



DFLF1800

1.0A SURFACE MOUNT FAST RECOVERY RECTIFIER PowerDI® 123

Product Summary (@TA = +25°C)

V _{RRM} (V)	I _O (A)	V _{FMAX} (V)	I _{RMAX} (μ A)		
800	1	1.35	10		

Description and Applications

Packaged in the compact thermally efficient POWERDI123 package, the DFLF1800 provides fast recovery time for high efficiency. It is ideally suited to use in

- AC/DC Adaptors/Chargers
- DC/DC Converters
- Power Supply

Features and Benefits

- Ideally Suited for Automated Assembly
- Fast Recovery Time For High Efficiency
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability
- Patented Interlocking Clip Design for High Surge Capacity, US Patent #7,095,113

Mechanical Data

- Case: PowerDI123
- 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 ⁽³⁾
- Weight: 0.01 grams (approximate)



Top View

Ordering Information (Note 4)

Part Number	Compliance	Case	Packaging
DFLF1800-7	Commercial	PowerDI [®] 123	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



S18 = Product Type Marking Code YM = Date Code Marking Y = Year (ex: B = 2014) M = Month (ex: 9 = September)

Date Code Key

Year	2010		2011	2012		2013	2014		2015	2016	6	2017
Code	Х		Υ	Z		Α	В		С	D		E
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 (@T_A = +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 _{RRM} V _{RWM} V _R	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 _{FSM}	25	А

Thermal Characteristics

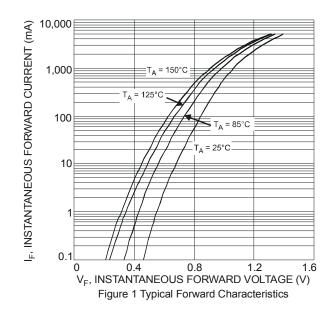
Characteristic	Symbol	Тур	Max	Unit
Thermal Resistance, Junction to Ambient Air (Note 5)	$R_{\Theta JA}$	134	_	°C/W
Thermal Resistance, Junction to Soldering Point (Note 6)	R _{⊝JS}	_	6	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}		-65 to +150	°C

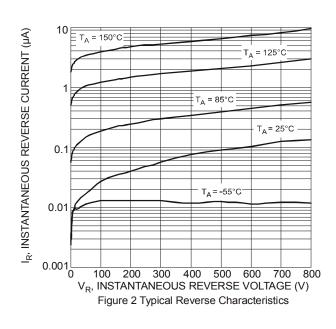
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	800	_	_	V	$I_R = 10\mu A$
Forward Voltage Drop	V _F	_	_	1.35	V	I _F = 1.0A, T _J = +25°C
Reverse Leakage Current	I _R	_	_	10	μА	V _R = 800V, T _J = +25°C
				20		$V_R = 800V, T_J = +125^{\circ}C$
Total Capacitance	C _T		7	_	pF	$V_R = 4.0V_{DC}$, $f = 1MHz$
Reverse Recovery Time	t _{rr}	_	_	500	ns	$I_F = 0.5A$, $I_R = 1A$, $I_{RR} = 0.25A$

Notes:

- 5. 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_A = 25°C
- 6. Theoretical R_{0JS} calculated from the top center of the die straight down to the PCB/cathode tab solder junction.
- 7. Short duration test pulse used to minimize self-heating effect.







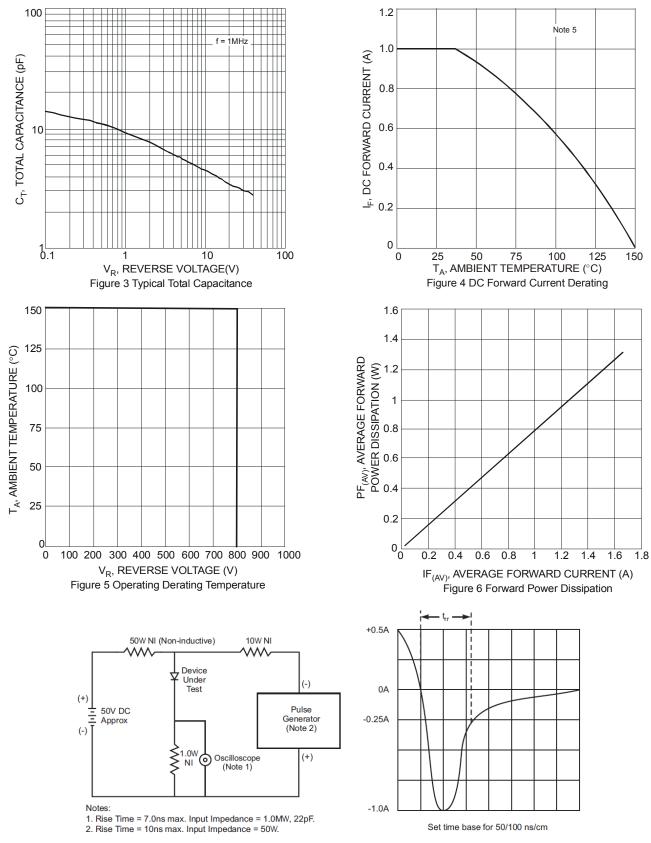
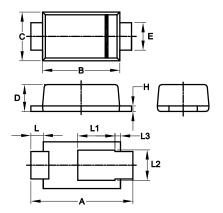


Figure 7 Reverse Recovery Time Characteristics and Test Circuit



Package Outline Dimensions

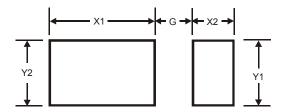
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



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	0.40	0.50	0.45				
L1	1.25	1.40	1.35				
L2	1.025	1.125	1.10				
L3	0.125	0.275	0.20				
All I	All Dimensions in mm						

Suggested Pad Layout

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



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



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