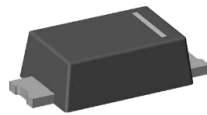


## Features

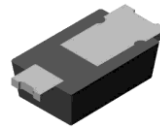
- Planar Die Construction
- Ultra-Small Surface Mount Package (PowerDI<sup>®</sup>)
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

## Mechanical Data

- Case: PowerDI323 (Type B)
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 <sup>Ⓔ</sup>
- Polarity: Cathode Band
- Marking Information: See Below
- Ordering Information: See Below
- Weight: 0.005 grams (Approximate)



Top View



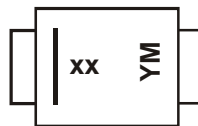
Bottom View

## Ordering Information (Note 4)

Device	Packaging	Shipping
(Type Number)-7*	PowerDI323 (Type B)	3000/Tape & Reel

- Note:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) 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. Package type was changed from PowerDI323 to PowerDI323 (Type B) since date code 1643.
- \*Add "-7" to the appropriate type number in Electrical Characteristics Table from Page 2. Example: 6.2V Zener = PD3Z284C6V2-7.

## Marking Information



xx = Product Type Marking Code  
(See Electrical Characteristics Table)  
YM = Date Code Marking  
Y = Year (ex. D = 2016)  
M = Month (ex. 9 = September)

### Date Code Key

Year	2006	2007	2008	...	2016	2017	2018	2019	2020	2021
Code	T	U	V	...	D	E	F	G	H	I

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

Characteristic	Symbol	Value	Unit
Forward Voltage @ I <sub>F</sub> = 10mA @ I <sub>F</sub> = 100mA	V <sub>F</sub>	0.9 1.1	V

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P <sub>D</sub>	500	mW
Thermal Resistance, Junction to Ambient Air (Note 5)	R <sub>θJA</sub>	250	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

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

Type Number	Marking Code	Zener Voltage Range (Note 6)				Maximum Zener Impedance (Note 7)			Maximum Reverse Current (Note 6)		Temperature Coefficient of Zener Voltage @ I <sub>ZT</sub> = 5mA mV/°C	
		V <sub>Z</sub> @ I <sub>ZT</sub>			I <sub>ZT</sub>	Z <sub>ZT</sub> @ I <sub>ZT</sub>	Z <sub>ZK</sub> @ I <sub>ZK</sub>	I <sub>ZK</sub>	I <sub>R</sub>	V <sub>R</sub>	Min	Max
		Nom (V)	Min (V)	Max (V)	(mA)	Ω	mA	μA	V			
PD3Z284C2V4	06	2.4	2.20	2.60	5	100	400	1.0	50	1.0	-3.5	0
PD3Z284C2V7	08	2.7	2.5	2.9	5	100	450	1.0	20	1.0	-3.5	0
PD3Z284C3V0	0A	3.0	2.8	3.2	5	95	500	1.0	10	1.0	-3.5	0
PD3Z284C3V3	0B	3.3	3.1	3.5	5	95	500	1.0	5	1.0	-3.5	0
PD3Z284C3V6	0C	3.6	3.4	3.8	5	90	500	1.0	5	1.0	-3.5	0
PD3Z284C3V9	0D	3.9	3.7	4.1	5	90	500	1.0	3	1.0	-3.5	0
PD3Z284C4V3	0E	4.3	4.0	4.6	5	90	600	1.0	3	1.0	-3.5	0
PD3Z284C4V7	0F	4.7	4.4	5.0	5	80	500	1.0	3	2.0	-3.5	0.2
PD3Z284C5V1	Z0G, 0G	5.1	4.8	5.4	5	60	480	1.0	2	2.0	-2.7	1.2
PD3Z284C5V6	Z0H, 0H	5.6	5.2	6.0	5	40	400	1.0	1	2.0	-2.0	2.5
PD3Z284C6V2	Z0K, 0K	6.2	5.8	6.6	5	10	150	1.0	3	4.0	0.4	3.7
PD3Z284C6V8	Z0L, 0L	6.8	6.4	7.2	5	15	80	1.0	2	4.0	1.2	4.5
PD3Z284C7V5	Z0M, 0M	7.5	7.0	7.9	5	10	80	1.0	1	5.0	2.5	5.3
PD3Z284C8V2	Z0N, 0N	8.2	7.7	8.7	5	10	80	1.0	0.7	5.0	3.2	6.2
PD3Z284C9V1	Z0P, 0P	9.1	8.5	9.6	5	10	100	1.0	0.5	6.0	3.8	7.0
PD3Z284C10	Z0Q, 0Q	10	9.4	10.6	5	10	150	1.0	0.2	7.0	4.5	8.0
PD3Z284C11	Z0R, 0R	11	10.4	11.6	5	10	150	1.0	0.1	8.0	5.4	9.0
PD3Z284C12	Z0S, 0S	12	11.4	12.7	5	10	150	1.0	0.1	8.0	6.0	10.0
PD3Z284C13	0T	13	12.4	14.1	5	10	170	1.0	0.1	8.0	7.0	11.0
PD3Z284C15	0V	15	13.8	15.6	5	15	200	1.0	0.1	10.5	9.2	13.0
PD3Z284C16	0W	16	15.3	17.1	5	20	200	1.0	0.1	11.2	10.4	14.0
PD3Z284C18	0Y	18	16.8	19.1	5	20	225	1.0	0.1	12.6	12.4	16.0
PD3Z284C20	0Z	20	18.8	21.2	5	20	225	1.0	0.1	14.0	14.4	18.0
PD3Z284C22	11	22	20.8	23.3	5	25	250	1.0	0.1	15.4	16.4	20.0
PD3Z284C24	12	24	22.8	25.6	5	30	250	1.0	0.1	16.8	18.4	22.0
PD3Z284C27	14	27	25.1	28.9	2	40	250	0.5	0.1	18.9	21.4	25.3
PD3Z284C30	16	30	28.0	32.0	2	40	250	0.5	0.1	21.0	24.4	29.4
PD3Z284C33	17	33	31.0	35.0	2	40	275	0.5	0.1	23.1	27.4	33.4
PD3Z284C36	18	36	34.0	38.0	2	60	300	0.5	0.1	25.2	30.4	37.4
PD3Z284C39	19	39	37.0	41.0	2	75	300	0.5	0.1	27.3	33.4	41.2

Notes: 5. Part mounted on polyimide PC board with recommended pad layout, as per <http://www.diodes.com/package-outlines.html>.  
6. Short duration pulse test used to minimize self-heating effect.  
7. f = 1kHz.

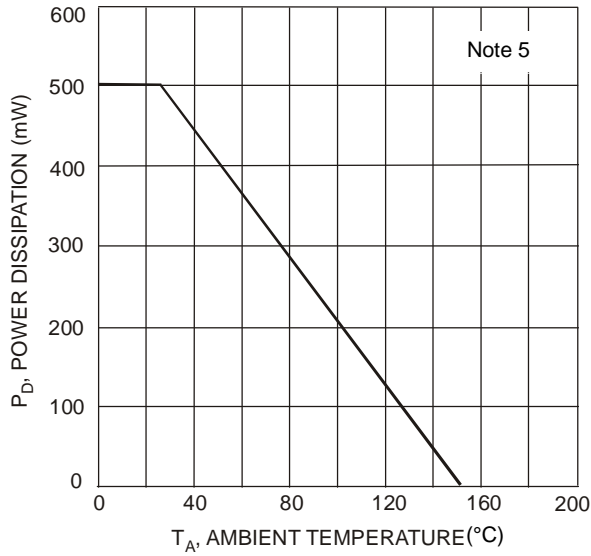


Fig. 1 Power Derating Curve

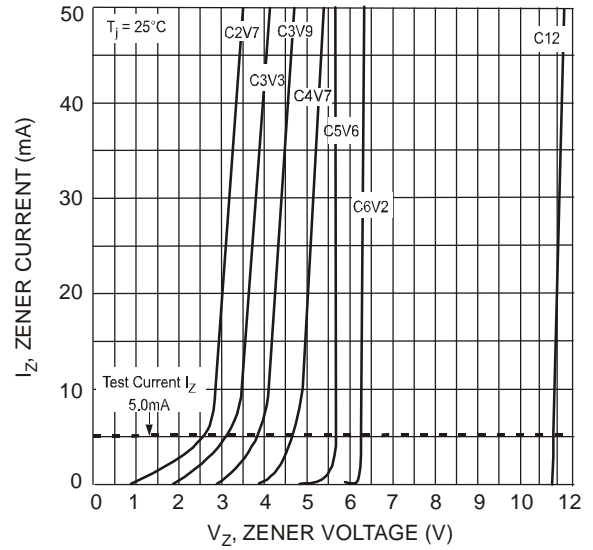


Fig. 2 Typical Zener Breakdown Characteristics

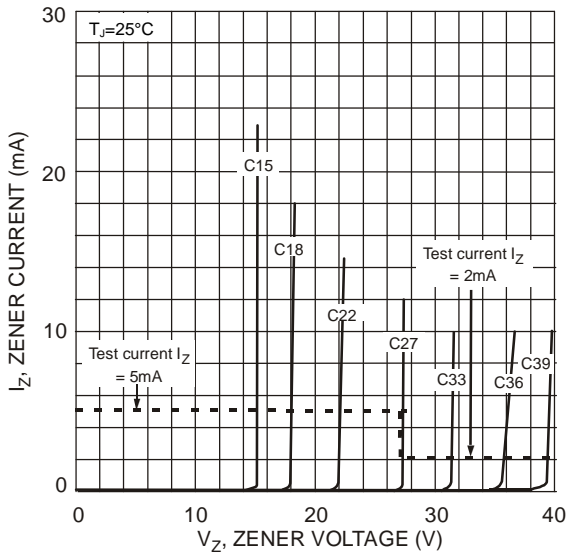


Fig. 3. Typical Zener Breakdown Characteristics

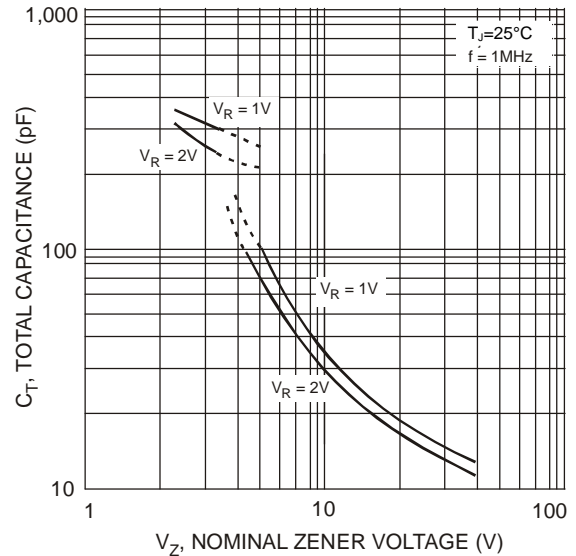
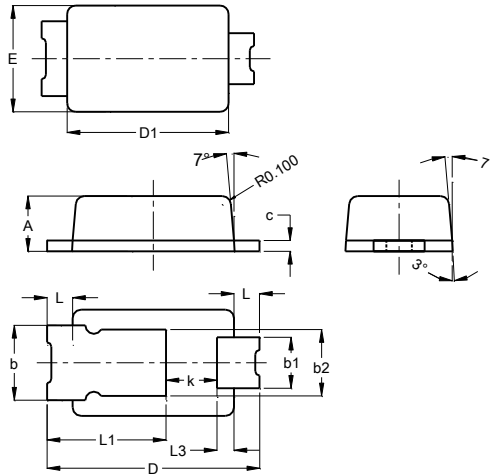


Fig. 4 Total Capacitance vs. Nominal Zener Voltage

## Package Outline Dimensions

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

### PowerDI323 (Type B)

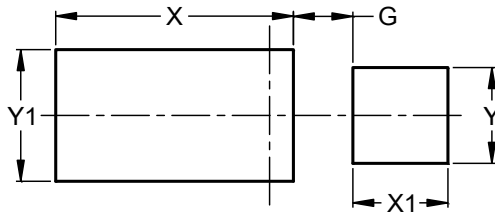


PowerDI323 (Type B)			
Dim	Min	Max	Typ
A	0.60	0.70	0.65
b	0.78	0.98	0.88
b1	0.50	0.70	0.60
b2	0.60	1.00	0.80
c	0.08	0.18	0.13
D	2.40	2.60	2.50
D1	1.85	1.95	1.90
E	1.20	1.30	1.25
k	0.40	0.80	0.60
L	0.20	0.40	0.30
L1	--	--	1.40
L3	--	--	0.20
All Dimensions in mm			

## Suggested Pad Layout

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

### PowerDI323 (Type B)



Dimensions	Value (in mm)
G	0.50
X	2.00
X1	0.80
Y	0.80
Y1	1.10

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