



DFLS230LQ

2.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER PowerDI® 123

Product Summary

V _R (V)	I _F (A)	V _{F MAX} (V) @ +25°C	I _{R MAX} (mA) @ +25°C
30	2.0	0.42	1.0

Description and Applications

This Schottky Barrier Rectifier has been designed to meet the stringent requirements of Automotive Applications. It is ideally suited to use as:

- Polarity Protection Diode
- · Re-circulating Diode
- Switching Diode

Features and Benefits

- 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 (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability
- PPAP Capable (Note 4)

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-020
- Terminal Connections: Cathode Band
- Terminals: Finish Matte Tin Annealed Over Copper Leadframe. Solderable per MIL-STD-202, Method 208 (3)
- Weight: 0.01 grams (approximate)



Top View

Ordering Information (Note 5)

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Part Number	Compliance	Case	Packaging
DFLS230LQ-7	Automotive	PowerDI®123	3000/Tape & Reel

Notes:

- 1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
- See http://www.diodes.com/quality/lead_free.html 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. Automotive products are AEC-Q101 qualified and are PPAP capable. Automotive, AEC-Q101 and standard products are electrically and thermally the same, except where specified. For more information, please refer to http://www.diodes.com/quality/product_compliance_definitions/.
- 5. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information



F03A = Product Type Marking Code YM = Date Code Marking Y = Year (ex: B = 2014) M = Month (ex: 9 = September)

Date Code Key

Year	2014	20)15	2016	2017	20	18	2019	2020	20	21	2022
Code	В		С	D	Е	F	=	G	Н		I	J
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	30	V
RMS Reverse Voltage	V _{R(RMS)}	21	V
Average Forward Current @ T _T = +121°C	I _{F(AV)}	2.0	Α
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	33	А

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P _D	1.67	W
Power Dissipation (Note 7)	P _D	556	mW
Thermal Resistance Junction to Ambient (Note 6)	R _{0JA}	60	°C/W
Thermal Resistance Junction to Ambient (Note 7)	$R_{\theta JA}$	180	°C/W
Thermal Resistance Junction to Soldering (Note 8)	Reus	10	°C/W
Operating Temperature Range	TJ	-40 to +125	°C
Storage Temperature Range	T _{STG}	-40 to +150	°C

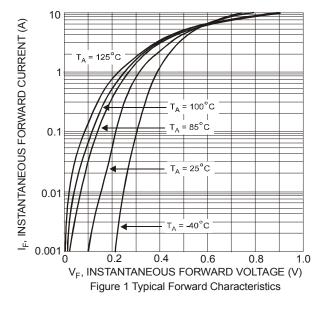
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

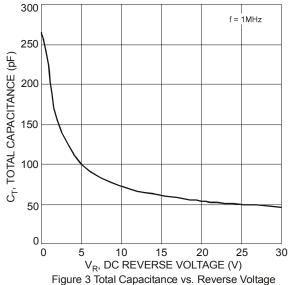
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 9)	V _{(BR)R}	30	_	_	V	I _R = 1.0mA
Forward Voltage	V _F	_	0.310 0.375	0.42	٧	I _F = 1.0A I _F = 2.0A
Leakage Current (Note 9)	I _R	_	0.260	 1.0	mA	V _R = 5V, T _A = +25°C V _R = 30V, T _A = +25°C
Total Capacitance	Ст	_	76	_	pF	V _R = 10V, f = 1.0MHz

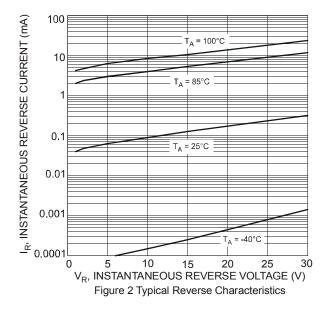
Notes:

- 6. Part mounted on 2"x2" GETEK board with 1"x1" copper pad, 25% anode, 75% cathode. T_A = +25°C.
 7. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at http://www.diodes.com.
 8. Theoretical R_{OJS} calculated from the top center of the die straight down to the PCB/cathode tab solder junction.
 9. Short duration pulse test used to minimize self-heating effect.









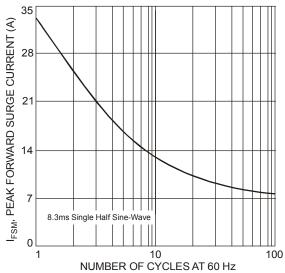
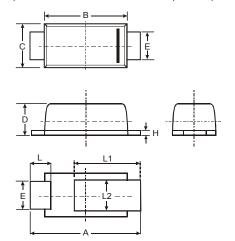


Figure 4 Maximum Non-Repetitive Peak Forward Surge Current



Package Outline Dimensions

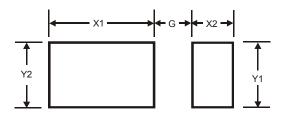
 $Please\ see\ AP02002\ at\ http://www.diodes.com/datasheets/ap02002.pdf\ for\ latest\ version.$



PowerDI [®] 123						
Dim	Min	Max	Тур			
Α	3.50	3.90	3.70			
В	2.60	3.00	2.80			
O	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

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



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



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