

## Features

- Fast Switching Speed
- Lead Free Finish/RoHS Compliant (Note 3)
- "Green" Molding Compound (No Br, Sb) (Note 4)
- Qualified to AEC-Q101 Standards for High Reliability

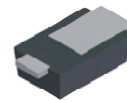
## Mechanical Data

- Case: Power DI®323
- 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
- Polarity: Cathode Band
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.005 grams (approximate)

Power DI®323



TOP VIEW



BOTTOM VIEW

## 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 @ t = 1.0ms	I <sub>FSM</sub>	3.3	A
@ t = 1.0s		1.0	

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance Junction to Ambient Air (Note 2)	R <sub>θJA</sub>	260	°C/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 1)	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 1)	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:
1. Short duration pulse test used to minimize self-heating effect.
  2. 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>.
  3. RoHS revision 13.2.2003. Glass and high temperature solder exemptions applied, see *EU Directive Annex Notes 5 and 7*.
  4. Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).

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PD3SD2580

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March 2008

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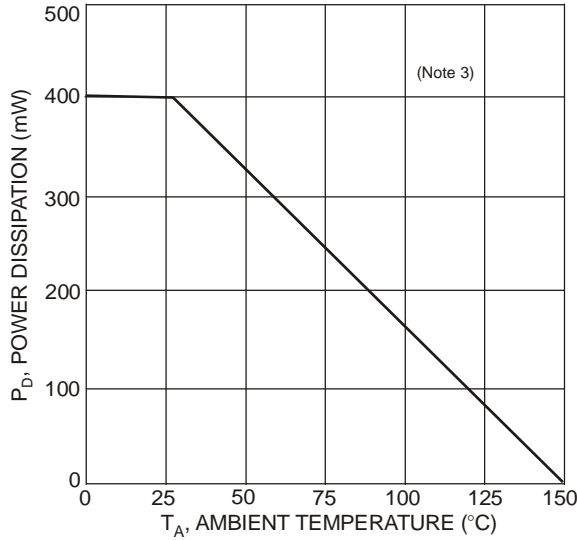


Fig. 1 Power Derating Curve

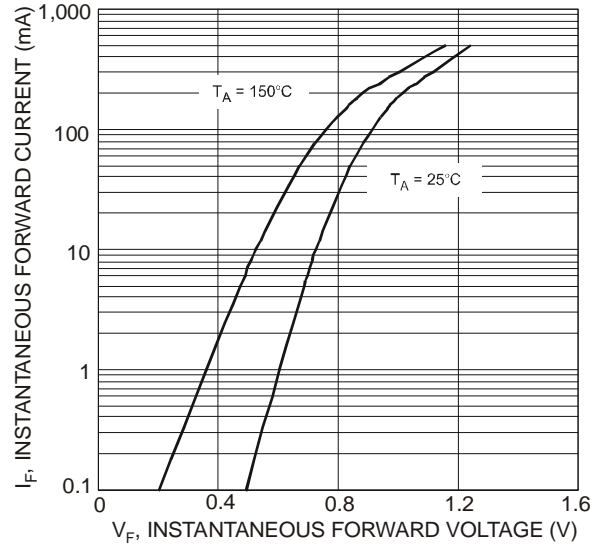


Fig. 2 Typical Forward Characteristics

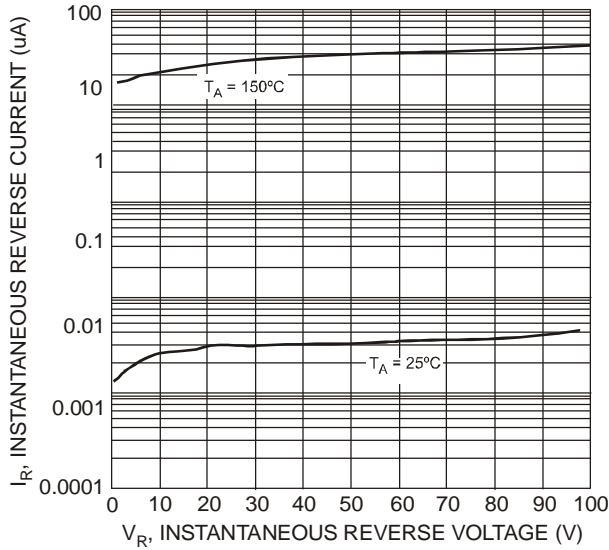


Fig. 3 Typical Reverse Characteristics

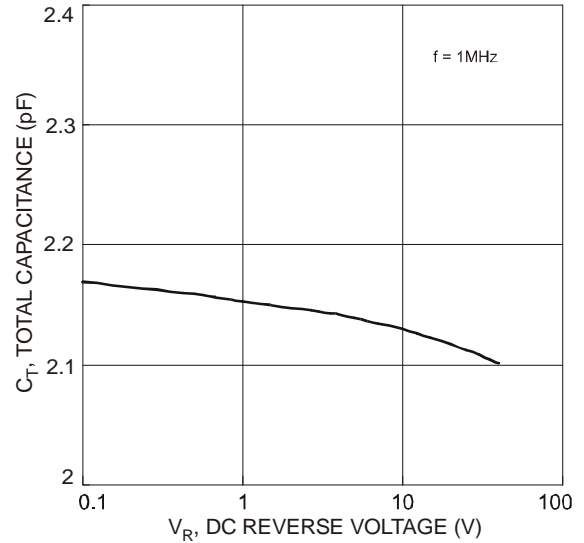


Fig. 4 Total Capacitance vs. Reverse Voltage

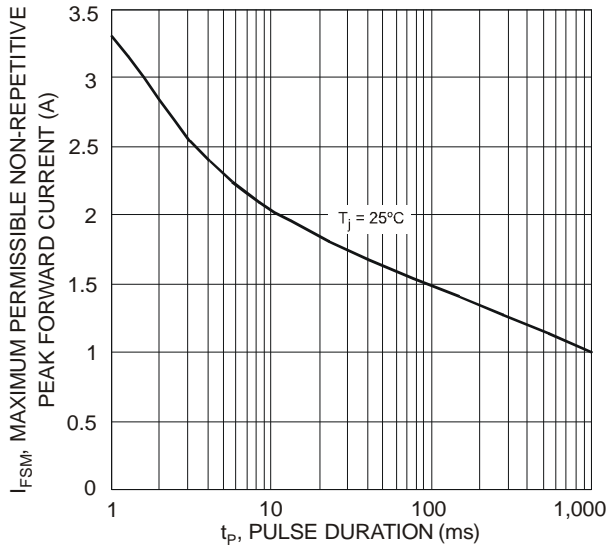


Fig. 5 Maximum Permissible Non-Repetitive Peak Forward Current as a Function of Pulse Duration

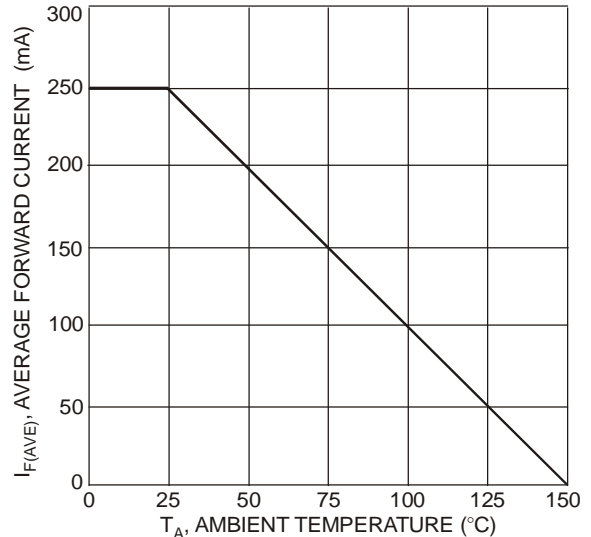
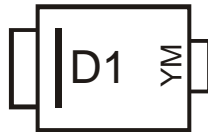


Fig. 6 Forward Current Derating Curve

**Ordering Information** (Note 5)

Part Number	Case	Packaging
PD3SD2580-7	PowerDI <sup>®</sup> 323	3000/Tape & Reel

Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**


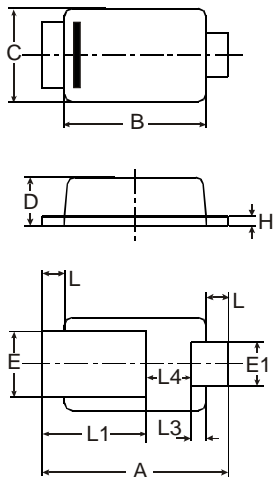
D1 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: T = 2006)  
 M = Month (ex: 9 = September)

## Date Code Key

Year	2006	2007	2008	2009	2010	2011	2012
Code	T	U	V	W	X	Y	Z

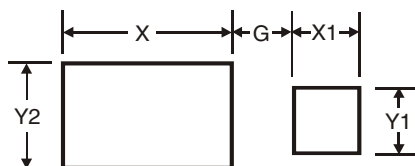
  

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

**Package Outline Dimensions**


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
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**


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

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