

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
- Low Forward Voltage Drop
- Lead Free Finish, RoHS Compliant (Note 1)
- "Green" Molding Compound (No Br, Sb)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

- Case: PowerDI[®]123
- Case Material: Molded Plastic.UL "Green" Molding Compound UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- · Polarity: Cathode Band
- Terminals: Finish Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Weight: 0.01 grams (approximate)



Top View

Ordering Information (Note 2)

Part Number	Case	Packaging
DFLS140-7	PowerDI [®] 123	3000/Tape & Reel

Notes:

- 1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes.
- 2. For packaging details, go to our website at http://www.diodes.com.

Marking Information



F04 = Product Type Marking Code YM = Date Code Marking Y = Year (ex: T = 2006) M = Month (ex: 9 = September)

Date Code Key

Year	2004	20	05	2006	2007	20	800	2009	2010	20	11	2012
Code	R		3	Т	U		V	W	Х	`	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	0	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 Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	40	>
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Average Forward Current @ T _T = 119°C	I _{F(AV)}	1.1	Α
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	40	А

Thermal Characteristics

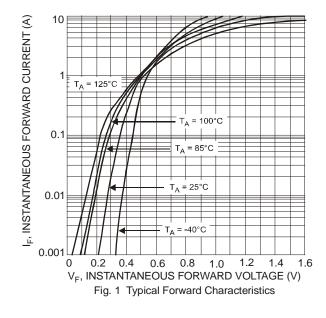
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	P _D	1.67	W
Power Dissipation (Note 2)	P _D	556	mW
Thermal Resistance Junction to Ambient (Note 3)	$R_{\theta JA}$	60	°C/W
Thermal Resistance Junction to Ambient (Note 4)	$R_{\theta JA}$	180	°C/W
Thermal Resistance Junction to Soldering (Note 5)	R ₀ JS	10	°C/W
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

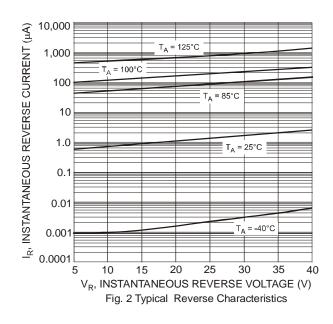
Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	40		_	V	$I_R = 20\mu A$
Forward Voltage	V _F	_	0.45	0.51	V	$I_F = 0.5A$
r olward voltage		_	0.53	_		I _F =1.1A
Leakage Current (Note 6)		_		20	μΑ	V _R = 40V, T _J = 25°C
Leakage Current (Note 6)	IR	_	_	6.0	mA	$V_R = 40V, T_J = 100^{\circ}C$
Total Capacitance	C _T	_	28	_	pF	V _R = 10V, f = 1.0MHz

Notes:

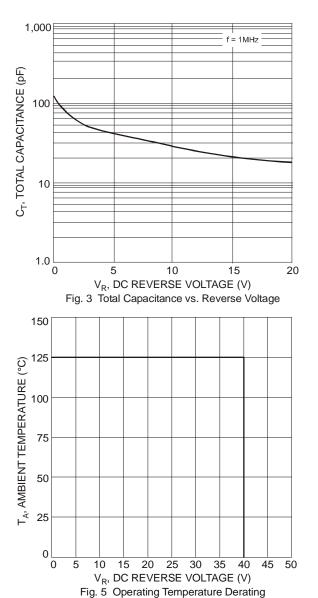
- 3. Part mounted on 50.8mm X 50.8mm GETEK board with 25.4mm X 25.4mm copper pad, 25% anode, 75% cathode. $T_A = 25^{\circ}C$
- 4. Part mounted on FR-4 board with 1.8mm X 2.5mm cathode and 1.8mm X 1.2mm anode, 1 oz. copper pads. TA = 25°C
- 5. Theoretical R_{0JS} calculated from the top center of the die straight down to the PCB/cathode tab solder junction.
- 6. Short duration pulse test used to minimize self-heating effect.

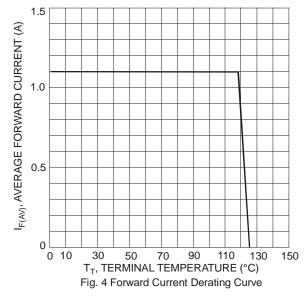


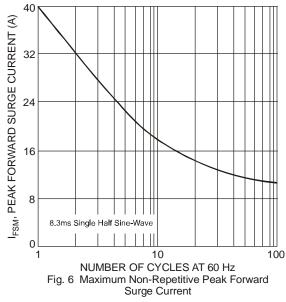


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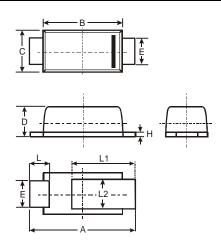








Package Outline Dimensions

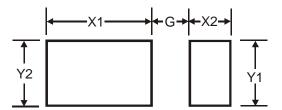


PowerDI [®] 123						
Dim	Min	Max	Тур			
Α	3.50	3.90	3.70			
В	2.60	3.00	2.80			
С	1.63	1.93	1.78			
D	0.93	1.00	0.98			
Е	0.85	1.25	1.00			
Н	0.15	0.25	0.20			
L	0.55	0.75	0.65			
L1	1.80	2.20	2.00			
L2	0.95	1.25	1.10			
All D	All Dimensions in mm					

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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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многоканальный

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