

# 1.0A 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 (Note 4)
- Green Molding Compound (No Br, Sb)

### **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 @3
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.01 grams (approximate)



Top View

## **Maximum Ratings** @T<sub>A</sub> = 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 Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>R</sub> WM	60	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	42	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	А

### Thermal Characteristics

Characteristic	Symbol	Тур	Max	Unit
Thermal Resistance Junction to Soldering Point (Note 2)	$R_{\theta JS}$	_	6	°C/W
Thermal Resistance Junction to Ambient (Note 1)	$R_{\theta JA}$	125	_	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to	+150	°C

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

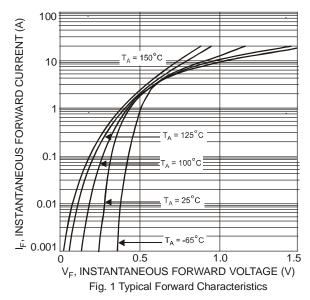
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 3)	$V_{(BR)R}$	60	_		V	$I_R = 0.2mA$
Forward Voltage	VF	_	_	0.50	V	I <sub>F</sub> = 1.0A
Leakage Current (Note 3)	$I_{R}$		_	0.1	mA	$V_R = 60V, T_A = 25^{\circ}C$
Total Capacitance	C <sub>T</sub>	_	67	_	pF	$V_R = 10V, f = 1.0MHz$

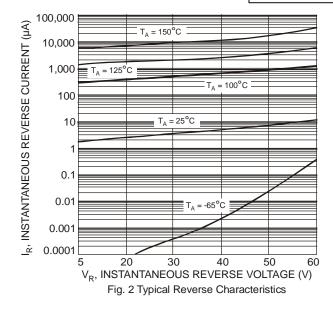
#### Notes:

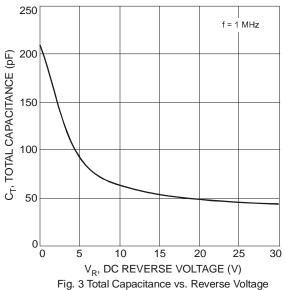
- 1. Part mounted on FR-4 board with 2 oz., minimum recommended copper pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
- 2. Theoretical  $R_{\text{0JS}}$  calculated from the top center of the die straight down to the PCB/cathode tab solder junction.
- Short duration pulse test to minimize self-heating effect.
  EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes.

**DFLS160** 







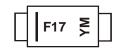


## Ordering Information (Note 5)

Part Number	Case	Packaging Packaging
DFLS160-7	PowerDI <sup>®</sup> 123	3000/Tape & Reel

Notes: 5. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

# **Marking Information**



F17 = Product Type Marking Code YM = Date Code Marking

Y = Year (ex: R = 2004)

M = Month (ex: 9 = September)

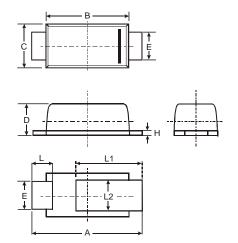
Date	Code	Key

Date Code Ney												
Year	2004	20	005	2006	2007	20	800	2009	2010	2	011	2012
Code	R		S	T	U		V	W	Х		Υ	Z
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D

PowerDI is a registered trademark of Diodes Incorporated.

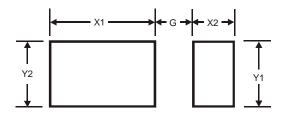


## **Package Outline Dimensions**



PowerDI®123					
Dim	Min	Max	Тур		
Α	3.50	3.90	3.70		
В	2.60	3.00	2.80		
С	1.63	1.93	1.78		
D	0.93	1.00	0.98		
Е	0.85	1.25	1.00		
Н	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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