



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- Patented Interlocking Clip Design for High Surge Current Capacity
- **Qualified to AEC-Q101 Standards for High Reliability**
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **Green Molding Compound (No Br, Sb)**

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)

POWERDI®123



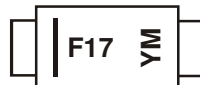
Top View

Ordering Information (Note 2)

Part Number	Case	Packaging
DFLS160-7	POWERDI®123	3000/Tape & Reel

- Notes: 1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes
2. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



F17 = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: R = 2004)
M = Month (ex: 9 = September)

Date Code Key

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Code	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E
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°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	V _{RRM}	60	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _R		
RMS Reverse Voltage	V _{R(RMS)}	42	V
Average Forward Current	I _{F(AV)}	1.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	I _{FSM}	50	A

Thermal Characteristics

Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance Junction to Soldering Point (Note 3)	R _{θJS}	—	6	°C/W
Thermal Resistance Junction to Ambient (Note 4)	R _{θJA}	125	—	°C/W
Typical Thermal Resistance (Note 7)	R _{θJC}	—	18	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150		°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 5)	V _{(BR)R}	60	—	—	V	I _R = 0.2mA
Forward Voltage	V _F	—	—	0.50	V	I _F = 1.0A
Leakage Current (Note 5)	I _R	—	—	0.1	mA	V _R = 60V, T _A = 25°C
Total Capacitance	C _T	—	67	—	pF	V _R = 10V, f = 1.0MHz

- Notes:
- Theoretical R_{θJS} calculated from the top center of the die straight down to the PCB/cathode tab solder junction.
 - Device mounted on Polymide substrate, 1" x 1" 2oz copper double-sided PC board with minimum recommended pad layout, which can be found on our website at <http://www.diodes.com>.
 - Short duration pulse test to minimize self-heating effect
 - 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 X 2.5mm cathode and 1.8mm X 1.2mm anode, 1 oz. copper pads. T_A = 25°C

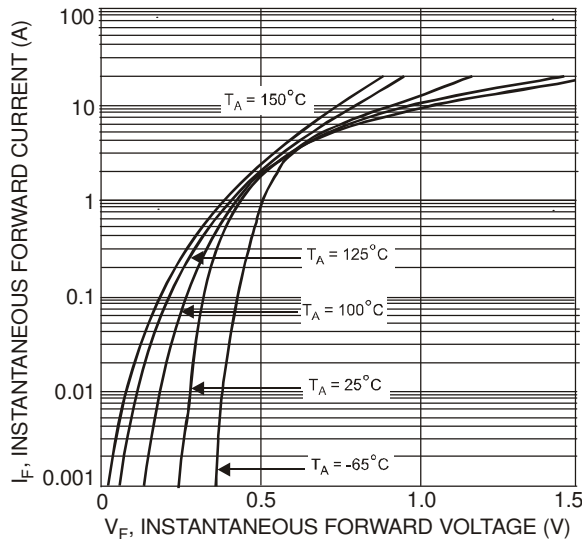


Fig. 1 Typical Forward Characteristics

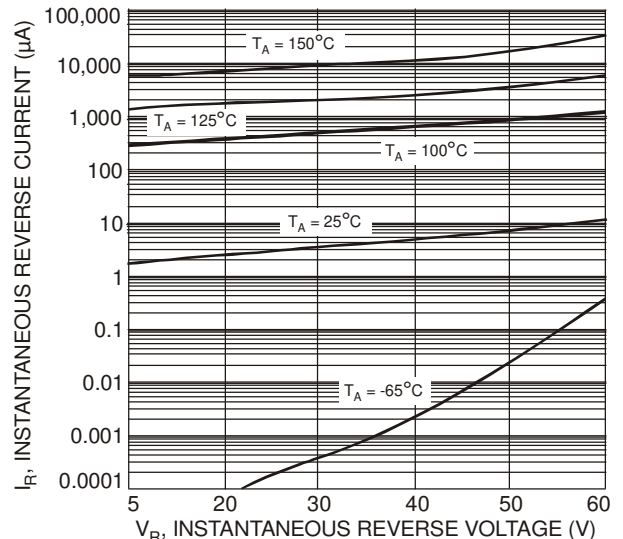


Fig. 2 Typical Reverse Characteristics

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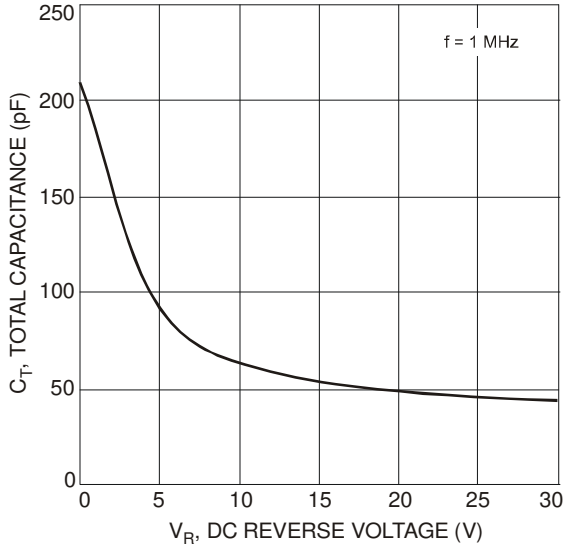


Fig. 3 Total Capacitance vs. Reverse Voltage

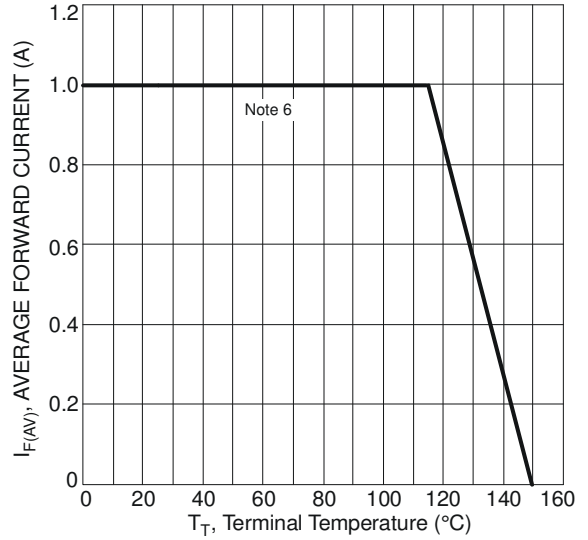
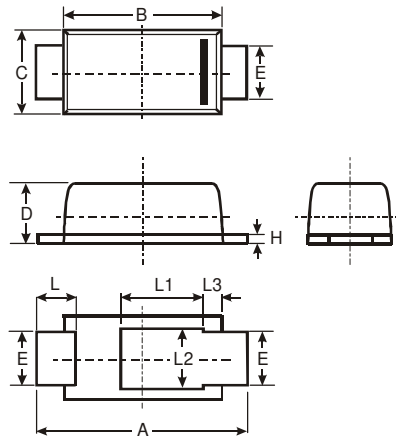


Fig.4 Forward Current Derating (Note 4)

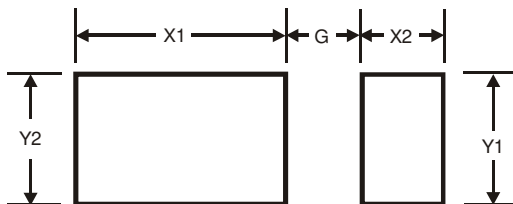
Package Outline Dimensions



POWERDI [®] 123			
Dim	Min	Max	Typ
A	3.50	3.90	3.70
B	2.60	3.00	2.80
C	1.63	1.93	1.78
D	0.93	1.00	0.98
E	0.85	1.25	1.00
H	0.15	0.25	0.20
L	0.40	0.50	0.45
L1	-	-	1.35
L2	-	-	1.10
L3	-	-	0.20

All Dimensions in mm

Suggested Pad Layout



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

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