



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
- High Current Capability and Low Forward Voltage Drop
- Lead Free Finish, RoHS Compliant (Note 5)
- "Green" Molding Compound (No Br, Sb)

Mechanical Data

- Case: PowerDI®123
- Plastic 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)
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.01 grams (approximate)



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 Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _R WM V _R	20	V
RMS Reverse Voltage	V _{R(RMS)}	14	V
Average Forward Current	I _{F(AV)}	2.0	А
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	40	А

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	P _D	1.67	W
Power Dissipation (Note 2)	P _D	556	mW
Thermal Resistance Junction to Ambient (Note 1)	$R_{ heta JA}$	60	°C/W
Thermal Resistance Junction to Ambient (Note 2)	$R_{ heta JA}$	180	°C/W
Thermal Resistance Junction to Soldering (Note 3)	$R_{ heta JS}$	10	°C/W
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

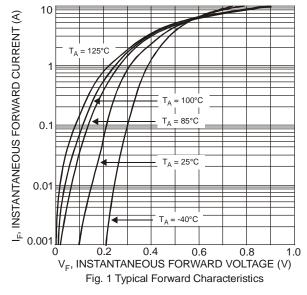
Electrical Characteristics @T_A = 25°C unless otherwise specified

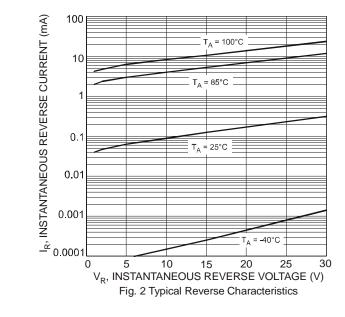
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 4)	$V_{(BR)R}$	20	_	_	V	$I_R = 1.0 \text{mA}$
Forward Voltage	V _F	_	0.32	0.36	V	$I_F = 1.0A$
Polward Voltage		_	0.375	0.42		$I_F = 2.0A$
Leakage Current (Note 4)	1-		0.26	_	mA	$V_R = 5V, T_A = 25^{\circ}C$ $V_R = 20V, T_A = 25^{\circ}C$
Leakage Current (Note 4)	I _R	_		1.0	IIIA	$V_R = 20V, T_A = 25^{\circ}C$
Total Capacitance	C _T	_	75	_	pF	$V_R = 10V, f = 1.0MHz$

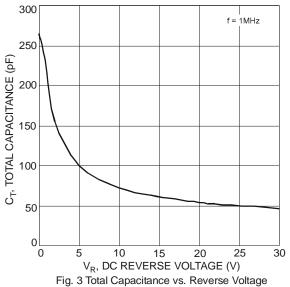
Notes:

- 1. Part mounted on 50.8mm X 50.8mm GETEK board with 25.4mm X 25.4mm copper pad, 25% anode, 75% cathode. T_A = 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_A = 25°C.
- 3. Theoretical R_{0JS} calculated from the top center of the die straight down to the PCB/cathode tab solder junction.
- Short duration pulse test used to minimize self-heating effect.
 EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes.









Ordering Information (Note 6)

Part Number	Case	Packaging
DFLS220L-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



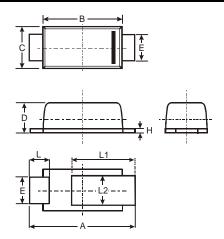
F02A = Product Type Marking Code YM = Date Code Marking Y = Year (ex: T = 2006) M = Month (ex: 9 = September)

Date Code Key

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Code	R	S	Т	U	V	W	Χ	Υ	Z	Α	В	С
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

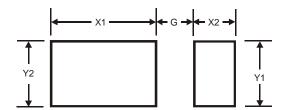


Package Outline Dimensions



	_	(R)				
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			
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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