</sub> = 150mA
Leakage Current (Note 5)	I <sub>R</sub>	—	25	nA	V <sub>R</sub> = 20V
		—	30	nA	V <sub>R</sub> = 25V
		—	100	nA	V <sub>R</sub> = 80V
		—	30	μA	V <sub>R</sub> = 25V, T <sub>J</sub> = +150°C
		—	50	μA	V <sub>R</sub> = 75V, T <sub>J</sub> = +150°C
Total Capacitance	C <sub>T</sub>	—	2.3	pF	V <sub>R</sub> = 0, f = 1.0MHz
Reverse Recovery Time	t <sub>rr</sub>	—	4.0	ns	I <sub>F</sub> = I <sub>R</sub> = 10mA, I <sub>rr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω

Notes: 5. Short duration pulse test used to minimize self-heating effect.  
6. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.

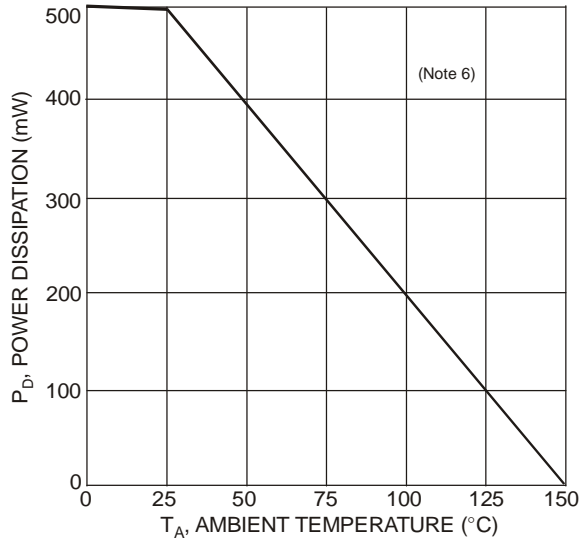


Figure 1 Power Derating Curve

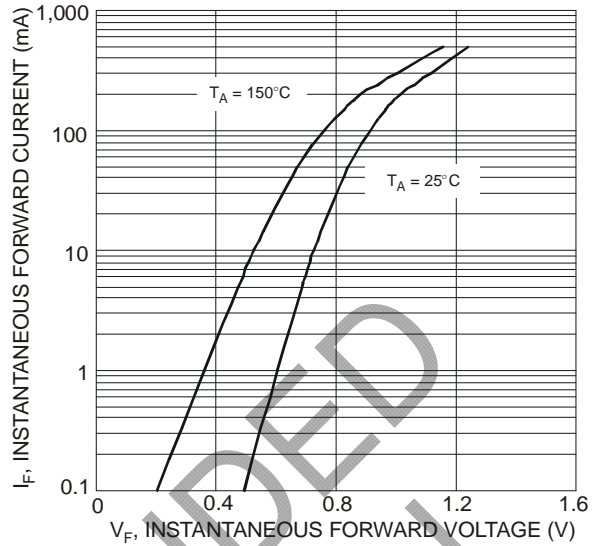


Figure 2 Typical Forward Characteristics

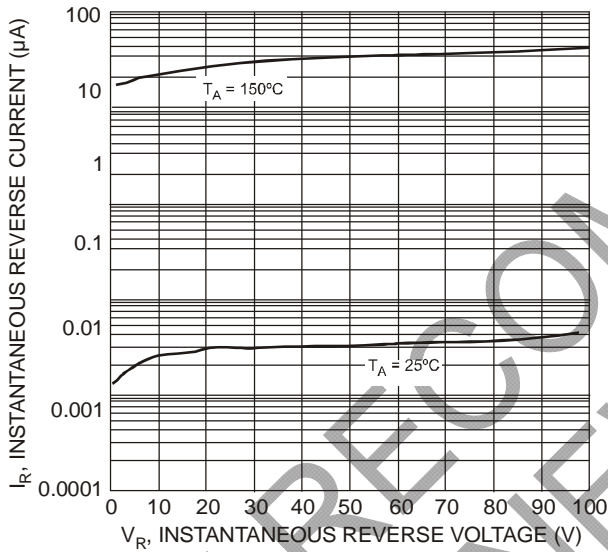


Figure 3 Typical Reverse Characteristics

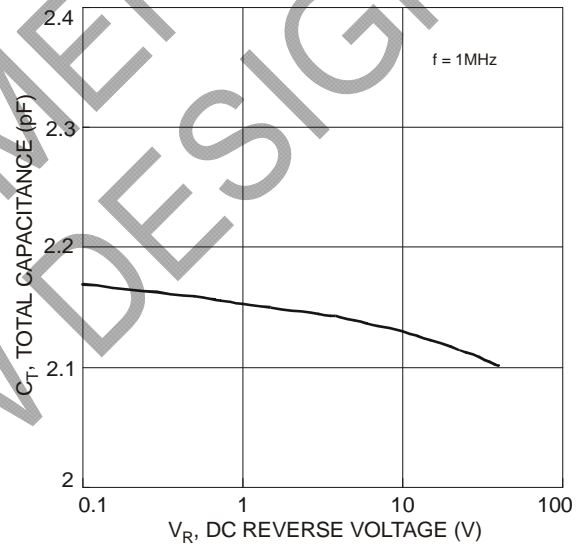


Figure 4 Total Capacitance vs. Reverse Voltage

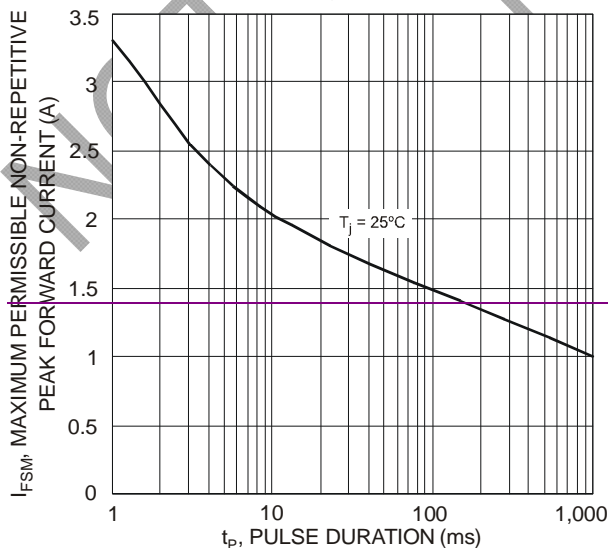


Fig. 5 Maximum Permissible Non-Repetitive Peak Forward Current as a Function of Pulse Duration

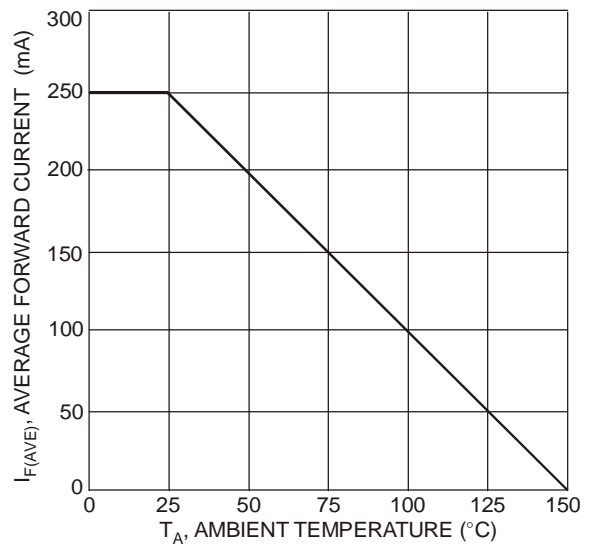
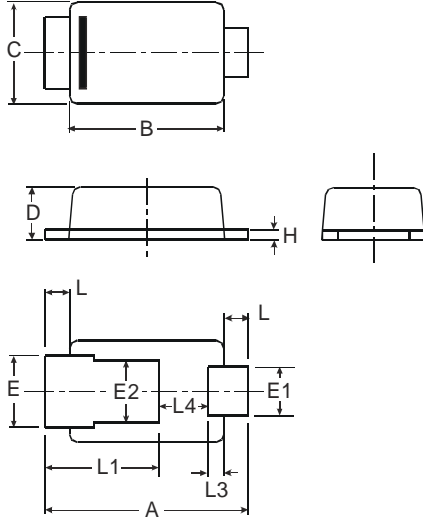


Figure 6 Forward Current Derating Curve

## Package Outline Dimensions

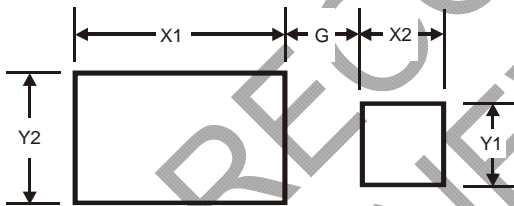
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



POWERDI <sup>®</sup> 323			
Dim	Min	Max	Typ
A	2.40	2.60	2.50
B	1.85	1.95	1.90
C	1.20	1.30	1.25
D	0.60	0.70	0.65
E	0.78	0.98	0.88
E1	0.50	0.70	0.60
E2	0.60	1.00	0.80
H	0.08	0.18	0.13
L	0.20	0.40	0.30
L1	—	—	1.40
L3	—	—	0.20
L4	0.40	0.80	0.60
All Dimensions in mm			

## Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



Dimensions	Value (in mm)
G	0.5
X1	2.0
X2	0.8
Y1	0.8
Y2	1.1

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