

Features

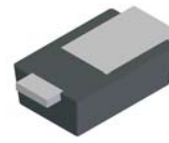
- Fast Switching Speed
- **Lead Free Finish/RoHS Compliant (Note 3)**
- **"Green" Molding Compound (No Br, Sb) (Note 4)**
- **Qualified to AEC-Q101 Standards for High Reliability**

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-020C
- Leads: Matte Tin Finish annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: Cathode Band
- Marking: Date Code and Type Code, See Page 3
- Weight: 0.005 grams (approximate)



TOP VIEW



BOTTOM VIEW

Maximum Ratings @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage	V _{RM}	100	V
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	80	V
RMS Reverse Voltage	V _{R(RMS)}	57	V
Forward Continuous Current	I _{FM}	250	mA
Repetitive Peak Forward Current	I _{FRM}	500	mA
Non-Repetitive Peak Forward Surge Current @ t = 1.0ms @ t = 1.0s	I _{FSM}	3.3 1.0	A
Thermal Resistance Junction to Ambient Air (Note 2)	R _{θJA}	260	°C/W
Operating and Storage Temperature Range	T _j , T _{STG}	-65 to +150	°C

Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 1)	V _{BR(R)}	80	—	V	I _R = 1μA
Forward Voltage	V _F	—	0.715 0.72 0.855 0.90 1.0 1.25	V	I _F = 1.0mA I _F = 5.0mA I _F = 10mA I _F = 50mA I _F = 100mA I _F = 150mA
Leakage Current (Note 1)	I _R	—	25 30 100 30 50	nA nA μA μA	V _R = 20V V _R = 25V V _R = 80V V _R = 25V, T _j = 150°C V _R = 75V, T _j = 150°C
Total Capacitance	C _T	—	1.5 1.2	pF	V _R = 0, f = 1.0MHz V _R = 0.5V, f = 1MHz
Reverse Recovery Time	t _{rr}	—	4.0	ns	I _F = I _R = 10mA, I _{rr} = 0.1 x I _R , R _L = 100Ω

- Notes:
1. Short duration test pulse used to minimize self-heating.
 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.

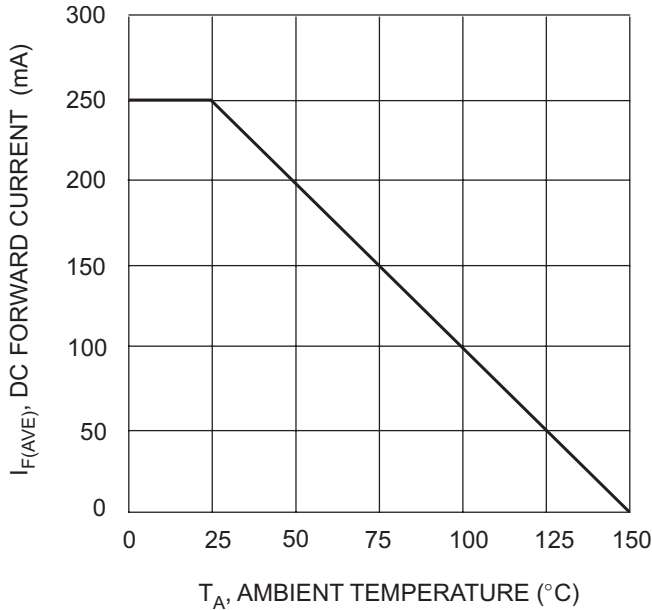


Fig. 1 Forward Current Derating Curve

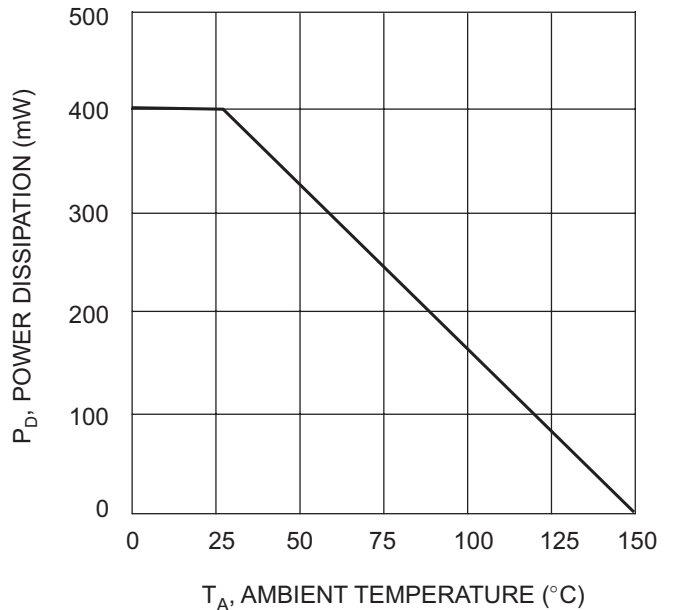


Fig. 2 Power Derating Curve

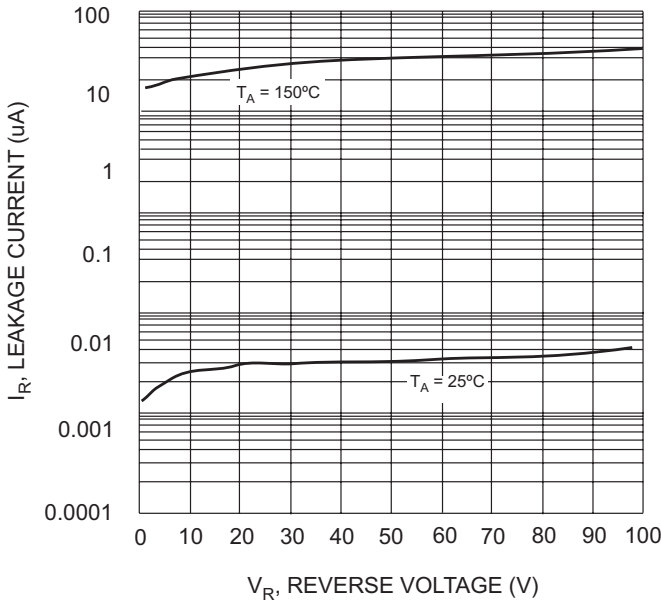


Fig. 3 Typical Reverse Characteristics

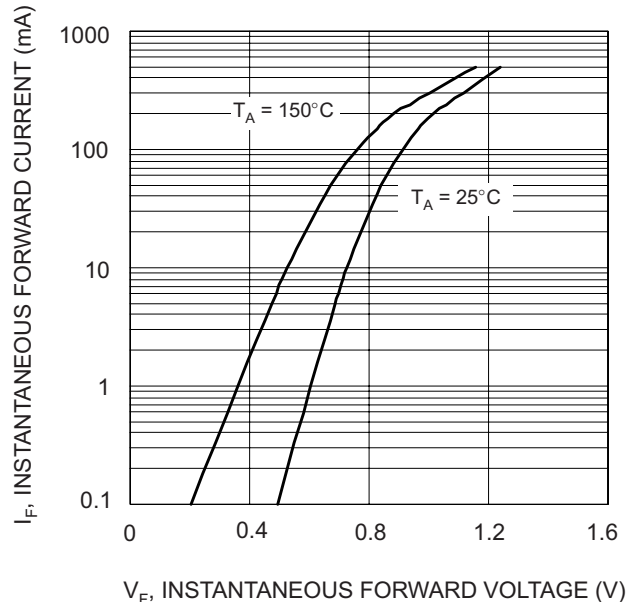


Fig. 4 Typical Forward Characteristics

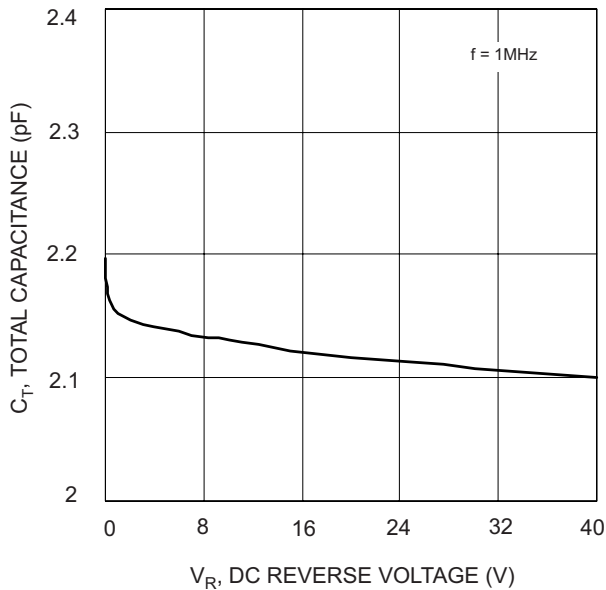


Fig. 5 Total Capacitance vs. Reverse Voltage

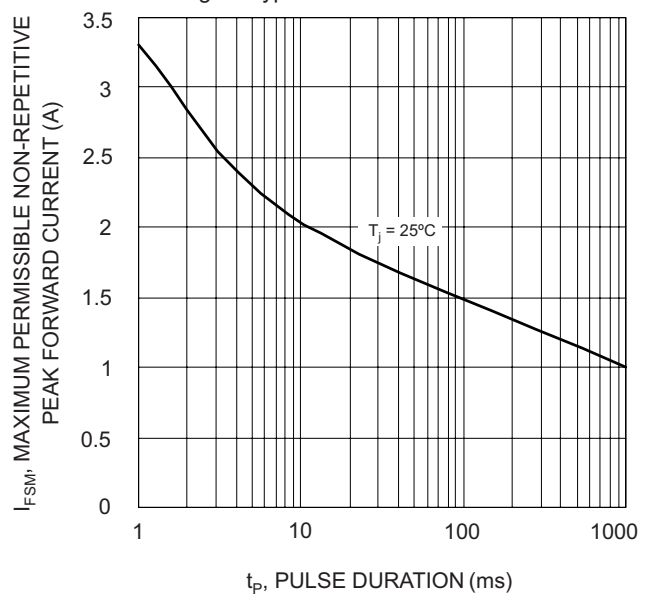


Fig. 6 Maximum Permissible Non-Repetitive Peak Forward Current as a function of pulse duration

Ordering Information (Note 5)

Device	Packaging	Shipping
PD3SD2580-7	Power DI™323	3000/Tape & Reel

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

Marking Information



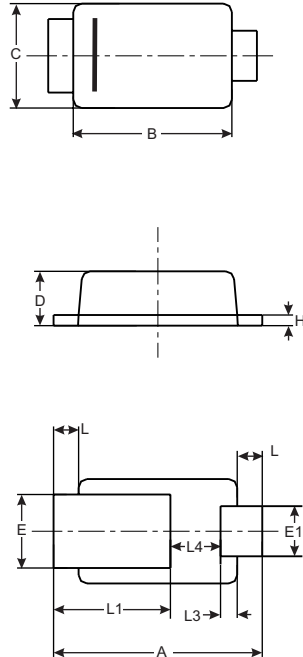
D1 = Product Type Marking Code, See Page 1
 YM = Date Code Marking
 Y = Year (ex: T = 2006)
 M = Month (ex: 9 = September)

Date Code Key

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

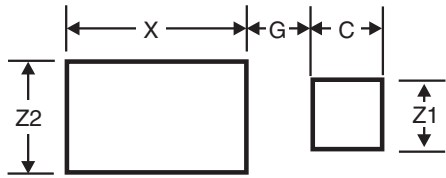
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Package Outline Dimensions



PowerDI™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)
Z1	0.8
Z2	1.1
G	0.5
X	2.0
C	0.8

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