



DFLS1150Q

1.0A HIGH VOLTAGE SCHOTTKY BARRIER RECTIFIER PowerDI123

Product Summary (@+25°C)

V _{RRM} (V)	I _O (A)	V _F max (V)	I _{R max} (μΑ)	
150	1.0	0.82	2	

Features and Benefits

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- Patented Interlocking Clip Design for High Surge Current Capacity
- 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)

Applications

- SMPS
- DC-DC Convert
- Freewheeling Diodes
- Reverse Polarity Protection
- Blocking Diodes

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)

Part Number	Compliance	Case	Packaging
DFLS1150Q-7	Automotive	PowerDI123	3000/Tape & Reel

Notes:

- 1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
- 2. See https://www.diodes.com/quality/lead-free/ 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. Refer to https://www.diodes.com/quality/.
- 5. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information



F07 = Product Type Marking Code YM = Date Code Marking Y = Year (ex: F = 2018)

M = Month (ex: 9 = September)

Date Code Key

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Code	Χ	Y	Z	Α	В	С	D	Е	F	G	Н	I
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 (@ $T_A = +25^{\circ}C$, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive 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	150	V
RMS Reverse Voltage	V _{R(RMS)}	106	V
Average Forward Current	I _{F(AV)}	1.0	Α
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	50	A

Thermal Characteristics

Characteristic	Symbol	Тур	Max	Unit
Thermal Resistance Junction to Soldering Point (Note 6)	$R_{\theta JS}$	_	7	°C/W
Thermal Resistance Junction to Ambient (Note 7) T _A = +25°C	$R_{\theta JA}$	125	_	°C/W
Thermal Resistance Junction to Ambient (Note 8) T _A = +25°C	$R_{\theta JA}$	70	_	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to	+175	°C

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

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 9)	V _{(BR)R}	150	_	_	V	$I_R = 2\mu A$
Forward Voltage	V _F	_	_	0.82	V	I _F = 1.0A
Leakage Current (Note 9)	I _R	_	_	2	μΑ	V _R = 150V, T _A = +25°C
Total Capacitance	Ст	_	28	_	pF	$V_R = 5V_{DC}$, $f = 1MHz$
Switching Speed	t _{RR}	_	13	_	ns	I _F = 0.5A, I _R = 1A, I _{RR} = 0.25A (RG1)

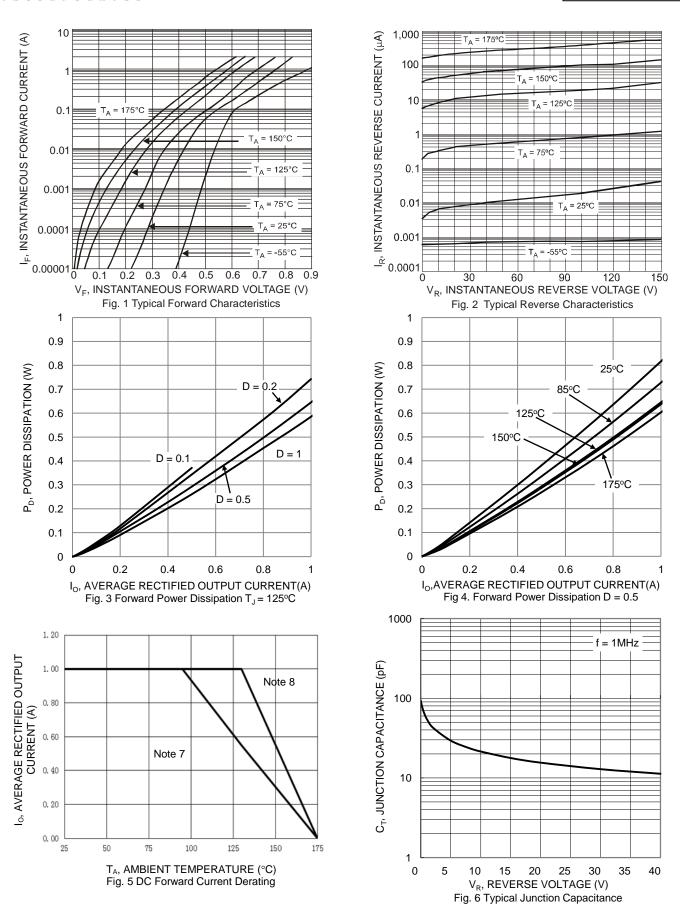
Notes:

- 6. Theoretical $R_{\theta JS}$ calculated from the top center of the die straight down to the PCB/cathode tab solder junction.
- 7. 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/package-outlines.html.

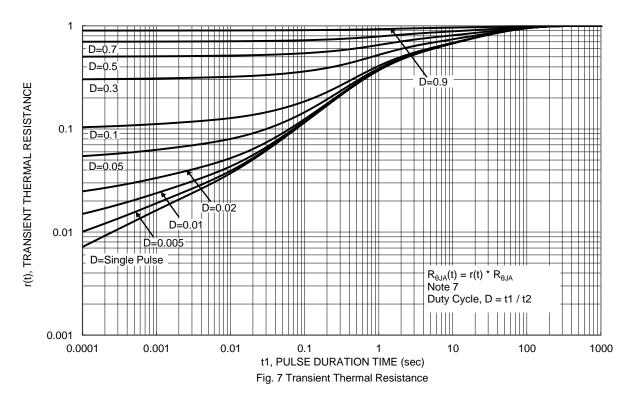
 8. Part mounted on 1inch sq. copper pad, 2oz.

 9. Short duration pulse test used to minimize self-heating effect.







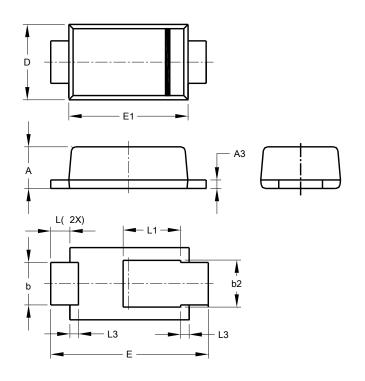




Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

PowerDI123

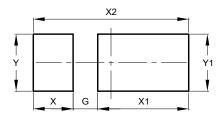


PowerDI123							
Dim	Min	Max	Тур				
Α	0.93	1.00	0.98				
A3	0.15	0.25	0.20				
b	0.85	1.25	1.00				
b2	1.025	1.125	1.10				
D	1.63	1.93	1.78				
Е	3.50	3.90	3.70				
E1	2.60	3.00	2.80				
L	0.40	0.50	0.45				
L1	1.25	1.40	1.35				
L3	0.125	0.275	0.20				
All Dimensions in mm							

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

PowerDI123



Dimensions	value		
Dillicitatoria	(in mm)		
G	0.65		
Х	1.05		
X1	2.40		
X2	4.10		
Y	1.50		
Y1	1.50		



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