DFLU1400

1.0A SURFACE MOUNT SUPER-FAST RECTIFIER

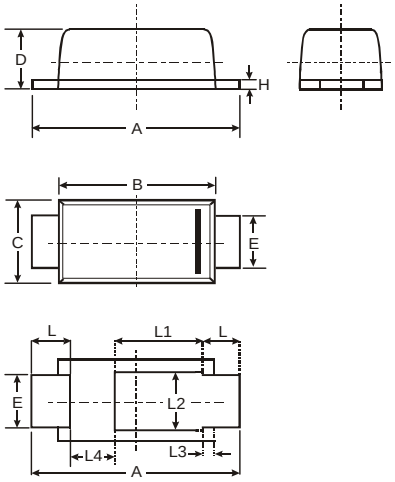
PowerDI ®123

Features

- Glass Passivated Die Construction
- Super-Fast Recovery Time for High Efficiency
- Low Forward Voltage Drop and High Current Capability
- Patented Interlocking Clip Design for High Surge Current Capacity
- **Lead Free Finish, RoHS Compliant (Note 2)**
- **"Green" Molding Compound (No Br, Sb)**
- **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-020C
- Terminal Connections: Cathode Band
- Terminals: Finish – Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 e3
- Marking & Type Code Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.011 grams (approximate)



PowerDI®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	0.45	0.85	0.65
L1	—	—	1.35
L2	—	—	1.10
L3	—	—	0.20
L4	0.90	1.30	1.05
All Dimensions in mm			

Maximum Ratings and Electrical Characteristics

@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 (Note 5)		V_{RRM} V_{RWM} V_R	400	V
RMS Reverse Voltage		$V_{R(RMS)}$	280	V
Average Rectified Output Current		I_O	1.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load		I_{FSM}	30	A
Maximum Forward Voltage Drop	@I_F = 1.0A	V_{FM}	1.25	V
Peak Reverse Current at Rated DC Blocking Voltage (Note 5)	@T_A = 25°C @T_A = 100°C	I_{RM}	5.0 200	μA
Maximum Reverse Recovery Time (Note 4)		t_{rr}	25	ns
Typical Total Capacitance (f = 1MHz, V_R = 4VDC)		C_T	14	pF

Thermal Characteristics

Characteristic		Symbol	Typ	Max	Unit
Power Dissipation (Note 1)	@T_A = 25°C	P_D	—	1.0	W
Thermal Resistance Junction to Ambient (Note 1)	@T_A = 25°C	$R_{\theta JA}$	117	—	°C/W
Thermal Resistance Junction to Soldering Point (Note 3)		$R_{\theta JS}$	—	6	°C/W
Operating and Storage Temperature Range		T_j, T_{STG}	-65 to +150		°C

Notes:
1. Device mounted on 1" x 1", Polymide PCB; 2 oz. Cu pad layout as shown on Diodes Inc. suggested pad layout document AP02001.pdf.
2. RoHS revision 13.2.2003. Glass and high temperature solder exemptions applied, see *EU Directive Annex Notes 5 and 7.*
3. Theoretical $R_{\theta JS}$ calculated from the top center of the die straight down to the PCB cathode tab solder junction.
4. Measured with I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A. See figure 5.
5. Short duration pulse test used to minimize self-heating effect.
6. Device mounted on FR-4 PCB, 2oz. Cu pad layout as shown on Diodes Inc. suggested pad layout document AP02001.pdf. (see page 2)

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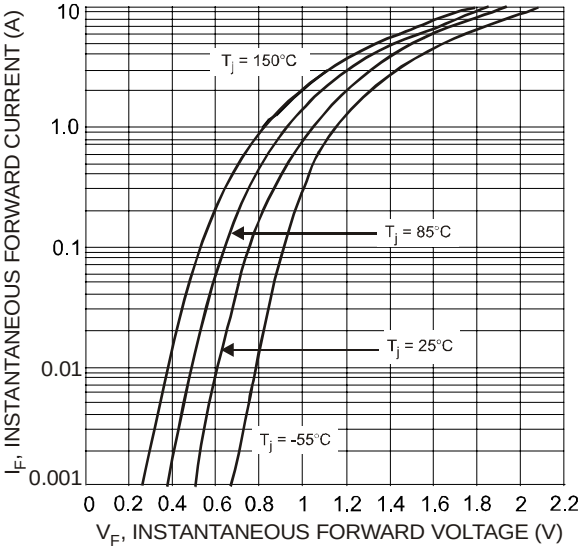

Fig. 1 Typical Forward Characteristics

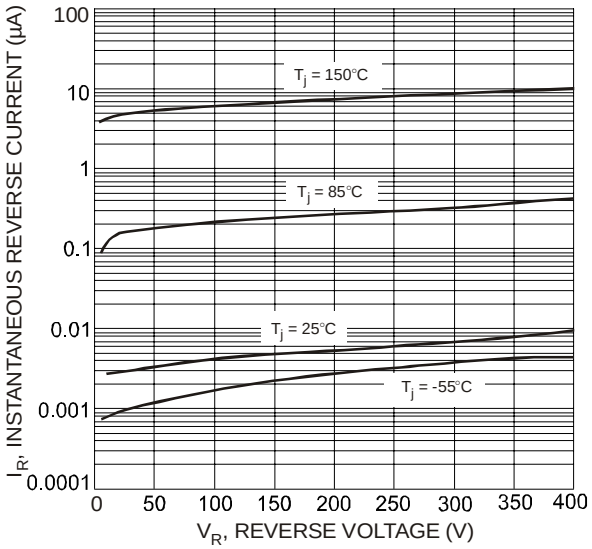

Fig. 2 Typical Reverse Characteristics

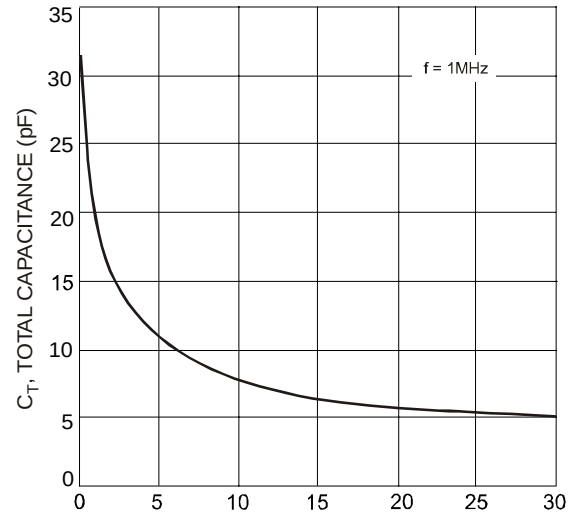

Fig. 3 Typical Total Capacitance

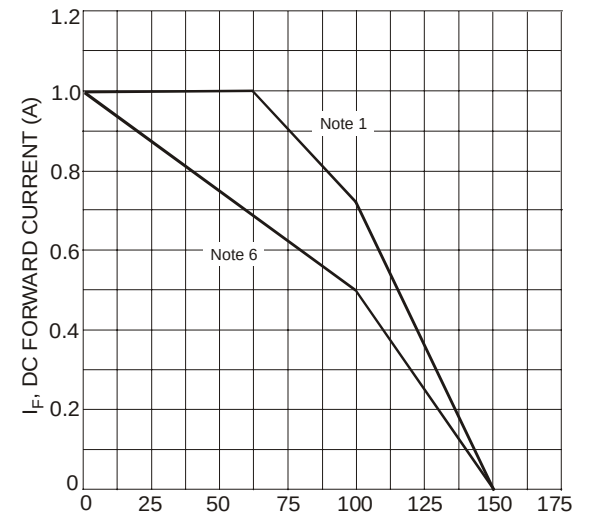

Fig. 4 DC Forward Current Derating

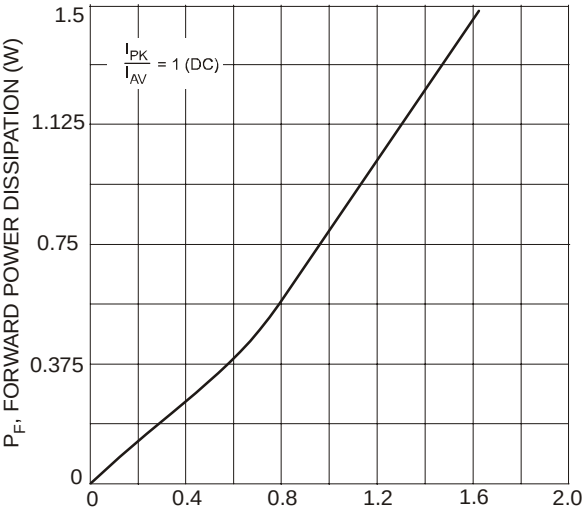

Fig. 5 Forward Power Dissipation

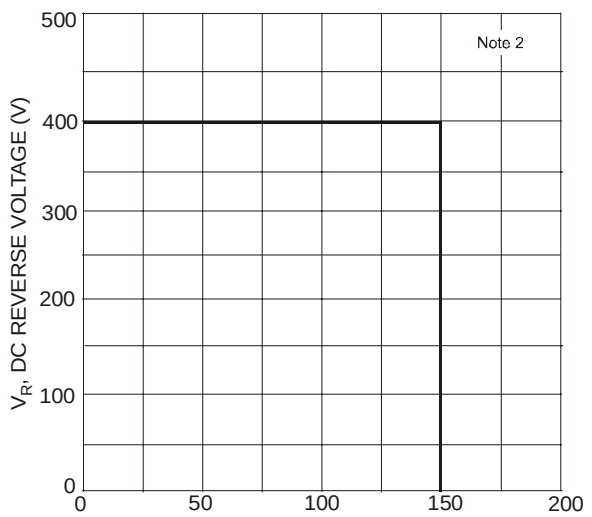

Fig. 6 Operating Temperature Derating

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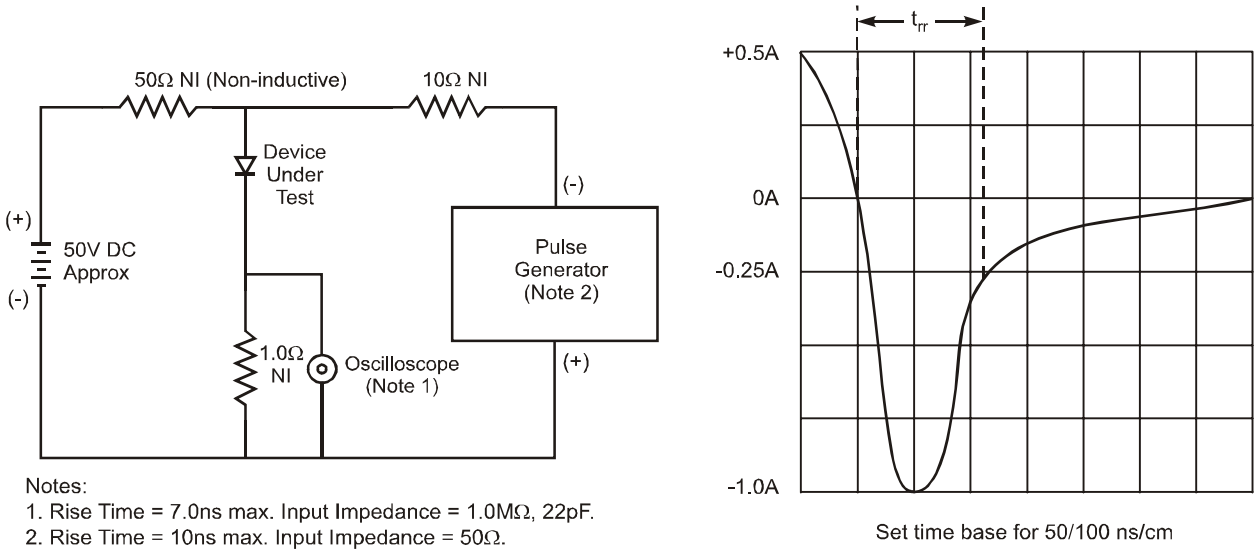


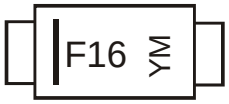
Fig. 7 Reverse Recovery Time Characteristic and Test Circuit

Ordering Information (Note 7)

Device	Packaging	Shipping
DFLU1400-7	PowerDI®123	3000/Tape & Reel

Notes: 7. For packaging details, visit our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



F16 = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: T = 2006)
M = Month (ex: 9 = September)

Date Code Key

Year	2005	2006	2007	2008	2009	2010	2011	2012
Code	S	T	U	V	W	X	Y	Z

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

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