

Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- Patented Interlocking Clip Design for High Surge Current Capacity
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **An Automotive-Compliant Part is Available Under Separate Datasheet (DFLS1200Q)**

Mechanical Data

- Package: PowerDI[®]123
- Package 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 (E3)
- Weight: 0.01 grams (Approximate)

PowerDI123



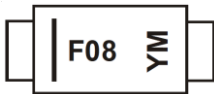
Top View

Ordering Information (Note 4)

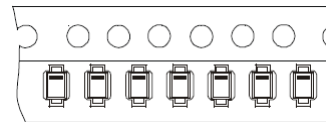
Part Number	Package	Packing	
		Qty.	Carrier
DFLS1200-7	PowerDI123	3000	Tape & Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
 2. See <https://www.diodes.com/quality/lead-free/> 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



F08 = Product Type Marking Code
 YM = Date Code Marking
 Y = Year (ex: J = 2022)
 M = Month (ex: 9 = September)



Date Code Key

Year	2005	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Code	S	J	K	L	M	N	O	P	R	S	T

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_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	V _{RRM} V _{RWM} V _R	200	V
RMS Reverse Voltage	V _{R(RMS)}	141	V
Average Forward Current	I _{F(AV)}	1.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	40	A

Thermal Characteristics

Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance Junction to Ambient (Note 5)	R _{θJA}	132	—	°C/W
Thermal Resistance Junction to Soldering Point (Note 6)	R _{θJS}	—	7	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +175		°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	V _{(BR)R}	200	—	—	V	I _R = 8μA
Forward Voltage	V _F	—	—	0.85	V	I _F = 1.0A
Leakage Current (Note 7)	I _R	—	—	2	μA	V _R = 200V, T _A = +25°C
Total Capacitance	C _T	—	23	—	pF	V _R = 5V _{DC} , f = 1MHz

- Notes:
5. Part mounted on FR-4 board with 2 oz., minimum recommended copper pad layout, which can be found on our website at <http://www.diodes.com/package-outlines.html>. T_A = +25°C.
 6. Theoretical R_{θJS} calculated from the top center of the die straight down to the PCB/cathode tab solder junction.
 7. Short duration pulse test used to minimize self-heating effect.

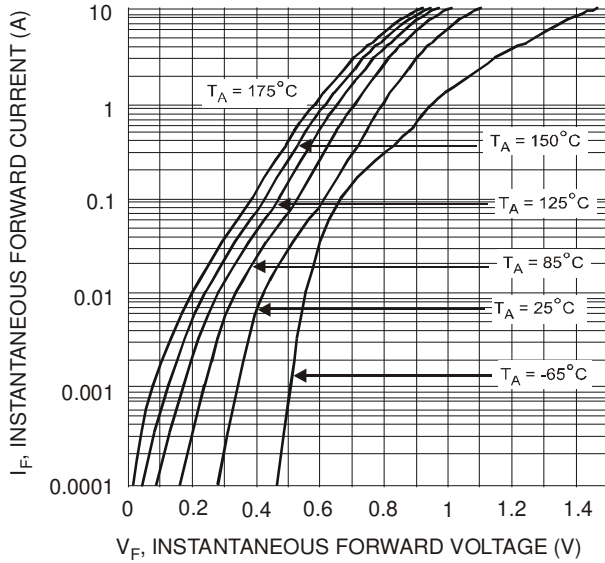


Fig. 1, Typical Forward Characteristics

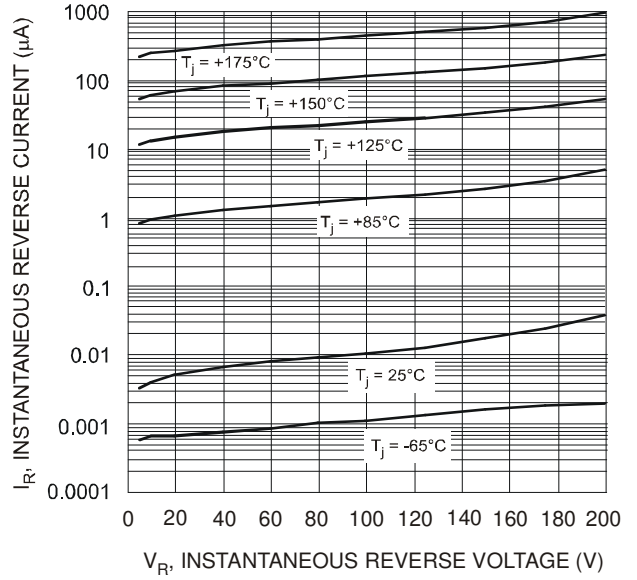


Fig. 2, Typical Reverse Characteristics

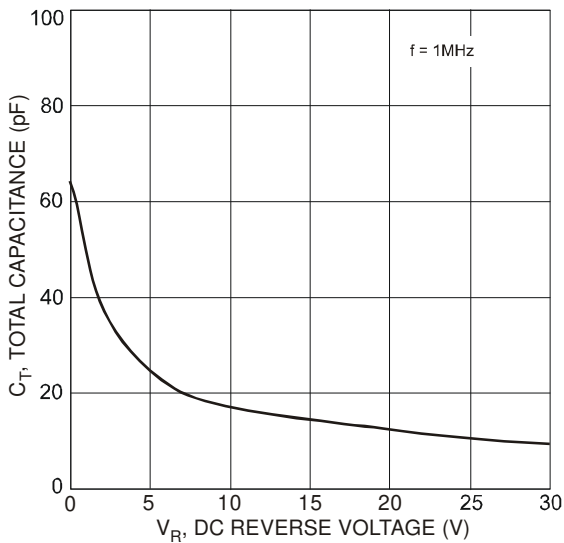


Fig. 3, Typical Total Capacitance vs. Reverse Voltage

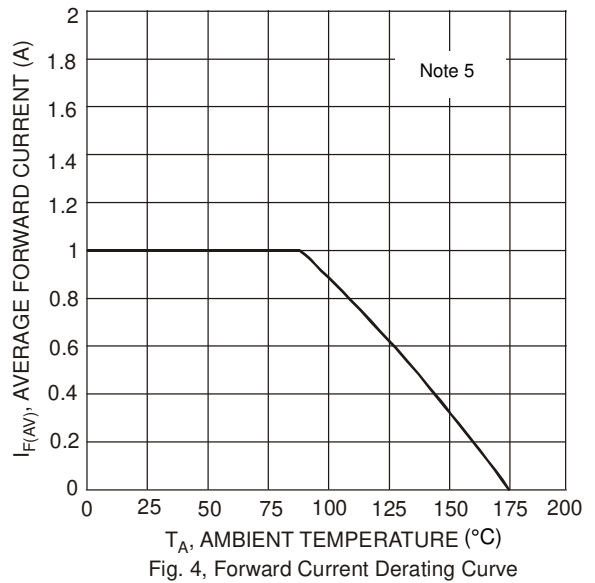
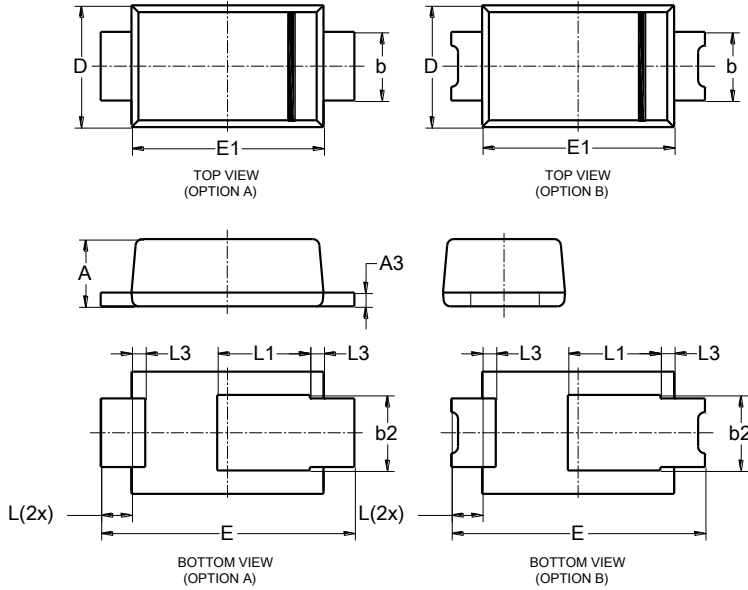


Fig. 4, Forward Current Derating Curve

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

PowerDI123

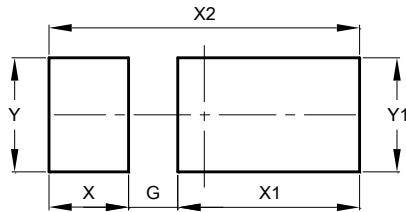


PowerDI123			
Dim	Min	Max	Typ
A	0.93	1.00	0.98
A3	0.15	0.25	0.20
b	0.85	1.25	1.00
b2	1.025	1.125	1.10
D	1.63	1.93	1.78
E	3.50	3.90	3.70
E1	2.60	3.00	2.80
L	0.40	0.50	0.45
L1	1.25	1.40	1.35
L3	0.125	0.275	0.20
All Dimensions in mm			

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

PowerDI123



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

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