

# 1.0A SURFACE MOUNT GLASS PASSIVATED RECTIFIER PowerDI® 123

## **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<sup>®</sup>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 63
- Weight: 0.01 grams (approximate)



Top View

## Ordering Information (Note 2)

Part Number	Marking Code	Case	Packaging
DFLR1800-7	F18 or F1 <u>8</u>	PowerDI <sup>®</sup> 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	20	13	2014		2015	- :	2016
Code	X		Υ		Z	A	A	В		С		D
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D



## Maximum Ratings @TA = 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 Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	800	V
Average Rectified Output Current (see figure 4)	lo	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**

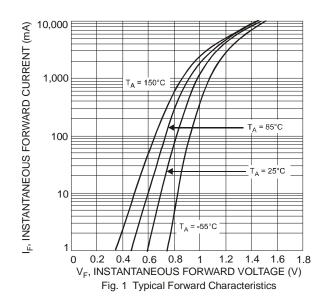
Characteristic	Symbol	Тур	Max	Unit
Thermal Resistance, Junction to Ambient Air (Note 3)	$R_{\theta JA}$	134		°C/W
Thermal Resistance, Junction to Soldering Point (Note 4)	$R_{\theta JS}$	_	6	°C/W
Operating and Storage Temperature Range	T <sub>J,</sub> T <sub>STG</sub>		-65 to +150	°C

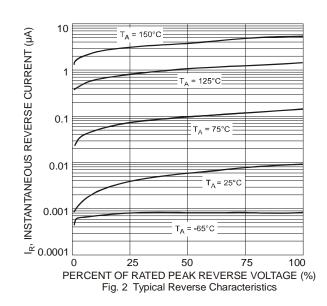
## Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

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	1	10	^
at Rated DC Blocking Voltage @ T <sub>A</sub> = 125°C	IRM	150	μΑ
Typical Total Capacitance (f = 1MHz, V <sub>R</sub> = 4.0VDC)	C <sub>T</sub>	10	pF

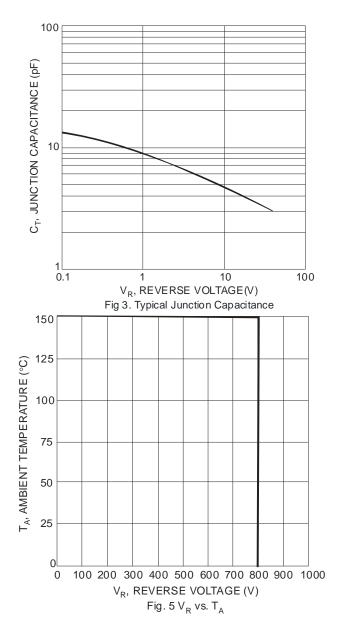
Notes:

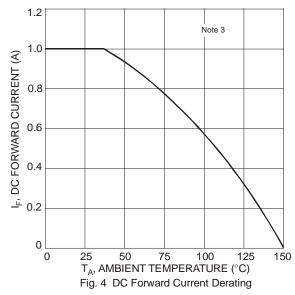
- 3. Device mounted on 1" x 1", FR-4 PCB; 2 oz. Cu pad layout as shown on Diodes Inc. suggested pad layout document AP02001.pdf. TA = 25°C
- 4. Theoretical  $R_{\text{0JS}}$  calculated from the top center of the die straight down to the PCB/cathode tab solder junction.

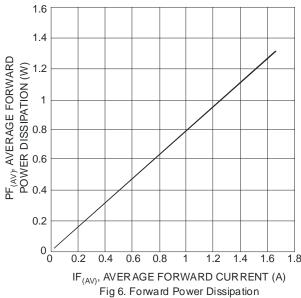




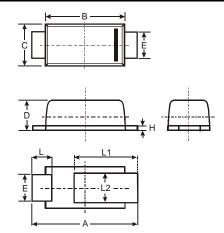








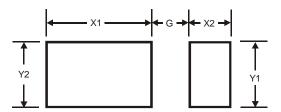
## **Package Outline Dimensions**



PowerDI®123					
Dim	Min	Max	Тур		
Α	3.50	3.90	3.70		
В	2.60	3.00	2.80		
С	1.63	1.93	1.78		
D	0.93	1.00	0.98		
Е	0.85	1.25	1.00		
Н	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 D	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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