



**Features**

- 1W Power Dissipation on FR-4 PCB
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **Patented Interlocking Clip Design for High Surge Capacity, US Patent #7,095,113**

**Mechanical Data**

- Case: POWERDI123
- 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

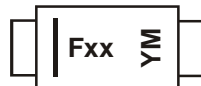
**Ordering Information** (Note 4)

Part Number	Qualification	Case	Packaging
(Type Number)-7*	Commercial	POWERDI®123	3000/Tape & Reel
(Type Number)Q-7*	Automotive	POWERDI®123	3000/Tape & Reel

\* Add "-7" to the appropriate type number in Electrical Characteristics Table. Example: 6.2V Zener = DFLZ6V2-7

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
  2. See <http://www.diodes.com> 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/datasheets/ap02007.pdf>.

**Marking Information**



Fxx = Product Type Marking Code  
(See Electrical Characteristics Table)  
YM = Date Code Marking  
Y = Year (ex: A = 2013)  
M = Month (ex: 9 = September)

Date Code Key

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Code	U	V	W	X	Y	Z	A	B	C	D	E	F

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<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Forward Voltage @ I <sub>F</sub> = 200mA	V <sub>F</sub>	1.2	V

**Thermal Characteristics**

Characteristic	Symbol	Typ	Value	Unit
Power Dissipation (Note 5)	P <sub>D</sub>	—	1.0	W
Thermal Resistance Junction to Ambient Air (Note 5)	R <sub>θJA</sub>	110	—	°C/W
Thermal Resistance Junction to Soldering Point (Note 6)	R <sub>θJS</sub>	—	9	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	—	-55 to +150	°C

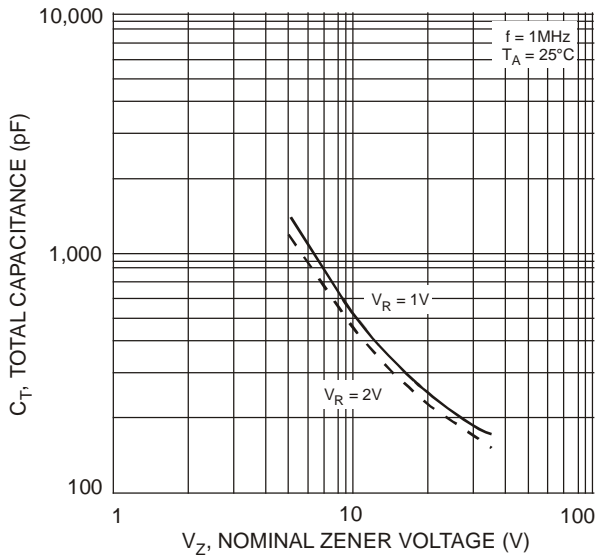
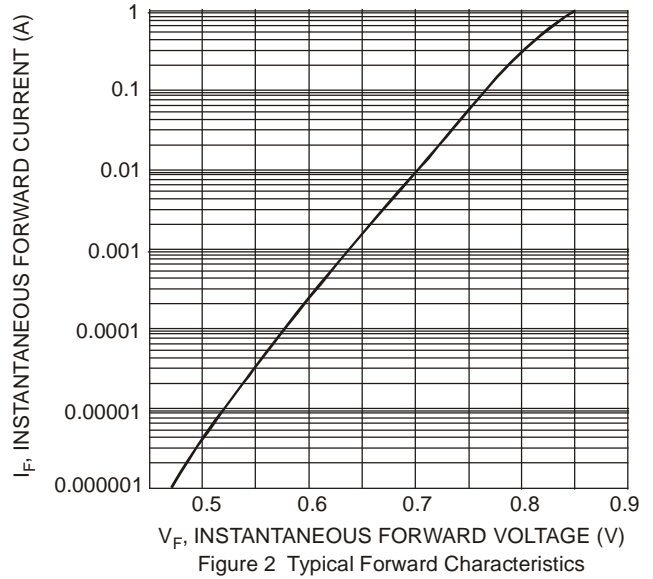
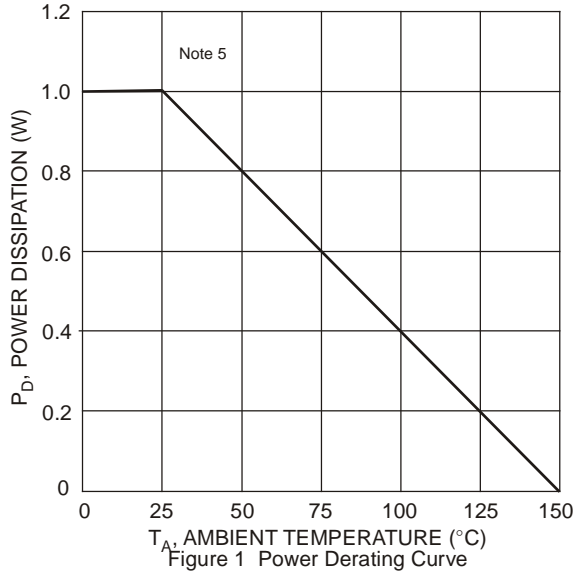
**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Type Number	Marking Codes	Zener Voltage Range (Note 7)				Zener Impedance		Maximum Reverse Current (Note 7)		Temperature Coefficient @ I <sub>ZTC</sub> %/°C	
		V <sub>Z</sub> @ I <sub>ZT</sub>			I <sub>ZT</sub>	Z <sub>ZT</sub> @ I <sub>ZT</sub>		I <sub>R</sub>	@ V <sub>R</sub>	Min	Max
		Nom (V)	Min (V)	Max (V)	mA	Typ (Ω)	Max (Ω)	μA	V		
DFLZ5V1	FHK	5.1	4.8	5.4	100	2	6	2.5	1	-0.08	-0.2
DFLZ5V6	FHL	5.6	5.2	6.0	100	1	4	10	2	-0.04	0.04
DFLZ6V2	FHN	6.2	5.8	6.6	100	1	3	5	2	-0.01	0.06
DFLZ6V8	FHO	6.8	6.4	7.2	100	1	3	5	3	0	0.07
DFLZ7V5	FHQ	7.5	7.0	7.9	100	1	2	5	3	0	0.07
DFLZ8V2	FHR	8.2	7.7	8.7	100	1	2	5	3	0.03	0.08
DFLZ9V1	FHT	9.1	8.5	9.6	50	1	4	5	5	0.03	0.08
DFLZ10	FHU	10	9.4	10.6	50	1	4	5	7.5	0.05	0.09
DFLZ11	FHV	11	10.4	11.6	50	1	7	4	8.2	0.05	0.10
DFLZ12	FHW	12	11.4	12.7	50	1	7	3	9.1	0.05	0.10
DFLZ13	FHX	13	12.4	14.1	50	1	10	2	10	0.05	0.10
DFLZ15	FHZ	15	13.8	15.6	50	1	10	1	11	0.05	0.10
DFLZ16	FJA	16	15.3	17.1	25	1	15	1	12	0.06	0.11
DFLZ18	FJF	18	16.8	19.1	25	2	15	1	13	0.06	0.11
DFLZ20	FJG	20	18.8	21.2	25	3	15	1	15	0.06	0.11
DFLZ22	FJK	22	20.8	23.3	25	3	15	1	16	0.06	0.11
DFLZ24	FJL	24	22.8	25.6	25	2	15	1	18	0.06	0.11
DFLZ27	FJN	27	25.1	28.9	25	3	15	1	20	0.06	0.11
DFLZ30	FJQ	30	28	32	25	8	15	1	22	0.06	0.11
DFLZ33	FJR	33	31	35	25	5	15	1	24	0.06	0.11
DFLZ36	FJS	36	34	38	10	5	40	1	27	0.06	0.11
DFLZ39	FJT	39	37	41	10	5	40	1	30	0.06	0.11

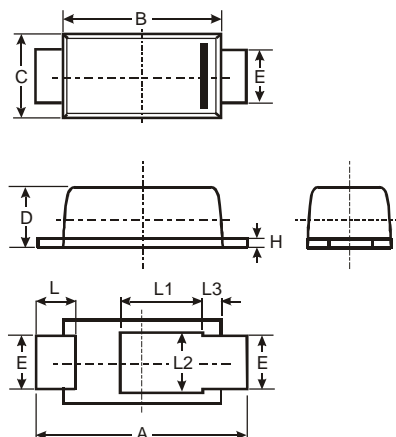
Notes: 5. Device mounted on 1" x 1", FR-4 PCB; 2 oz. Cu pad layout as shown on Diodes Inc. suggested pad layout document AP02001.pdf at <http://www.diodes.com>.

6. Theoretical R<sub>θJS</sub> calculated from the top center of the die straight down to the PCB/cathode tab solder junction.

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



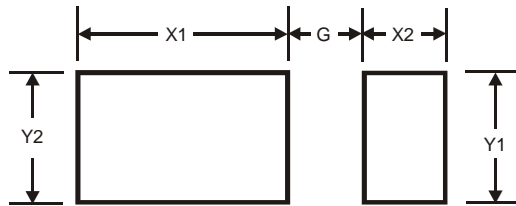
**Package Outline Dimensions**



POWERDI <sup>®</sup> 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			

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## Suggested Pad Layout



Dimensions	Value (in mm)
<b>G</b>	1.0
<b>X1</b>	2.2
<b>X2</b>	0.9
<b>Y1</b>	1.4
<b>Y2</b>	1.4

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