



**THE DATASHEET OF  
DFLR1400-7**



**Product Summary** (@ T<sub>A</sub> = +25°C)

V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	V <sub>F(MAX)</sub> (V)	I <sub>R(MAX)</sub> (μA)
200, 400, 600	1	1.1	3

**Features and Benefits**

- Glass Passivated Die Construction
- Ideally Suited for Automated Assembly
- Low Forward Voltage Drop
- Low Profile Design, Package Height Less than 1.1mm
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- Patented Interlocking Clip Design for High Surge Capacity, US Patent #7,095,113

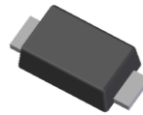
**Description and Applications**

This series is packaged in the compact, low profile PowerDI®123 package. Providing low forward voltage drop, this device is ideal for use in general rectification applications such as:

- Power Supply Applications
- DC-DC Converters
- AC-DC Adaptors/Chargers
- Freewheeling Diodes
- Inverters

**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
- Terminals: Matte Tin Finish Annealed over Copper Leadframe (Lead-Free Plating). Solderable per MIL-STD-202, Method 208 (e3)
- Terminal Connections: Cathode Band
- Weight: 0.01 grams (Approximate)

**PowerDI123**


Top View

**Ordering Information** (Note 4)

Part Number	Qualification	Marking Code	Case	Packaging
DFLR1200-7	Commercial	F12	PowerDI123	3,000/Tape & Reel
DFLR1400-7	Commercial	F14	PowerDI123	3,000/Tape & Reel
DFLR1600-7	Commercial	F18	PowerDI123	3,000/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](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**


Fxx = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: C = 2015)  
 M = Month (ex: 9 = September)

## Date Code Key

Year	2011	...	2015	2016	2017	2018	2019	2020	2021
Code	Y	...	C	D	E	F	G	H	I

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<sub>A</sub> = +25°C, unless otherwise specified.)

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

Characteristic	Symbol	DFLR1200	DFLR1400	DFLR1600	Units
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	200	400	600	V
Working Peak Reverse Voltage	V <sub>RWM</sub>				
DC Blocking Voltage	V <sub>R</sub>				
RMS Reverse Voltage	V <sub>R(RMS)</sub>	140	280	420	V
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

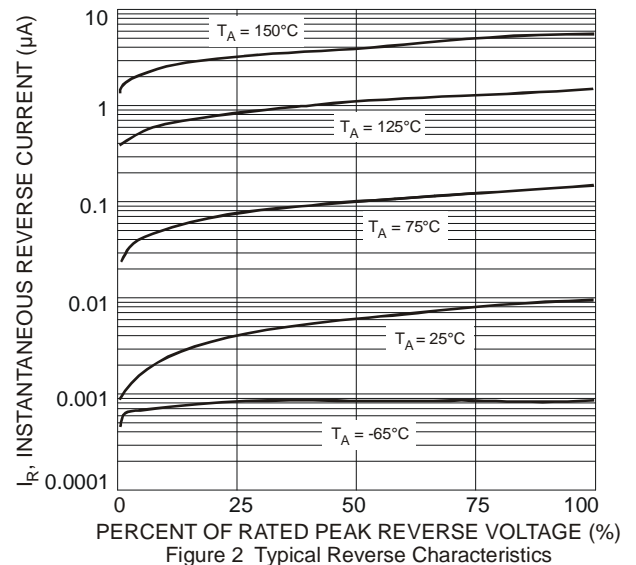
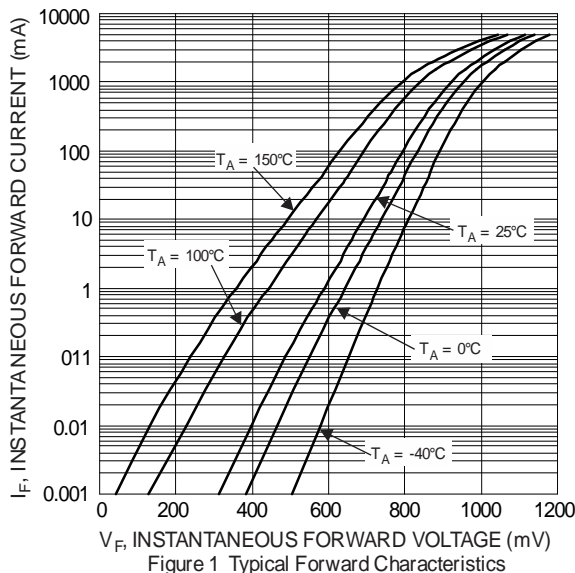
**Thermal Characteristics**

Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance, Junction to Ambient Air (Note 5)	R <sub>θJA</sub>	134	—	°C/W
Thermal Resistance, Junction to Soldering Point (Note 6)	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 Characteristic** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	DFLR1200	DFLR1400	DFLR1600	Unit
Minimum Reverse Breakdown Voltage (Note 7) @I <sub>R</sub> =10μA	V <sub>(BR)R</sub>	200	400	600	V
Maximum Forward Voltage Drop @ I <sub>F</sub> = 1.0A	V <sub>F</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>R</sub>	3.0 100			μA
Typical Total Capacitance (f = 1MHz, V <sub>R</sub> = 4.0VDC)	C <sub>T</sub>	10			pF

- Notes: 5. Theoretical R<sub>θJS</sub> calculated from the top center of the die straight down to the PCB/cathode tab solder junction.  
6. Device mounted on 1in x 1in, FR-4 PCB; 2 oz Cu pad layout as shown on Diodes Incorporated's suggested pad layout document AP02001.pdf.  
7. Short duration pulse test used to minimize self-heating effect.



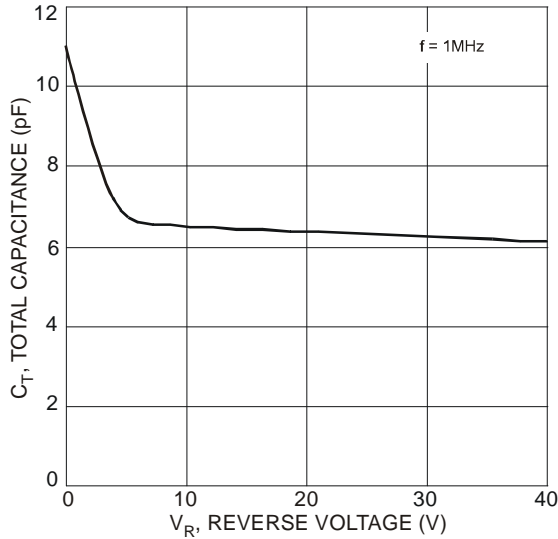


Figure 3 Typical Total Capacitance

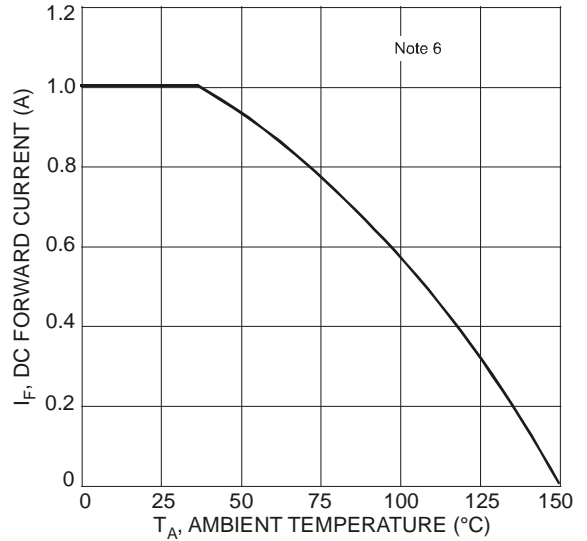
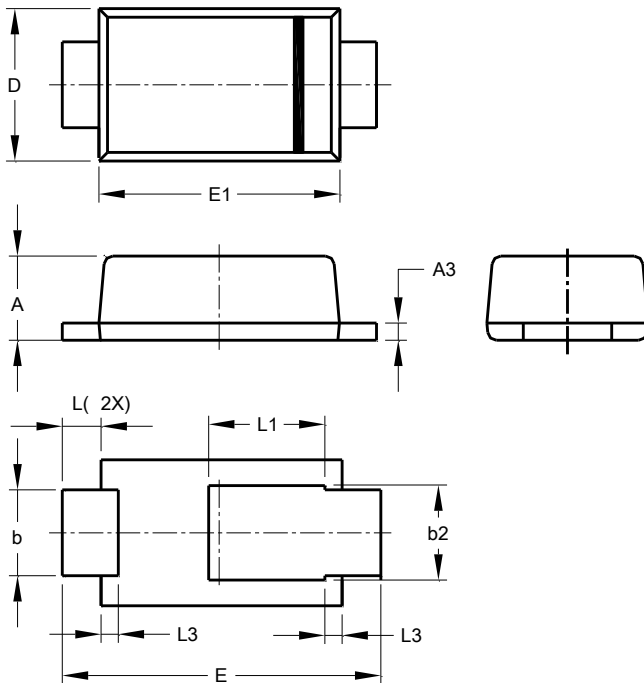


Figure 4 DC Forward Current Derating

## Package Outline Dimensions

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



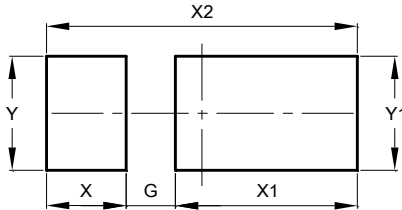
POWERDI <sup>®</sup> 123			
Dim	Min	Max	Typ
A	0.93	1.00	0.98
A3	0.15	0.25	0.20
b	0.85	1.25	1.00
b2	1.025	1.125	1.10
D	1.63	1.93	1.78
E	3.50	3.90	3.70
E1	2.60	3.00	2.80
L	0.40	0.50	0.45
L1	1.25	1.40	1.35
L3	0.125	0.275	0.20

All Dimensions in mm

## Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.

### POWERDI<sup>®</sup>123



Dimensions	Value (in mm)
<b>G</b>	0.65
<b>X</b>	1.05
<b>X1</b>	2.40
<b>X2</b>	4.10
<b>Y</b>	1.50
<b>Y1</b>	1.50

### IMPORTANT NOTICE

DIODES INCORPORATED MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. Diodes Incorporated does not assume any liability arising out of the application or use of this document or any product described herein; neither does Diodes Incorporated convey any license under its patent or trademark rights, nor the rights of others. Any Customer or user of this document or products described herein in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on Diodes Incorporated website, harmless against all damages.

Diodes Incorporated does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel. Should Customers purchase or use Diodes Incorporated products for any unintended or unauthorized application, Customers shall indemnify and hold Diodes Incorporated and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.

Products described herein may be covered by one or more United States, international or foreign patents pending. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks.

This document is written in English but may be translated into multiple languages for reference. Only the English version of this document is the final and determinative format released by Diodes Incorporated.

### LIFE SUPPORT

Diodes Incorporated products are specifically not authorized for use as critical components in life support devices or systems without the express written approval of the Chief Executive Officer of Diodes Incorporated. As used herein:

A. Life support devices or systems are devices or systems which:

1. are intended to implant into the body, or
2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.



Customers represent that they have all necessary expertise in the safety and regulatory ramifications of their life support devices or systems, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of Diodes Incorporated products in such safety-critical, life support devices or systems, notwithstanding any devices- or systems-related information or support that may be provided by Diodes Incorporated. Further, Customers must fully indemnify Diodes Incorporated and its representatives against any damages arising out of the use of Diodes Incorporated products in such safety-critical, life support devices or systems.

Copyright © 2015, Diodes Incorporated

[www.diodes.com](http://www.diodes.com)

## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

-  [View DFLR1400-7 on WIN SOURCE](#)
-  [Diodes Incorporated Information](#)

## Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management