

Product Summary

V_R (V)	I_F (A)	$V_{F\text{ MAX}}$ (V) @ +25°C	$I_{R\text{ MAX}}$ (mA) @ +25°C
30	2.0	0.49	1.0

Features

- Ultra-Small Surface-Mount Package
- Low Power Loss, High Efficiency
- Patented Interlocking Clip Design for High Surge Current Capacity
- Low-Forward Voltage Drop
- Guard Ring Die Construction for Transient Protection
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- The DFLS230Q is suitable for automotive applications requiring specific change control; this part is AEC-Q101 qualified, PPAP capable, and manufactured in IATF16949 certified facilities.

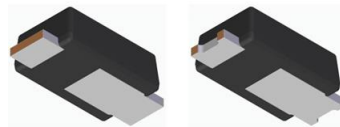
<https://www.diodes.com/quality/product-definitions/>

Description and Applications

This Schottky barrier rectifier is designed to meet the stringent requirements of automotive applications. It is ideally suited to be used as:

- Polarity protection diodes
- Recirculating diodes
- Switching diodes

PowerDI123



Bottom View

Mechanical Data

- Package: PowerDI[®]123
- Package 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)

Ordering Information (Note 4)

Orderable Part Number	Package	Packing	
		Qty.	Carrier
DFLS230Q-7	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. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



F01A = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: M = 2025)
M = Month (ex: 9 = September)

Date Code Key

Year	2014	-	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Code	B	-	M	N	P	R	S	T	U	V	W	X

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Maximum Ratings (@T_A = +25°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	V _{RRM}	30	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _R		
Average Forward Current	I _{F(AV)}	2.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine Wave Superimposed on Rated Load	I _{FSM}	40	A

ESD Ratings

Characteristic	Symbol	Ratings	Unit
Human Body Mode ESD Protection	ESD HBM	4000	V
Machine Model ESD Protection	ESD MM	400	V
Charged Device Model	ESD CDM	1	kV

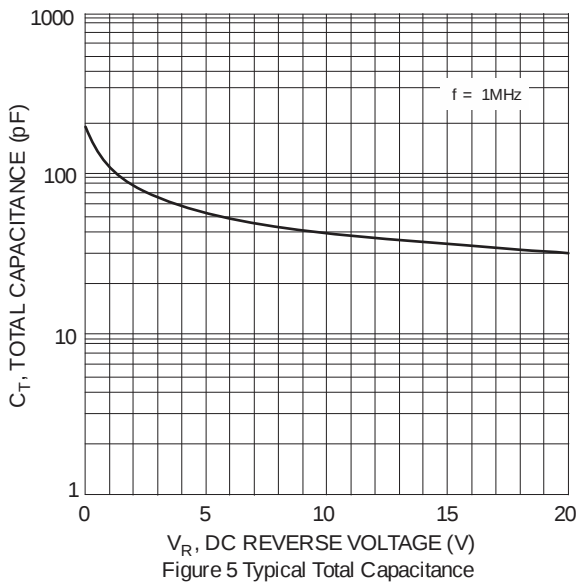
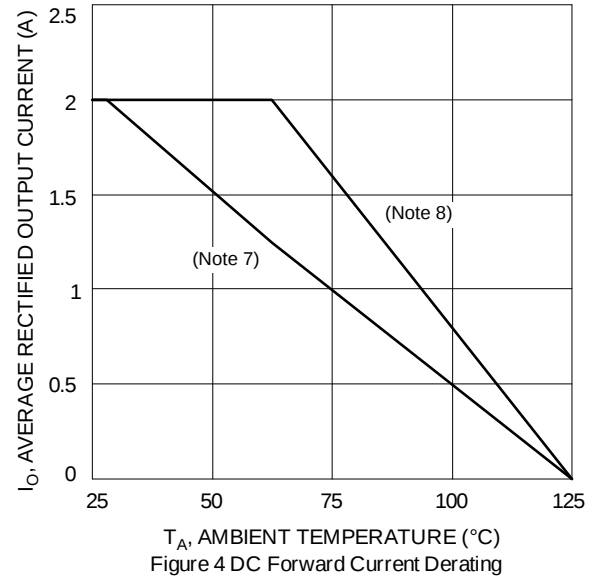
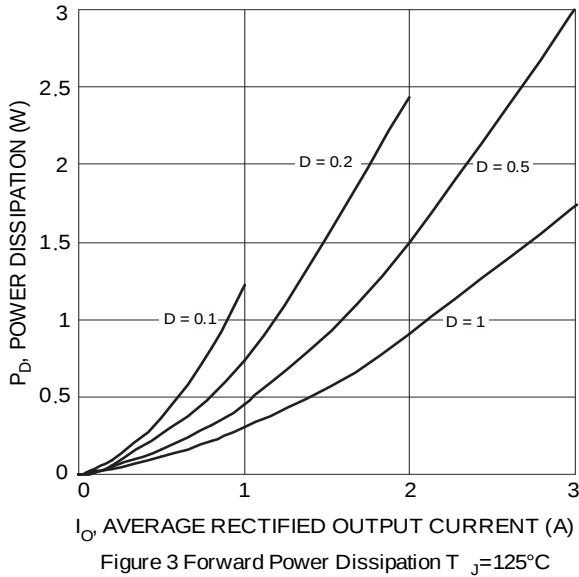
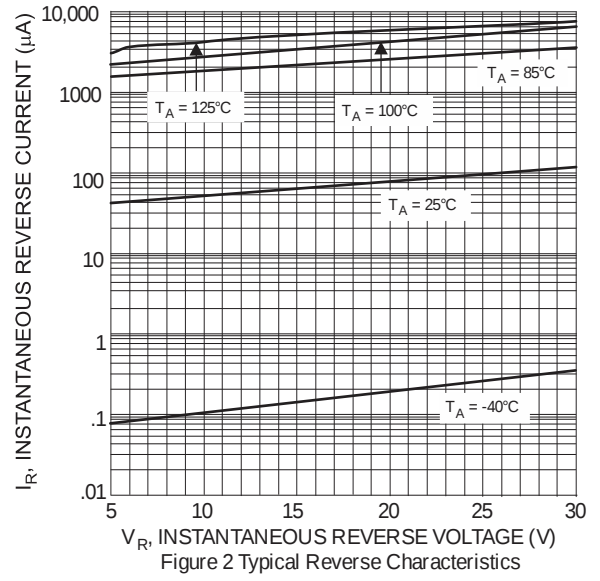
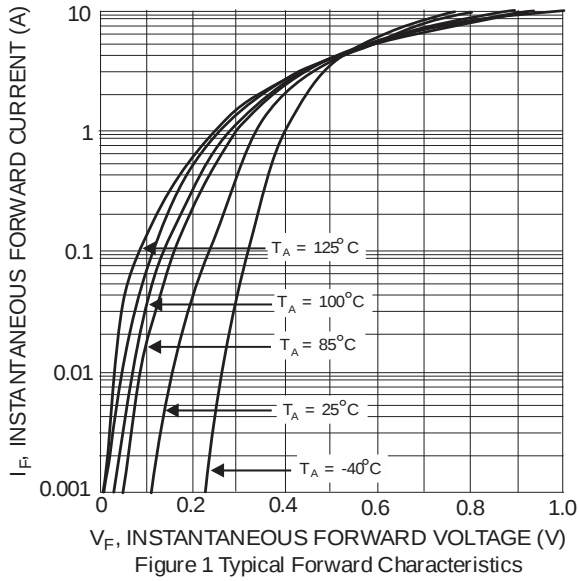
Thermal Characteristics

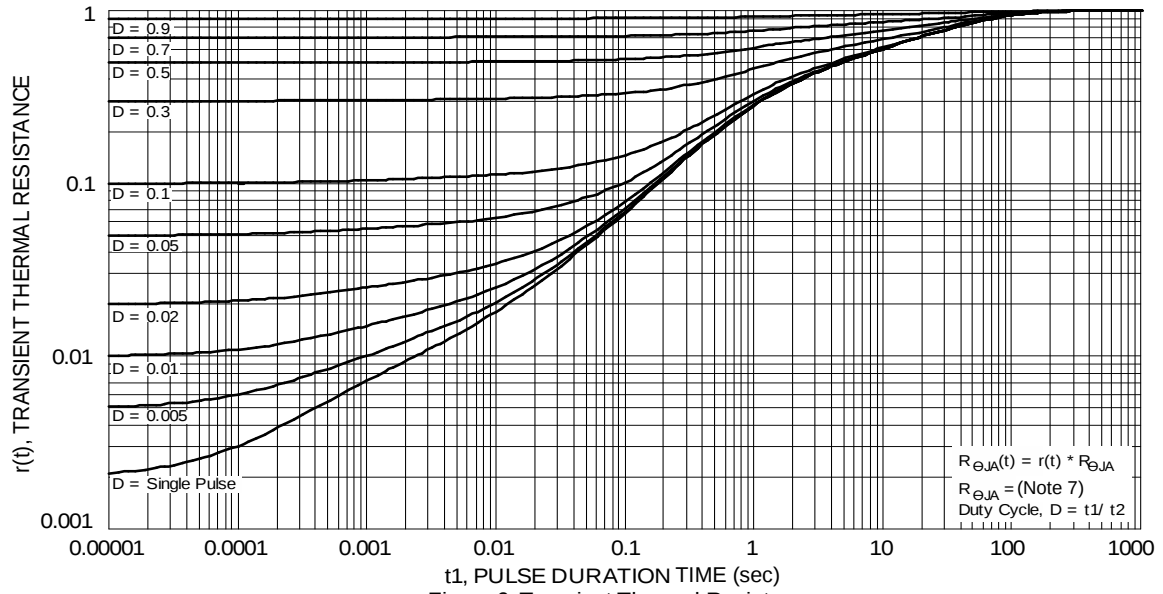
Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance Junction to Ambient (Note 5)	R _{θJA}	60	—	°C/W
Thermal Resistance Junction to Ambient (Note 6)	R _{θJA}	180	—	°C/W
Thermal Resistance Junction to Ambient (Note 7)	R _{θJA}	110	—	°C/W
Thermal Resistance Junction to Ambient (Note 8)	R _{θJA}	55	—	°C/W
Thermal Resistance Junction to Soldering (Note 9)	R _{θJS}	10	—	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +125		°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 10)	V _{(BR)R}	30	—	—	V	I _R = 1.5mA
Forward Voltage	V _F	—	0.36 0.4	0.42 0.49	V	I _F = 1.0A, T _A = +25°C I _F = 2.0A, T _A = +25°C
Leakage Current (Note 10)	I _R	—	0.15	1.0	mA	V _R = 30V, T _A = +25°C
Total Capacitance	C _T	—	75	—	pF	V _R = 10V, f = 1.0MHz
Switching Speed t _{RR}	t _{RR}	—	17	—	ns	I _F = 0.5A, I _R = 1A, I _{RR} = 0.25A (RG1)

- Notes:
- Part mounted on 50.8mm × 50.8mm GETEK board with 25.4mm × 25.4mm copper pad, 25% anode, 75% cathode. T_A = +25°C.
 - Part mounted on FR-4 board with 1.8mm × 2.5mm cathode and 1.8mm × 1.2mm anode, 1oz. copper pads. T_A = +25°C.
 - Part mounted on FR4 PCB, 2oz.
 - Part Mounted on 1inch sq. copper pad, 2oz.
 - Theoretical R_{θJS} 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.

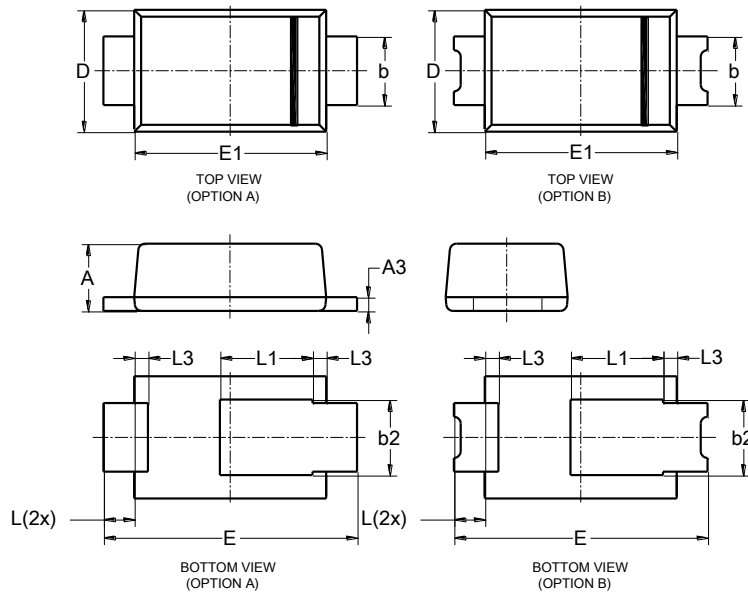




Package Outline Dimensions

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

PowerDI123

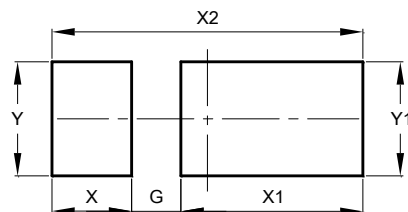


PowerDI123			
Dim	Min	Max	Typ
A	0.93	1.00	0.98
A3	0.15	0.25	0.20
b	0.85	1.25	1.00
b2	1.025	1.125	1.10
D	1.63	1.93	1.78
E	3.50	3.90	3.70
E1	2.60	3.00	2.80
L	0.40	0.50	0.45
L1	1.25	1.40	1.35
L3	0.125	0.275	0.20
All Dimensions in mm			

Suggested Pad Layout

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

PowerDI123



Dimensions	Value (in mm)
G	0.65
X	1.05
X1	2.40
X2	4.10
Y	1.50
Y1	1.50

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