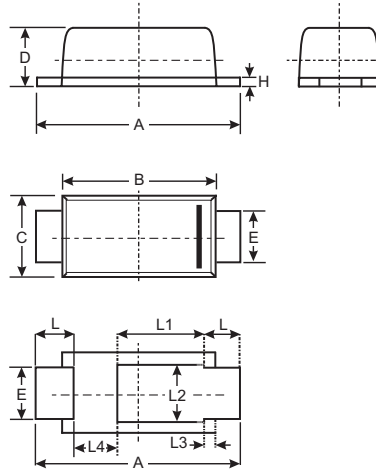


### Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- **Lead Free Finish, RoHS Compliant (Note 4)**
- **"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 Last Page
- Ordering Information: See Last Page
- Weight: 0.01 grams (approx.)



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 @ 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	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	150	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>R</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	106	V
Average Forward Current	I <sub>F(AV)</sub>	1.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	50	A
Operating Temperature Range	T <sub>j</sub>	-55 to +175	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +175	°C

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

Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance Junction to Ambient (Note 1)	R <sub>θJA</sub>	125	—	°C/W
Thermal Resistance Junction to Soldering Point (Note 2)	R <sub>θJS</sub>	—	7	°C/W

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 3)	V <sub>(BR)R</sub>	150	—	—	V	I <sub>R</sub> = 2μA
Forward Voltage	V <sub>F</sub>	—	—	0.82	V	I <sub>F</sub> = 1.0A
Leakage Current (Note 3)	I <sub>R</sub>	—	—	2	μA	V <sub>R</sub> = 150V, T <sub>A</sub> = 25°C
Total Capacitance	C <sub>T</sub>	—	28	—	pF	V <sub>R</sub> = 5VDC, f = 1MHz

- Notes:
1. 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/datasheets/ap02001.pdf>.
  2. Theoretical R<sub>θJS</sub> calculated from the top center of the die straight down to the PCB/cathode tab solder junction.
  3. Short duration pulse test to minimize self-heating effect.
  4. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7*.

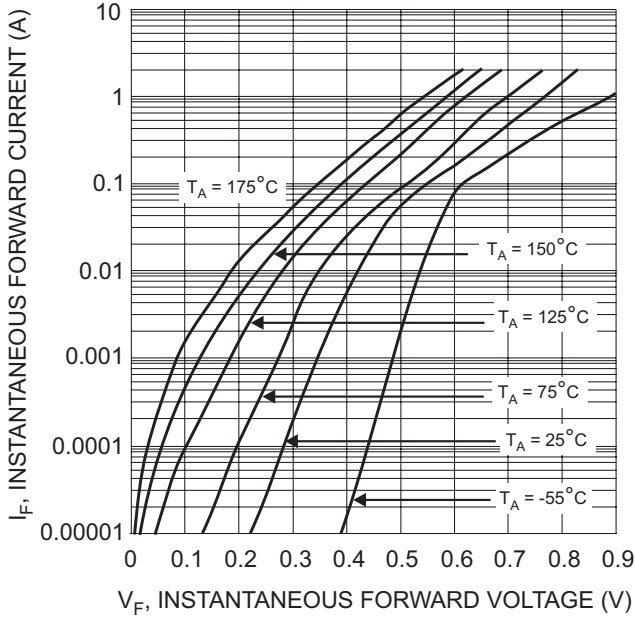


Fig. 1, Typical Forward Characteristics

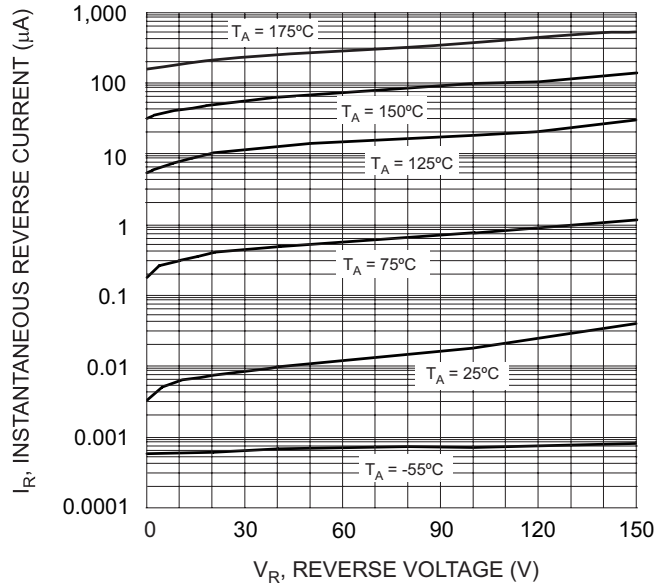


Fig. 2 Typical Pulsed Reverse Characteristics

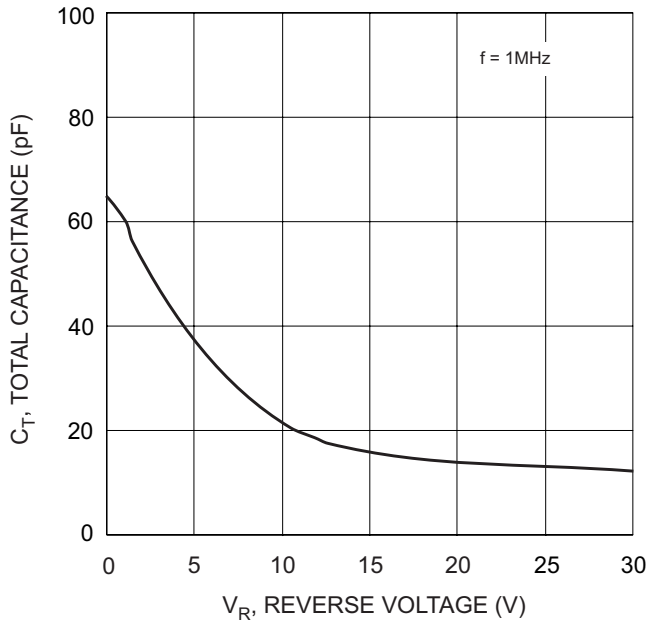


Fig. 3 Typical Total Capacitance vs. Reverse Voltage

**Ordering Information** (Note 5)

Device	Packaging	Shipping
DFLS1150-7	PowerDI™123	3000/Tape & Reel

Notes: 5. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



F07 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: R = 2004)  
 M = Month (ex: 9 = September)

Date Code Key

Year	2004	2005	2006	2007	2008	2009
Code	R	S	T	U	V	W

Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D