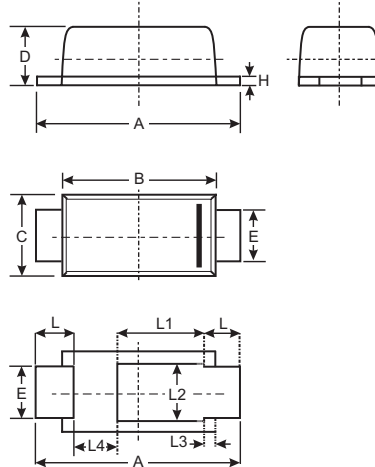


## 2.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER PowerDI™ 123

### Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- Patented Interlocking Clip Design for High Surge Current Capacity
- Low Forward Voltage Drop
- **Lead Free Finish, RoHS Compliant (Note 5)**
- **"Green" Molding Compound (No Br, Sb)**



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 (approximate)

### 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 Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	30	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	21	V
Average Forward Current @ T <sub>T</sub> = 120°C	I <sub>F(AV)</sub>	2.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	40	A
Power Dissipation (Note 1)	P <sub>D</sub>	1.67	W
Power Dissipation (Note 2)	P <sub>D</sub>	556	mW
Thermal Resistance Junction to Ambient (Note 1)	R <sub>θJA</sub>	60	°C/W
Thermal Resistance Junction to Ambient (Note 2)	R <sub>θJA</sub>	180	°C/W
Thermal Resistance Junction to Soldering (Note 3)	R <sub>θJS</sub>	10	°C/W
Operating Temperature Range	T <sub>j</sub>	-55 to +125	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 4)	V <sub>(BR)R</sub>	30	—	—	V	I <sub>R</sub> = 1.5mA
Forward Voltage	V <sub>F</sub>	—	0.36 0.4	0.42 0.49	V	I <sub>F</sub> = 1.0A I <sub>F</sub> = 2.0A
Leakage Current (Note 4)	I <sub>R</sub>	—	0.15	1.0	mA	V <sub>R</sub> = 30V, T <sub>A</sub> = 25°C
Total Capacitance	C <sub>T</sub>	—	75	—	pF	V <sub>R</sub> = 10V, f = 1.0MHz

- Notes:
1. Part mounted on 50.8mm X 50.8mm GETEK board with 25.4mm X 25.4mm copper pad, 25% anode, 75% cathode. T<sub>A</sub> = 25°C
  2. Part mounted on FR-4 board with 1.8mm X 2.5mm cathode and 1.8mm X 1.2mm anode, 1 oz. copper pads. T<sub>A</sub> = 25°C
  3. Theoretical R<sub>θJS</sub> calculated from the top center of the die straight down to the PCB cathode tab solder junction.
  4. Short duration pulse test to minimize self-heating effect.
  5. RoHS revision 13.2.2003. High Temperature Solder Exemption Applied, see EU Directive Annex Note 7.

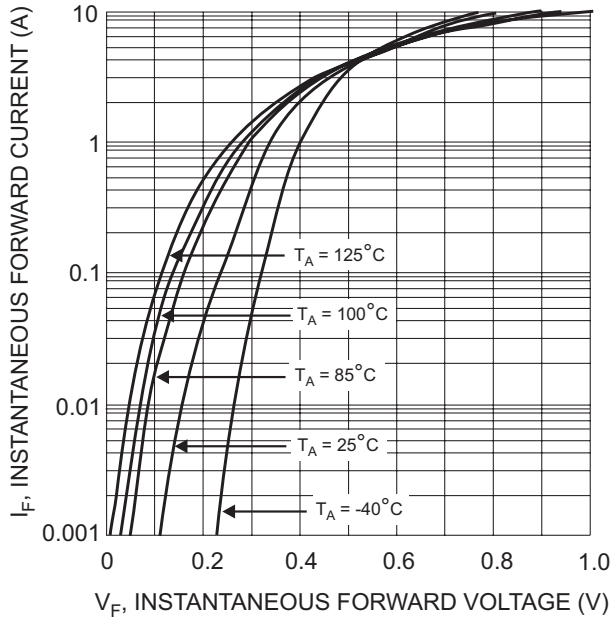


Fig. 1, Typical Forward Characteristics

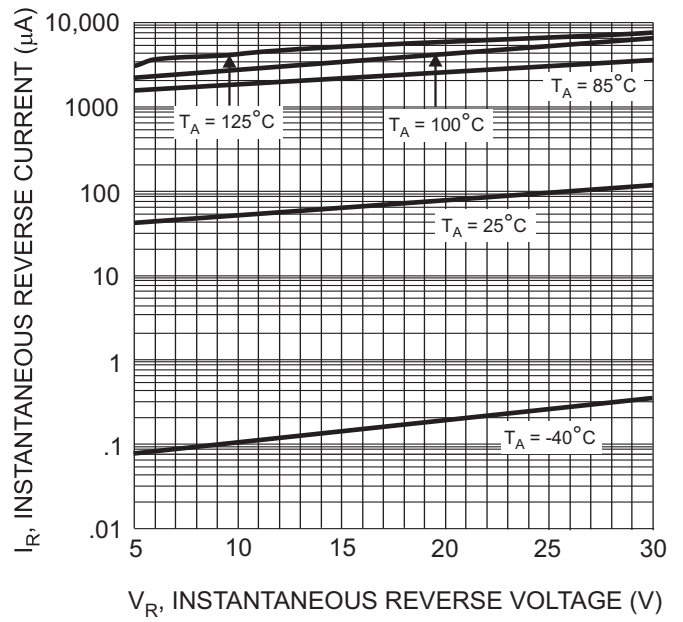


Fig. 2, Typical Reverse Characteristics

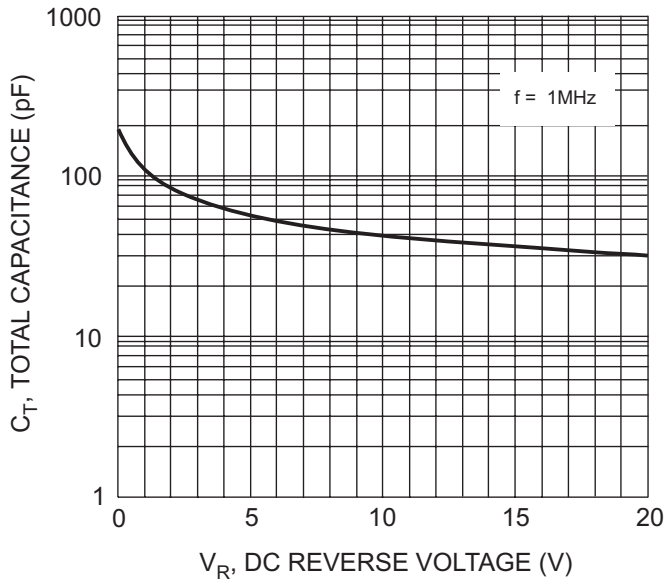


Fig. 3, Typical Total Capacitance

## Ordering Information (Note 6)

Device	Packaging	Shipping
DFLS230-7	PowerDI™ 123	3000/Tape & Reel

Notes: 6. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



F01A = 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	2010	2011	2012
Code	R	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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