

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
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **An Automotive-Compliant Part is Available Under Separate Datasheet ([DFLS230Q](#))**

Description and Applications

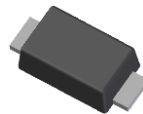
This Schottky Barrier Rectifier is ideally suited for use as:

- Polarity protection diodes
- Recirculating diodes
- Switching diodes

Mechanical Data

- Package: PowerDI[®]123
- Package Material—Molded Plastic, UL Flammability 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
- Weight: 0.01 grams (Approximately)

PowerDI123



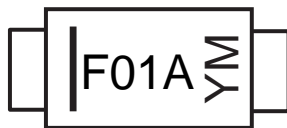
Top View

Ordering Information (Note 4)

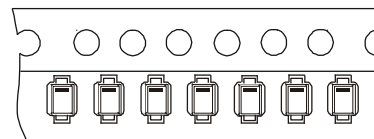
Part Number	Package	Packing	
		Qty.	Carrier
DFLS230-7	PowerDI123	3000	Tape & Reel

- 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



F01A = Product Type Marking Code
 YM = Date Code Marking
 Y = Year (ex: J = 2022)
 M = Month (ex: 9 = September)



Date Code Key

Year	2004	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Code	R	J	K	L	M	N	O	P	R	S	T
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

PowerDI is a registered trademark of Diodes Incorporated.

Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

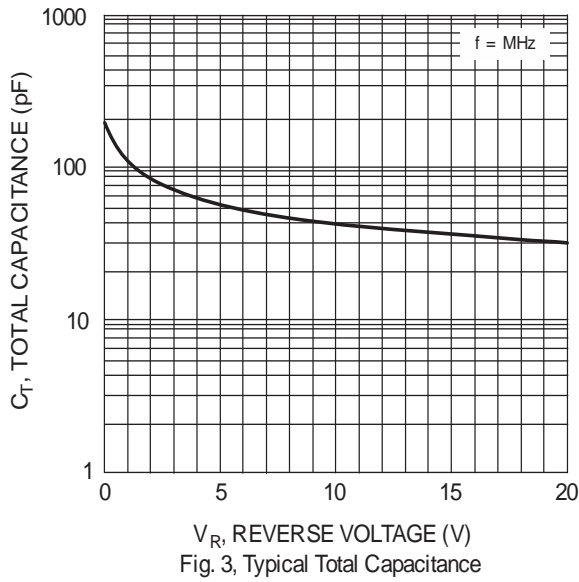
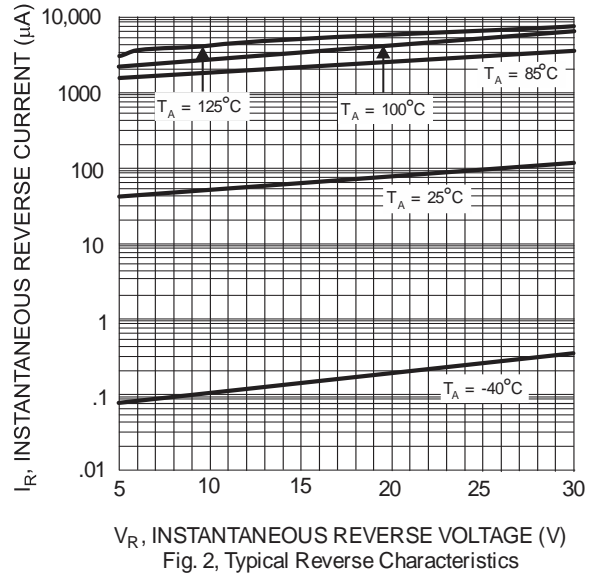
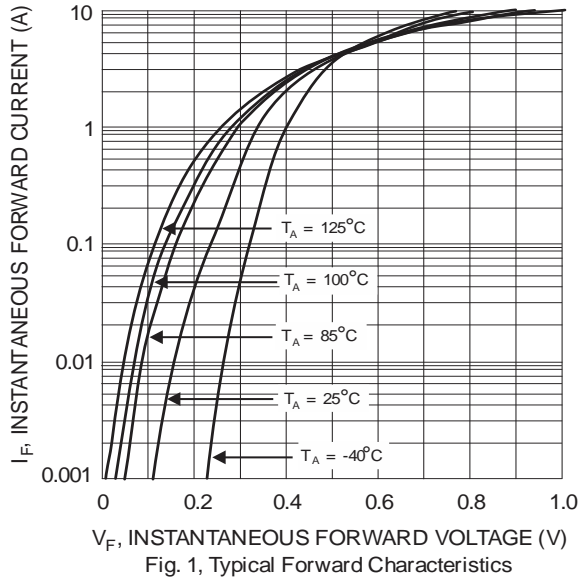
Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	30	V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_R		
RMS Reverse Voltage	$V_{R(RMS)}$	21	V
Average Forward Current @ $T_T = +120^\circ\text{C}$	$I_{F(AV)}$	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	$^\circ\text{C/W}$
Thermal Resistance Junction to Ambient (Note 6)	$R_{\theta JA}$	180	$^\circ\text{C/W}$
Thermal Resistance Junction to Soldering (Note 7)	$R_{\theta JS}$	10	$^\circ\text{C/W}$
Operating Temperature Range	T_J	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to +125	$^\circ\text{C}$

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 8)	$V_{(BR)R}$	30	—	—	V	$I_R = 1.5\text{mA}$
Forward Voltage	V_F	—	0.36 0.4	0.42 0.49	V	$I_F = 1.0\text{A}$ $I_F = 2.0\text{A}$
Leakage Current (Note 8)	I_R	—	0.15	1.0	mA	$V_R = 30\text{V}$, $T_A = +25^\circ\text{C}$
Total Capacitance	C_T	—	75	—	pF	$V_R = 10\text{V}$, $f = 1.0\text{MHz}$

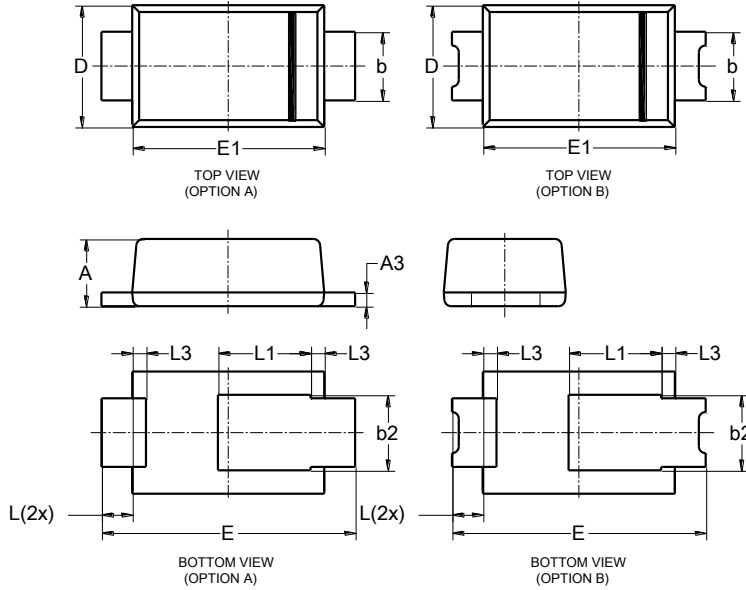
- Notes:
5. Part mounted on 50.8mm x 50.8mm GETEK board with 25.4mm x 25.4mm copper pad, 25% anode, 75% cathode. $T_A = +25^\circ\text{C}$.
 6. Part mounted on FR-4 board with 1.8mm x 2.5mm cathode and 1.8mm x 1.2mm anode, 1oz. copper pads. $T_A = +25^\circ\text{C}$.
 7. Theoretical $R_{\theta JS}$ calculated 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.



Package Outline Dimensions

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

PowerDI123

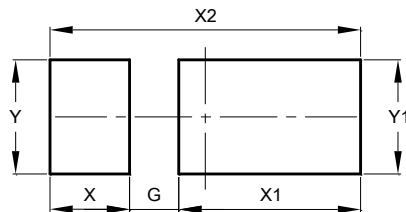


PowerDI123			
Dim	Min	Max	Typ
A	0.93	1.00	0.98
A3	0.15	0.25	0.20
b	0.85	1.25	1.00
b2	1.025	1.125	1.10
D	1.63	1.93	1.78
E	3.50	3.90	3.70
E1	2.60	3.00	2.80
L	0.40	0.50	0.45
L1	1.25	1.40	1.35
L3	0.125	0.275	0.20
All Dimensions in mm			

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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