

## Features

- Low Forward Voltage Drop
- Fast Switching
- Ultra-Small Surface Mount Package
- PN Junction Guard Ring for Transient and ESD Protection
- **Lead Free Finish/RoHS Compliant (Note 1)**
- **"Green" Molding Compound (No Br, Sb)**
- **Ultra-Small Surface Mount Package**

## Mechanical Data

- Case: PowerDI®323
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: Cathode Band
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.005 grams (approximate)



Top View

## Maximum Ratings @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	30	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>R</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	21	V
Continuous Forward Current	I <sub>FM</sub>	200	mA
Repetitive Peak Forward Current	I <sub>FRM</sub>	300	mA
Non-Repetitive Peak Forward Surge Current @ t <sub>p</sub> < 10ms	I <sub>FSM</sub>	600	mA

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Ambient Air (Note 2)	R <sub>θJA</sub>	242	°C/W
Operating Temperature Range	T <sub>J</sub>	-65 to +125	°C
Storage Temperature Range	T <sub>STG</sub>	-65 to +150	°C

## Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 3)	V <sub>(BR)R</sub>	30	—	—	V	I <sub>RS</sub> = 100μA
Forward Voltage	V <sub>F</sub>	—	217	240	mV	I <sub>F</sub> = 0.1mA
			280	320		I <sub>F</sub> = 1mA
			350	400		I <sub>F</sub> = 10mA
			400	500		I <sub>F</sub> = 30mA
			485	800		I <sub>F</sub> = 100mA
Leakage Current (Note 3)	I <sub>R</sub>	—	—	2.0	μA	V <sub>R</sub> = 25V
Total Capacitance	C <sub>T</sub>	—	10.7	—	pF	V <sub>R</sub> = 1.0V, f = 1.0MHz
Reverse Recovery Time	t <sub>rr</sub>	—	—	5.0	ns	I <sub>F</sub> = 10mA through I <sub>R</sub> = 10mA to I <sub>R</sub> = 1.0mA, R <sub>L</sub> = 100Ω

- Notes:
1. RoHS revision 13.2.2003. Glass and high temperature solder exemptions applied, see *EU Directive Annex Notes 5 and 7*.
  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>. T<sub>A</sub> = 25°C.
  3. Short duration pulse test used to minimize self-heating effect.

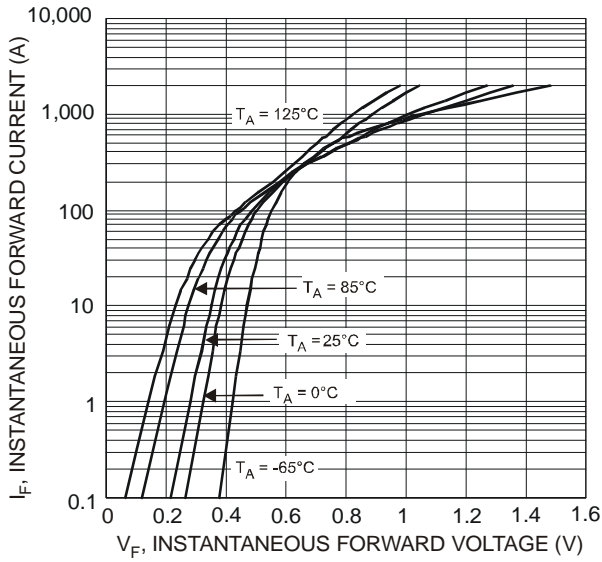


Fig. 1 Typical Forward Characteristics

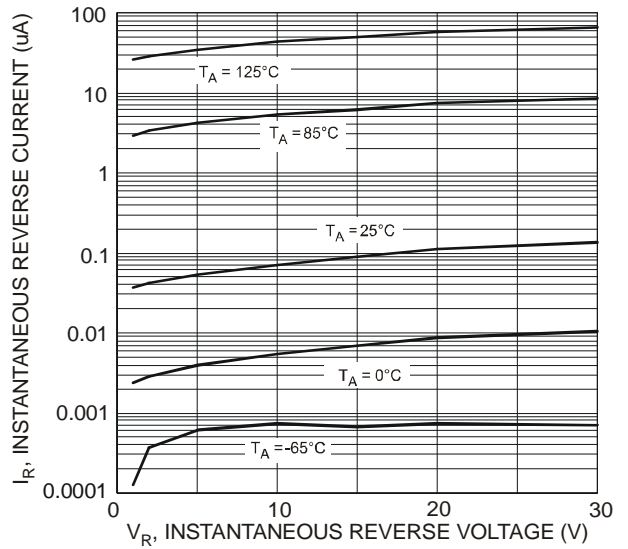


Fig. 2 Typical Reverse Characteristics

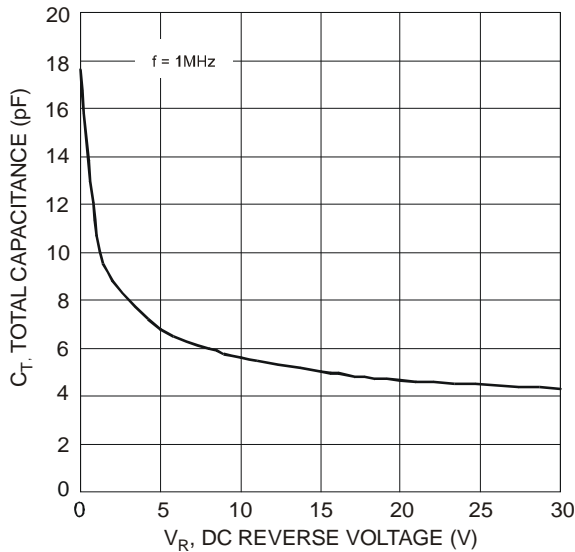


Fig. 3 Total Capacitance vs. Reverse Voltage

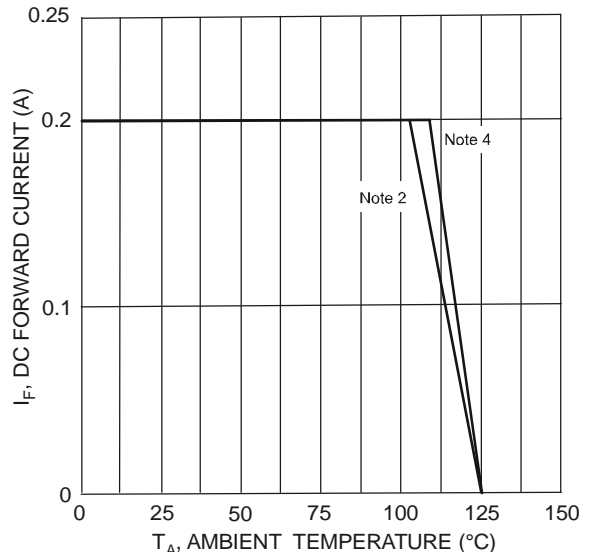


Fig. 4 DC Forward Current Derating

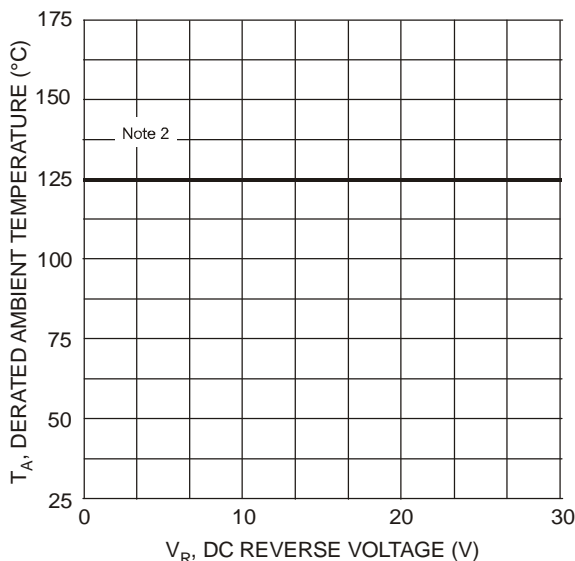


Fig. 5 Operating Temperature Derating

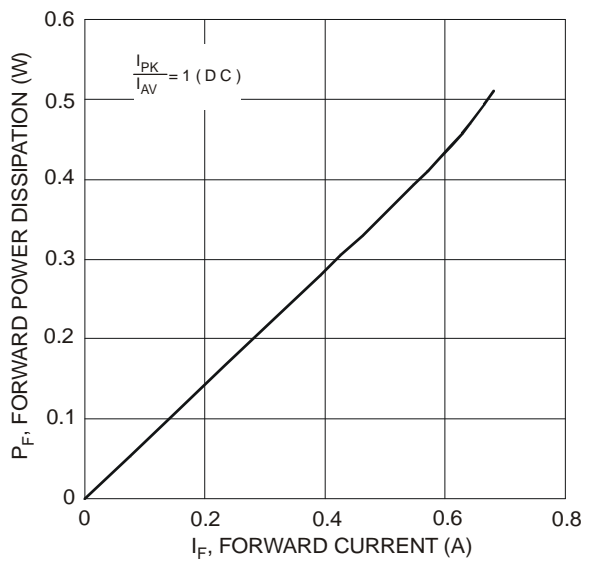


Fig. 6 Forward Power Dissipation

Notes: 4. Polyimide PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.

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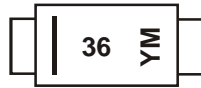
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## Ordering Information (Note 5)

Part Number	Case	Packaging
PDS3S0230-7	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



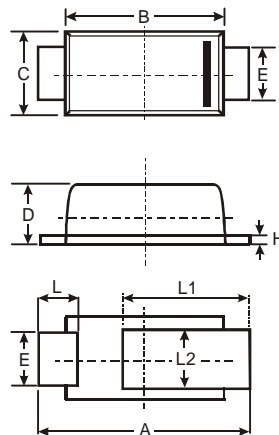
36 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: T = 2006)  
 M = Month (ex: 9 = September)

### Date Code Key

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

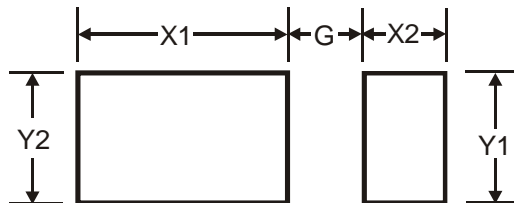
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

## Package Outline Dimensions



PowerDI <sup>®</sup> 123			
Dim	Min	Max	Typ
A	3.50	3.90	3.70
B	2.60	3.00	2.80
C	1.63	1.93	1.78
D	0.93	1.00	0.98
E	0.85	1.25	1.00
H	0.15	0.25	0.20
L	0.55	0.75	0.65
L1	1.80	2.20	2.00
L2	0.95	1.25	1.10
All Dimensions in mm			

## Suggested Pad Layout



Dimensions	Value (in mm)
G	1.0
X1	2.2
X2	0.9
Y1	1.4
Y2	1.4

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