

Product Summary

V_{RRM} (V)	I_O (A)	V_F max (V)	I_R max (mA)
30	2	0.49	1.0

Features and Benefits

- 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 (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Description and Applications

This Schottky Barrier Rectifier is designed to meet the stringent requirements of automotive applications. It is ideally suited for use as:

- Polarity Protection Diode
- Recirculating Diode
- Switching Diode

Mechanical Data

- Case: PowerDI@123
- Case Material—Molded Plastic
UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: Cathode Band
- Terminals: Finish—Matte Tin Annealed over Copper Leadframe.
Solderable per MIL-STD-202, Method 208
- Ordering Information: See Last Page
- Weight: 0.01 grams (Approximately)



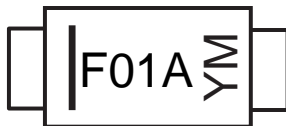
Top View

Ordering Information (Note 4)

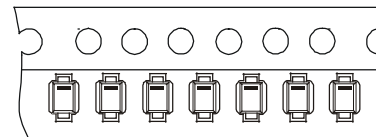
Part Number	Case	Packaging
DFLS230-7	PowerDI123	3000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 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 <http://www.diodes.com/products/packages.html>.

Marking Information



F01A = Product Type Marking Code
 YM = Date Code Marking
 Y = Year (ex: G = 2019)
 M = Month (ex: 9 = September)



Date Code Key

Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Code	D	E	F	G	H	I	J	K	L	M

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 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 = 120°C	$I_{F(AV)}$	2.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed On Rated Load	I_{FSM}	40	A
Power Dissipation (Note 5)	P_D	1.67	W
Power Dissipation (Note 6)	P_D	556	mW
Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	60	°C/W
Thermal Resistance Junction to Ambient (Note 6)	$R_{\theta JA}$	180	°C/W
Thermal Resistance Junction to Soldering (Note 7)	$R_{\theta JS}$	10	°C/W
Operating Temperature Range	T _j	-55 to +125	°C
Storage Temperature Range	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 8)	$V_{(BR)R}$	30	—	—	V	I _R = 1.5mA
Forward Voltage	V_F	—	0.36 0.4	0.42 0.49	V	I _F = 1.0A I _F = 2.0A
Leakage Current (Note 8)	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

- Notes:
5. Part mounted on 50.8mm × 50.8mm GETEK board with 25.4mm × 25.4mm copper pad, 25% anode, 75% cathode. T_A = 25°C.
 6. Part mounted on FR-4 board with 1.8mm × 2.5mm cathode and 1.8mm × 1.2mm anode, 1 oz. copper pads. T_A = 25°C.
 7. Theoretical R_{9JS} calculated from the top center of the die straight down to the PCB cathode tab solder junction
 8. Short duration pulse test to minimize self-heating effect.
 9. RoHS revision 13.2.2003. High Temperature Solder Exemption Applied, see EU Directive Annex Note 7.

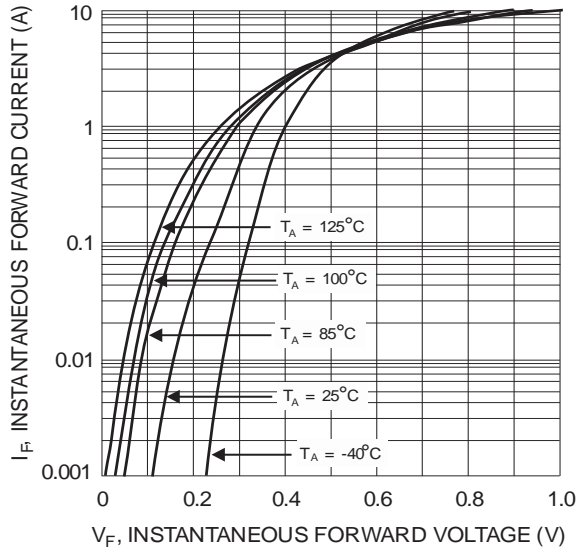


Fig. 1, Typical Forward Characteristics

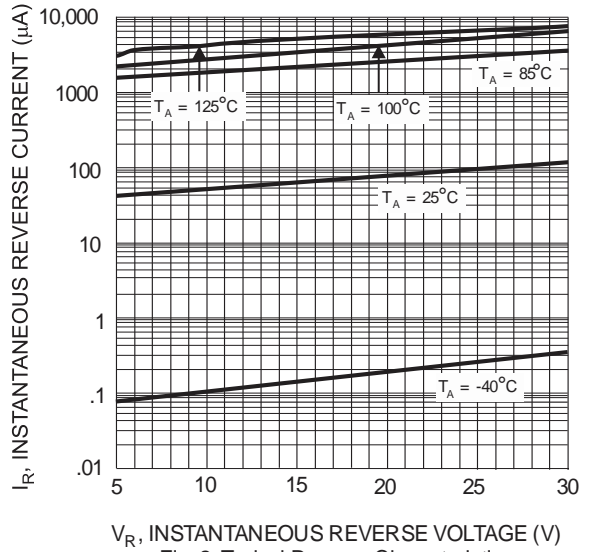


Fig. 2, Typical Reverse Characteristics

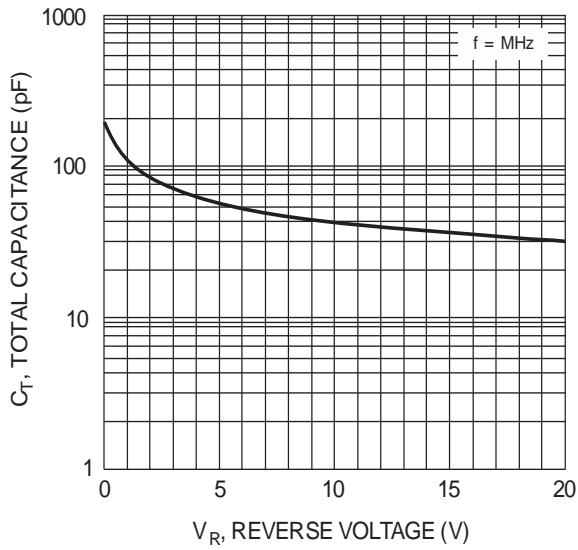
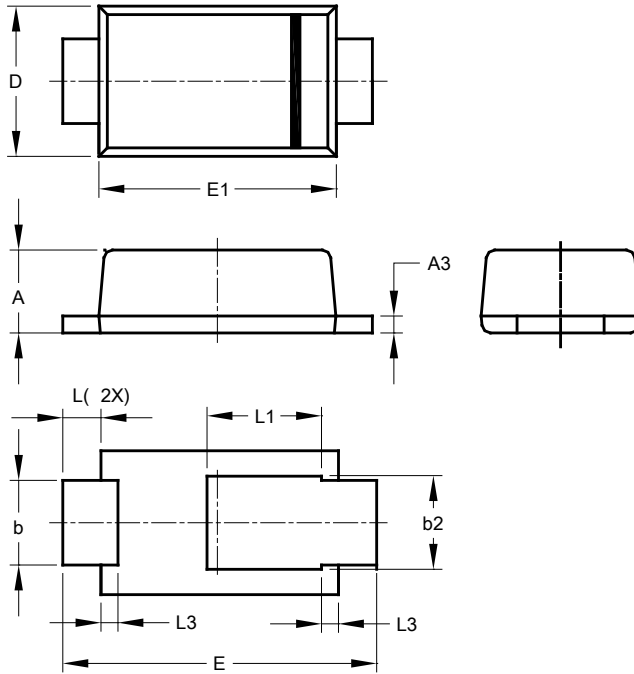


Fig. 3, Typical Total Capacitance

Package Outline Dimensions

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

PowerDI123

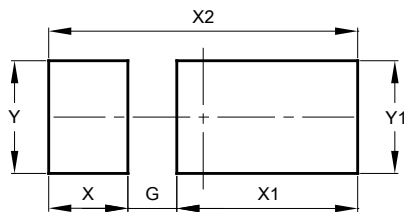


PowerDI123			
Dim	Min	Max	Typ
A	0.93	1.00	0.98
A3	0.15	0.25	0.20
b	0.85	1.25	1.00
b2	1.025	1.125	1.10
D	1.63	1.93	1.78
E	3.50	3.90	3.70
E1	2.60	3.00	2.80
L	0.40	0.50	0.45
L1	1.25	1.40	1.35
L3	0.125	0.275	0.20
All Dimensions in mm			

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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