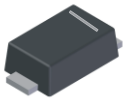
1.0A SURFACE MOUNT STANDARD RECTIFIER
PowerDI323

Features

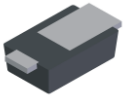
- Ultra-Small Surface Mount Package
- Low Leakage Current
- Soft, Fast Switching Capability
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: PowerDI®323
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Band
- Terminals: Finish – Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.006 grams (Approximate)



Top View



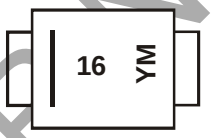
Bottom View

Ordering Information (Note 4)

Part Number	Case	Packaging
PD3R1600-7	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 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



16 = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: E = 2017)
M = Month (ex: 9 = September)

Date Code Key

Year	2011	2012	2013	2014	2015	2016	2017	2018
Code	Y	Z	A	B	C	D	E	F

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_A = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	600	V
Average Rectified Output Current (See Figure 1)	I_O	1.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	20	A

Thermal Characteristics

Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance, Junction to Ambient Air (Note 5)	$R_{\theta JA}$	125	—	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +175		°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	V_F	— — —	0.94 — —	— 1.1 0.98	V	I_F = 0.5A I_F = 1.0A I_F = 1.0A, T_J = +125°C
Leakage Current (Note 6)	I_R	— —	— —	1 50	μA	V_R = 600V V_R = 600V, T_J = +125°C
Typical Reverse Recovery Time	t_{RR}	—	780	—	ns	I_F = 0.5A, I_R = 1.0A, I_{RR} = 0.25A

Notes: 5. Polymide PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com/package-outlines.html. (T_A =+ 25°C)
6. Short duration pulse test used to minimize self-heating effect.

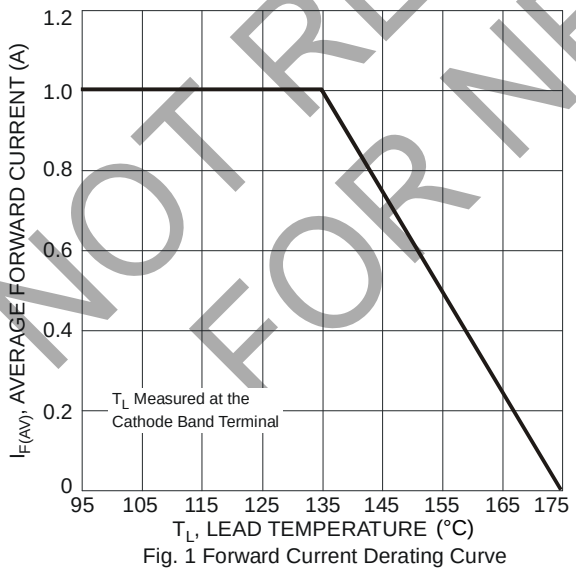


Fig. 1 Forward Current Derating Curve

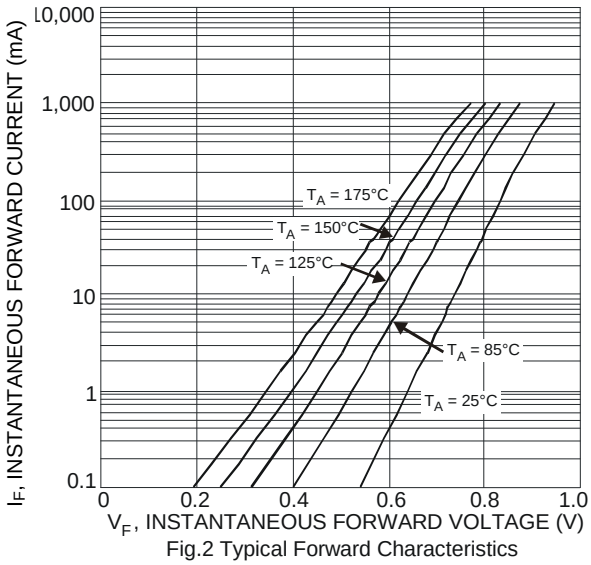


Fig.2 Typical Forward Characteristics

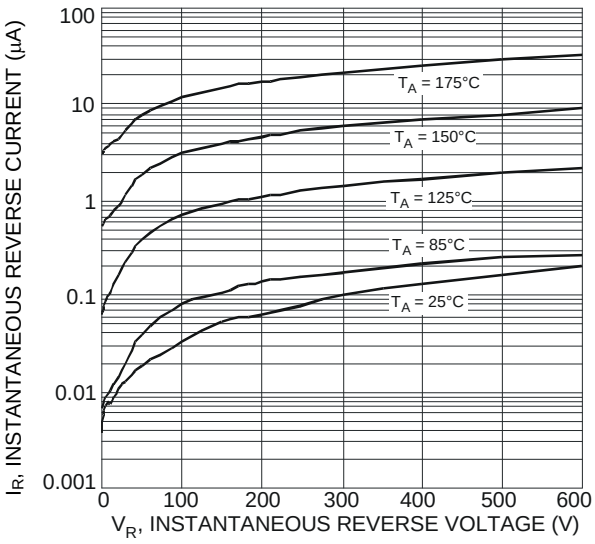
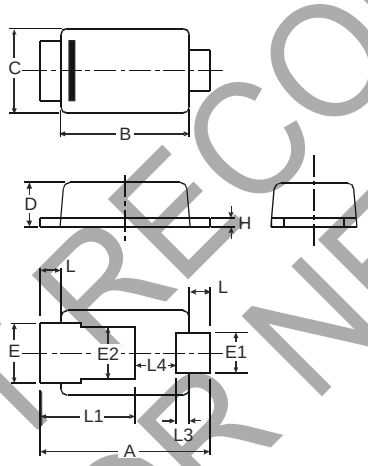


Fig. 3 Typical Reverse Characteristics

Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

PowerDI323

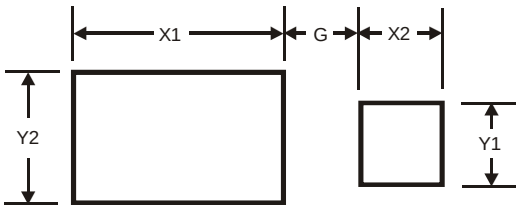


PowerDI323			
Dim	**Min**	**Max**	**Typ**
A	2.40	2.60	2.50
B	1.85	1.95	1.90
C	1.20	1.30	1.25
D	0.60	0.70	0.65
E	0.78	0.98	0.88
E1	0.50	0.70	0.60
E2	0.60	1.00	0.80
H	0.08	0.18	0.13
L	0.20	0.40	0.30
L1	—	—	1.40
L3	—	—	0.20
L4	0.40	0.80	0.60
All Dimensions in mm			

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

PowerDI323



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

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