

**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
- **Qualified to AEC-Q101 Standards for High Reliability**
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Green Molding Compound (No Br, Sb)**
 - **Halogen and Antimony Free. "Green" Device (Note 3)**

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-020D
- 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)

PowerDI®123



Top View

Ordering Information (Note 4)

| Part Number | Case | Packaging |
|-------------|-------------|------------------|
| DFLS260-7 | PowerDI®123 | 3000/Tape & Reel |

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
 2. See <http://www.diodes.com> 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 <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information


F17A = Product Type Marking Code
 YM = Date Code Marking
 Y = Year (ex: V = 2008)
 M = Month (ex: 9 = September)

Date Code Key

| Year | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|------|------|------|------|------|------|------|------|------|
| Code | V | W | X | Y | Z | A | B | C |

| 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 capacitance load, derate current by 20%.

| Characteristic | Symbol | Value | Unit |
|--|---------------------|-------|------|
| Peak Repetitive Reverse Voltage | V _{RRM} | 60 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Blocking Voltage | V _R | | |
| RMS Reverse Voltage | V _{R(RMS)} | 42 | 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} | 50 | A |

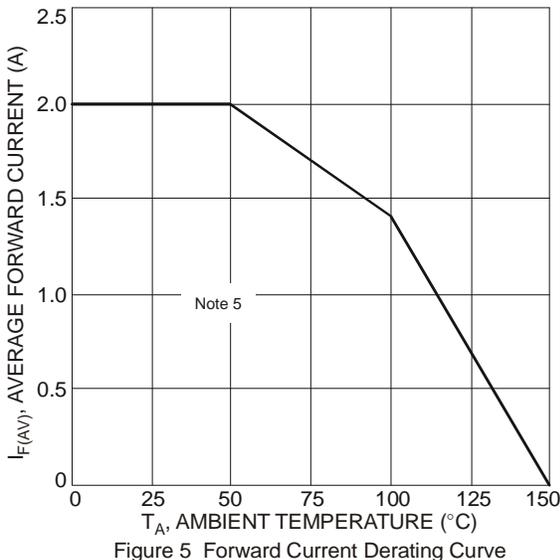
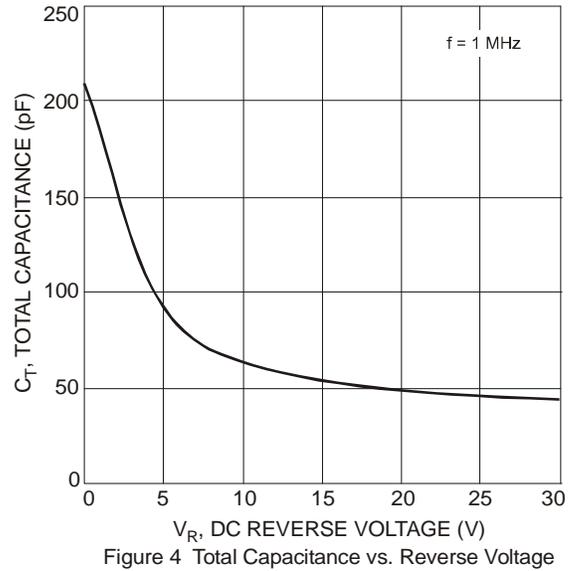
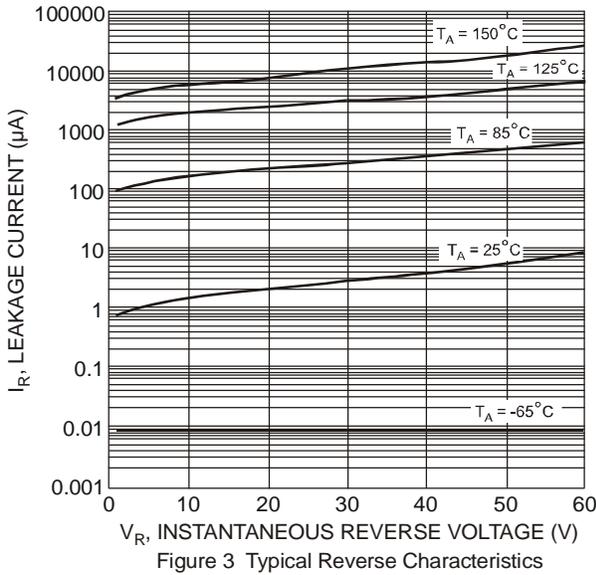
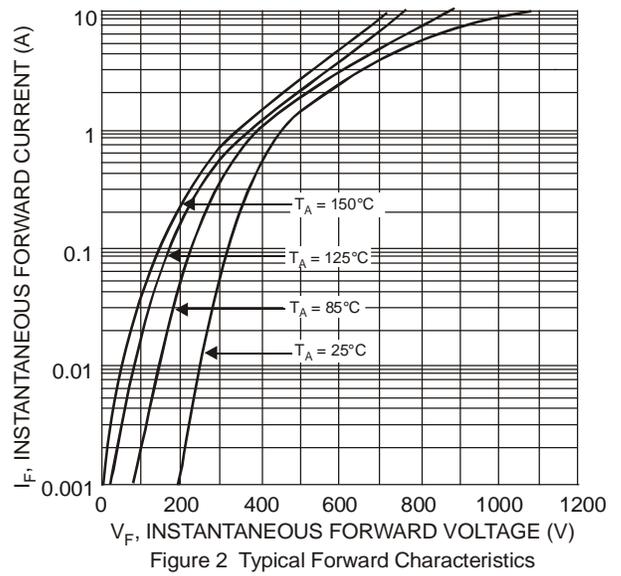
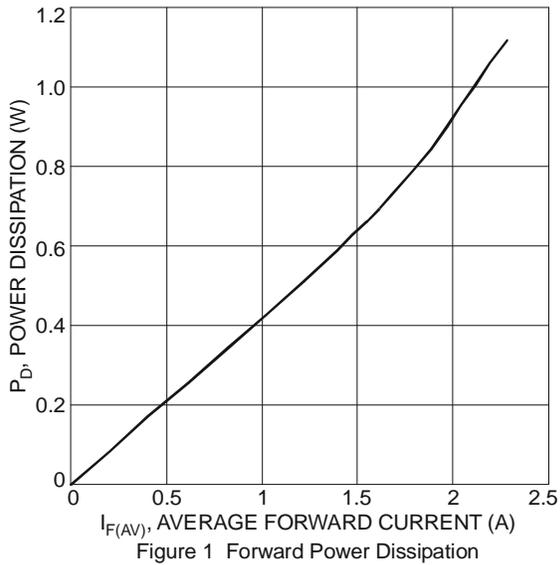
Thermal Characteristics

| Characteristic | Symbol | Typ | Max | Unit |
|---|-----------------------------------|-------------|-----|------|
| Thermal Resistance Junction to Soldering Point (Note 6) | R _{θJS} | — | 6 | °C/W |
| Thermal Resistance Junction to Ambient (Note 5) | R _{θJA} | 125 | — | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +150 | | °C |

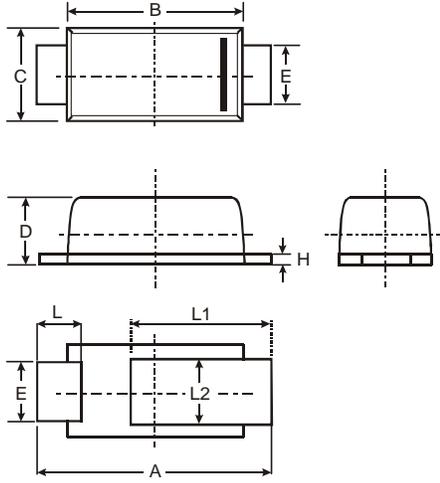
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|------------------------------------|--------------------|-----|-----|--------------|------|---|
| Reverse Breakdown Voltage (Note 7) | V _{(BR)R} | 60 | — | — | V | I _R = 0.2mA |
| Forward Voltage | V _F | — | — | 0.62 0.56 | V | I _F = 2.0A, T _A = +25°C I _F = 2.0A, T _A = +125°C |
| Leakage Current (Note 7) | I _R | — | — | 0.1 | mA | V _R = 60V, T _A = +25°C |
| Total Capacitance | C _T | — | 67 | — | pF | V _R = 10V, f = 1.0MHz |

- 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/datasheets/ap02001.pdf>.
 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 to minimize self-heating effect.

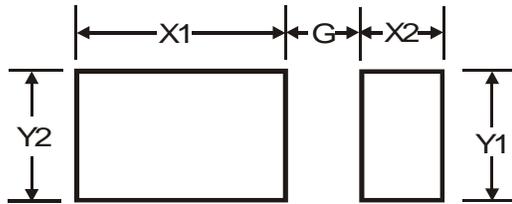


Package Outline Dimensions



| 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 | 0.55 | 0.75 | 0.65 |
| L1 | 1.80 | 2.20 | 2.00 |
| L2 | 0.95 | 1.25 | 1.10 |
| All Dimensions in mm | | | |

Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| G | 1.0 |
| X1 | 2.2 |
| X2 | 0.9 |
| Y1 | 1.4 |
| Y2 | 1.4 |

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