

**1.0A SURFACE MOUNT GLASS PASSIVATED RECTIFIER**  
**PowerDI®123**
**NEW PRODUCT**
**Features**

- Ideally Suited for Automated Assembly
- **Green Molding Compound (No Br, Sb)**
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **Qualified to AEC-Q101 Standards for High Reliability**

**Mechanical Data**

- Case: PowerDI®123
- 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 ②③
- Weight: 0.01 grams (approximate)

Top View

**Ordering Information** (Note 2)

Part Number	Marking Code	Case	Packaging
DFLR1800-7	F18 or F18	PowerDI®123	3000/Tape & Reel

Notes: 1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see *EU Directive 2002/95/EC Annex Notes*.  
 2. For packaging details, go to our website at <http://www.diodes.com>.

**Marking Information**


Fxx = Product Type Marking Code  
 F18 or F18 = DFLR1800  
 YM = Date Code Marking  
 Y = Year (ex: X = 2010)  
 M = Month (ex: 9 = September)

## Date Code Key

Year	2010	2011	2012	2013	2014	2015	2016
Code	X	Y	Z	A	B	C	D

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

PowerDI is a registered trademark of Diodes Incorporated.

DFLR1800

Document number: DS35075 Rev. 2 - 2

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 December 2010  
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**Maximum Ratings** @T<sub>A</sub> = 25°C unless otherwise specified

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

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	800	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>R</sub>		
Average Rectified Output Current (see figure 4)	I <sub>O</sub>	1.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	25	A

**Thermal Characteristics**

Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance, Junction to Ambient Air (Note 3)	R <sub>θJA</sub>	134	—	°C/W
Thermal Resistance, Junction to Soldering Point (Note 4)	R <sub>θJS</sub>	—	6	°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	Value	Unit
Forward Voltage @ I <sub>F</sub> = 1.0A	V <sub>FM</sub>	1.1	V
Peak Reverse Leakage Current @ T <sub>A</sub> = 25°C at Rated DC Blocking Voltage @ T <sub>A</sub> = 125°C	I <sub>RM</sub>	10	μA
Typical Total Capacitance (f = 1MHz, V <sub>R</sub> = 4.0VDC)	C <sub>T</sub>	10	pF

Notes: 3. Device mounted on 1" x 1", FR-4 PCB; 2 oz. Cu pad layout as shown on Diodes Inc. suggested pad layout document AP02001.pdf. T<sub>A</sub> = 25°C  
4. Theoretical R<sub>θJS</sub> calculated from the top center of the die straight down to the PCB/cathode tab solder junction.

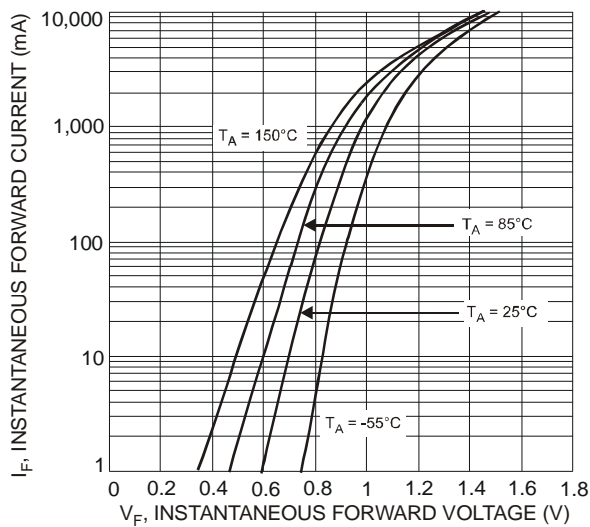


Fig. 1 Typical Forward Characteristics

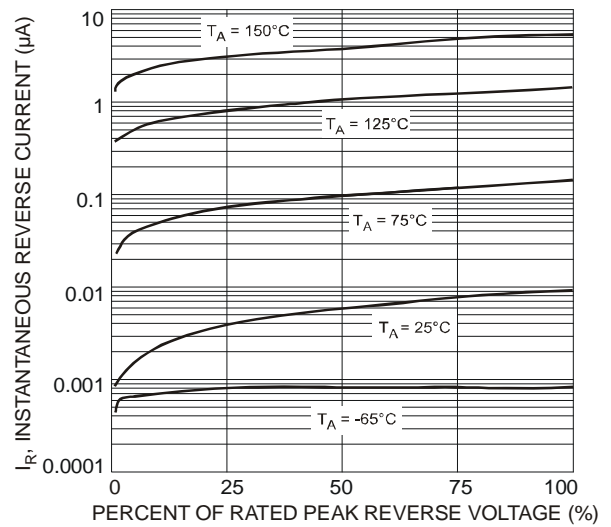


Fig. 2 Typical Reverse Characteristics

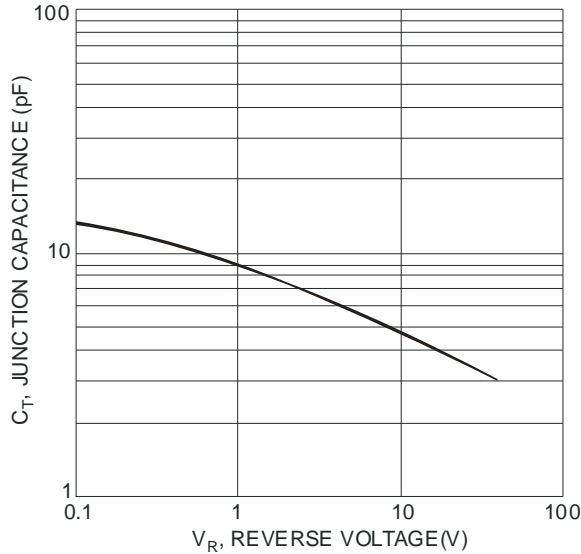


Fig 3. Typical Junction Capacitance

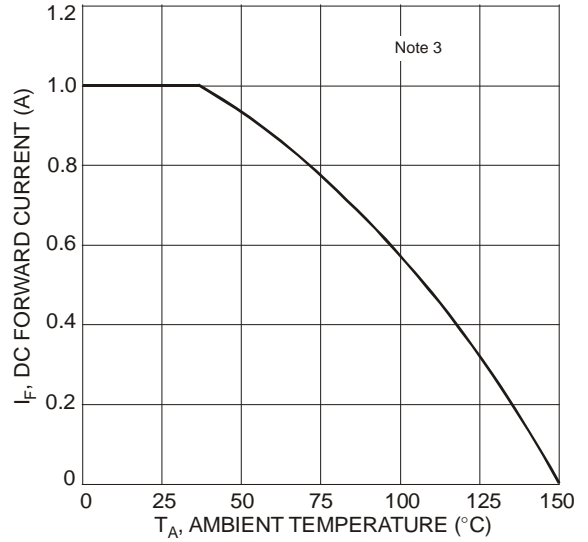


Fig 4 DC Forward Current Derating

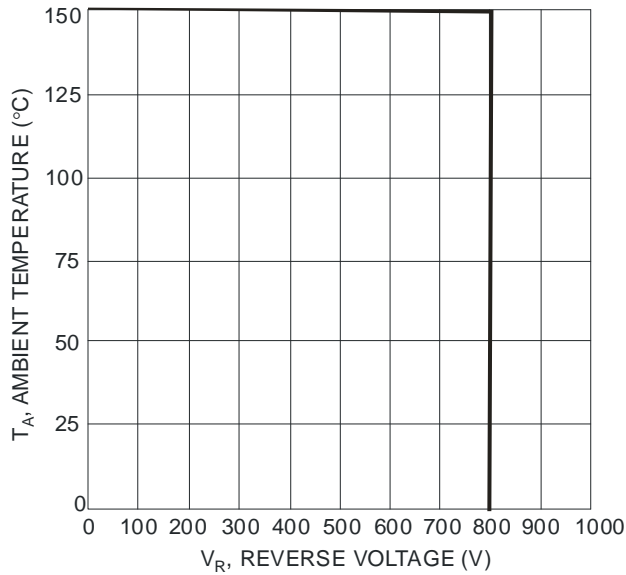


Fig 5 V<sub>R</sub> vs. T<sub>A</sub>

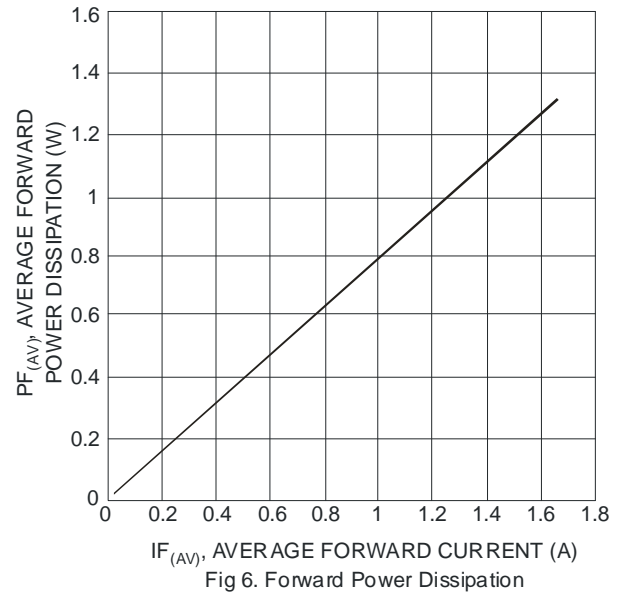
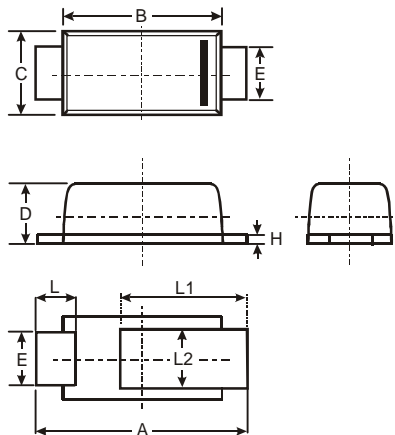


Fig 6. Forward Power Dissipation

**Package Outline Dimensions**



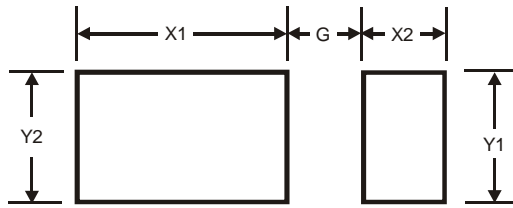
PowerDI <sup>®</sup> 123			
Dim	Min	Max	Typ
A	3.50	3.90	3.70
B	2.60	3.00	2.80
C	1.63	1.93	1.78
D	0.93	1.00	0.98
E	0.85	1.25	1.00
H	0.15	0.25	0.20
L	0.55	0.75	0.65
L1	1.80	2.20	2.00
L2	0.95	1.25	1.10
All Dimensions in mm			

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DFLR1800

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**Suggested Pad Layout**



Dimensions	Value (in mm)
<b>G</b>	1.0
<b>X1</b>	2.2
<b>X2</b>	0.9
<b>Y1</b>	1.4
<b>Y2</b>	1.4

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