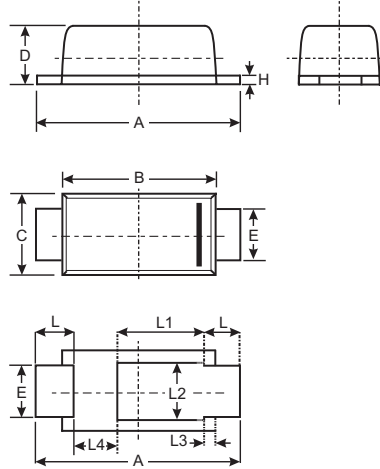


### Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- Very Low  $V_F$  and High Current Capability
- Low Leakage Current
- High Surge Capability
- **Lead Free Finish, RoHS Compliant (Note 4)**
- **"Green" Molding Compound (No Br, Sb)**
- **Qualified to AEC-Q101 Standards for High Reliability**



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**

### 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.)

### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	30	V
RMS Reverse Voltage	$V_{R(RMS)}$	21	V
Average Forward Current	$I_{F(AV)}$	2.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	75	A
Operating Temperature Range	$T_j$	-65 to +150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-65 to +150	$^\circ\text{C}$

### Thermal Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance Junction to Soldering (Note 2)	$R_{\theta JS}$	—	6	$^\circ\text{C/W}$

### Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 3)	$V_{(BR)R}$	30	—	—	V	$I_R = 200\mu\text{A}$
Forward Voltage (Note 3)	$V_F$	—	—	0.45 0.375	V	$I_F = 2\text{A}, T_j = 25^\circ\text{C}$ $I_F = 2\text{A}, T_j = 125^\circ\text{C}$
Leakage Current (Note 3)	$I_R$	—	—	0.200 15	mA	$V_R = 30\text{V}, T_j = 25^\circ\text{C}$ $V_R = 30\text{V}, T_j = 100^\circ\text{C}$
Total Capacitance	$C_T$	—	85	—	pF	$V_R = 10\text{V}, f = 1.0\text{MHz}$

- Notes:
1. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  2. Theoretical  $R_{\theta JS}$  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*.

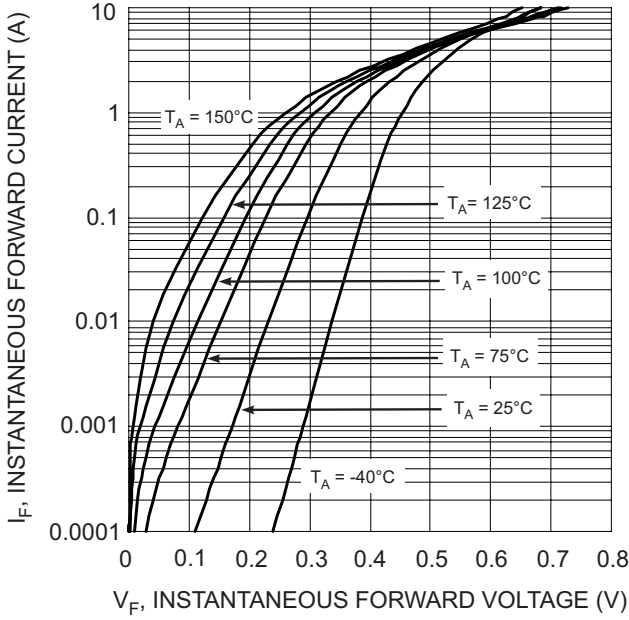


Fig. 1, Typical Forward Characteristics

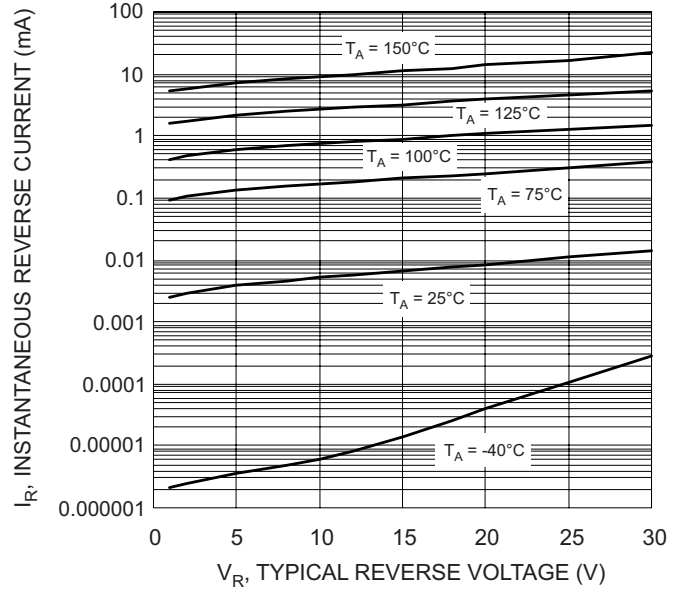


Fig. 2, Typical Reverse Characteristics

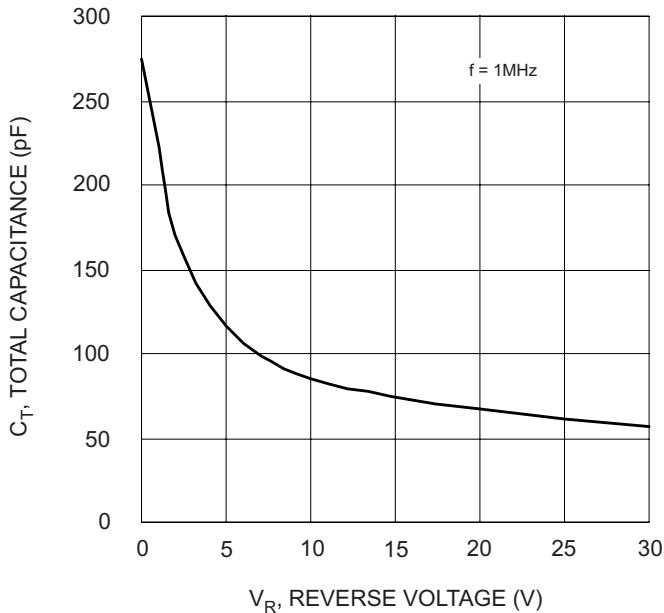


Fig. 3, Typical Total Capacitance

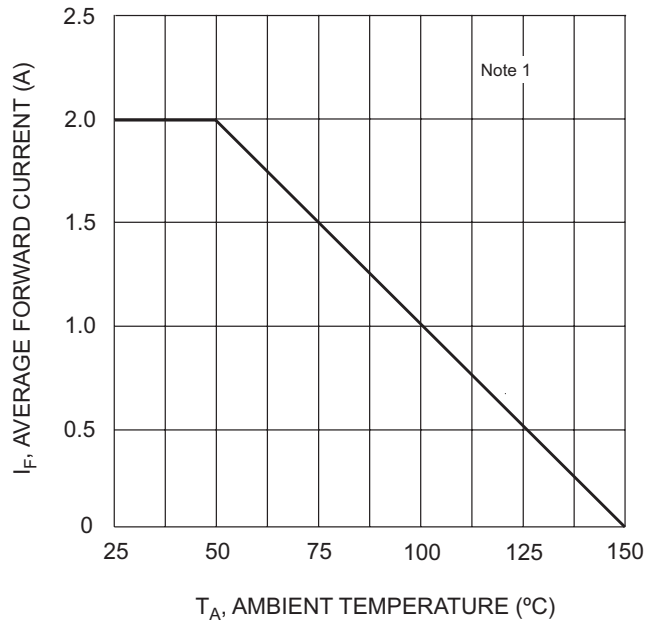


Fig. 4, Forward Current Derating Curve

**Ordering Information** (Note 5)

Device	Packaging	Shipping
DFLS230LH-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**



F03H = 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
Code	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