

Features

- Planar Die Construction
- Ultra-Small Surface Mount Package (PowerDI®)
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **The DIODES™ PD3Z284C5V1Q - PD3Z284C36Q are suitable for automotive applications requiring specific change control; these parts are AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.**

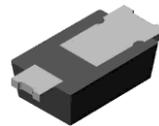
<https://www.diodes.com/quality/product-definitions/>

Mechanical Data

- Package: PowerDI323 (Type B)
- Package 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 (e3)
- Polarity: Cathode Band
- Marking Information: See Below
- Ordering Information: See Below
- Weight: 0.005 grams (Approximate)



Top View



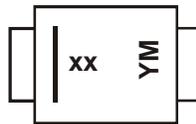
Bottom View

Ordering Information (Note 4)

Device	Package	Packing	
		Quantity	Carrier
PD3Z284C5V1Q-7	PowerDI323 (Type B)	3000	Tape & Reel
PD3Z284C16Q-7	PowerDI323 (Type B)	3000	Tape & Reel
PD3Z284C24Q-7	PowerDI323 (Type B)	3000	Tape & Reel
PD3Z284C36Q-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) & 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



xx = Product Type Marking Code
(See Electrical Characteristics Table)
YM = Date Code Marking
Y = Year (ex. J = 2022)
M = Month (ex. 9 = September)

Date Code Key

Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Code	I	J	K	L	M	N	O	P	R	S	T	U
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.)

Characteristic	Symbol	Value	Unit
Forward Voltage	@ I _F = 10mA	0.9	V
	@ I _F = 100mA	1.1	

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P _D	500	mW
Thermal Resistance, Junction to Ambient Air (Note 5)	R _{θJA}	250	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

Electrical Characteristics (@ T_A = +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 _{ZT} = 5mA mV/°C	
		V _Z @ I _{ZT}			I _{ZT}	Z _{ZT} @ I _{ZT}	Z _{ZK} @ I _{ZK}	I _{ZK}	I _R	V _R	Min	Max
		Nom (V)	Min (V)	Max (V)	(mA)	Ω	mA	μA	V			
PD3Z284C5V1Q	0G	5.1	4.8	5.4	5	60	480	1.0	2	2.0	-2.7	1.2
PD3Z284C16Q	0W	16	15.3	17.1	5	20	200	1.0	0.1	11.2	10.4	14.0
PD3Z284C24Q	12	24	22.8	25.6	5	30	250	1.0	0.1	16.8	18.4	22.0
PD3Z284C36Q	18	36	34.0	38.0	2	60	300	0.5	0.1	25.2	30.4	37.4

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

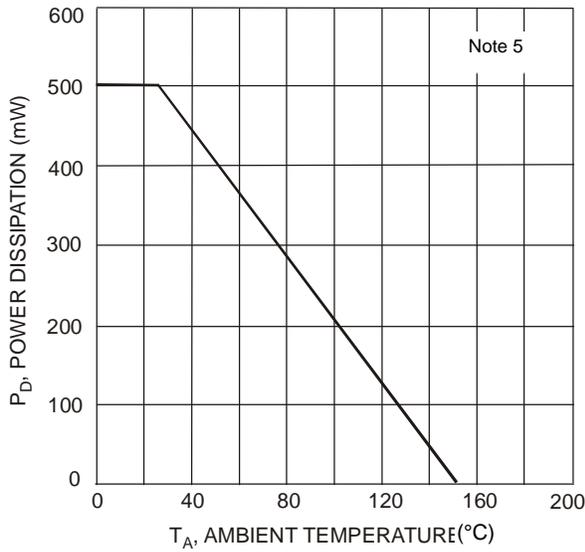


Fig. 1 Power Derating Curve

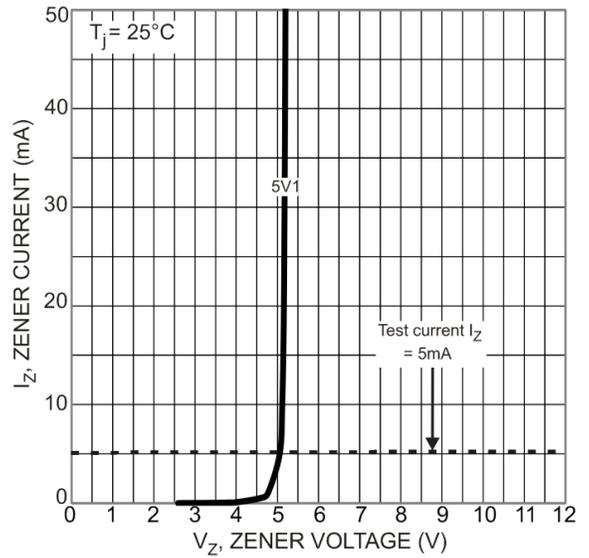


Fig. 2 Typical Zener Breakdown Characteristics

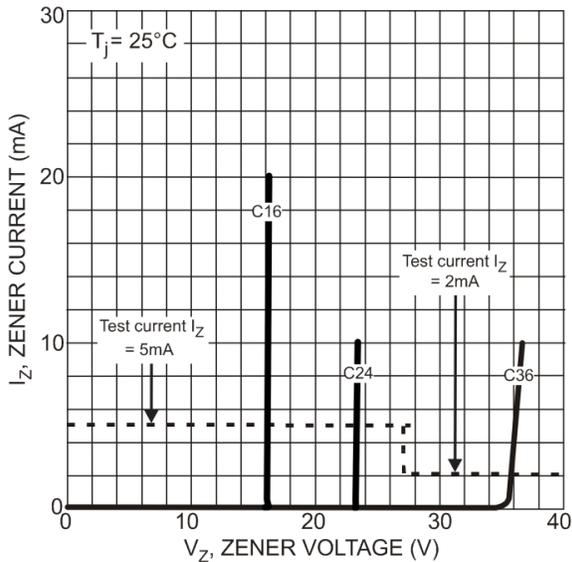


Fig. 3 Typical Zener Breakdown Characteristics

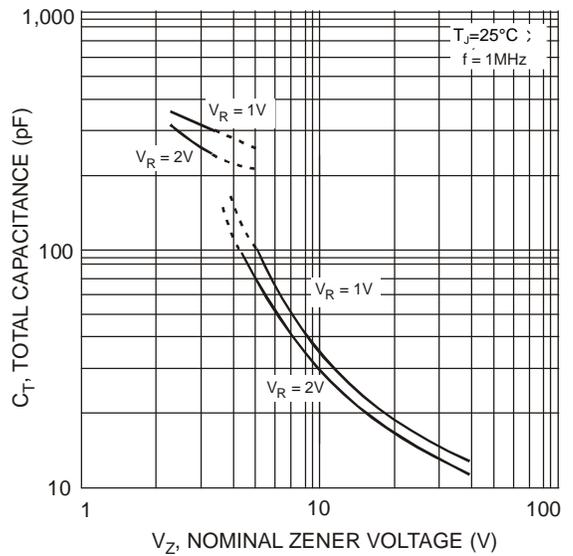
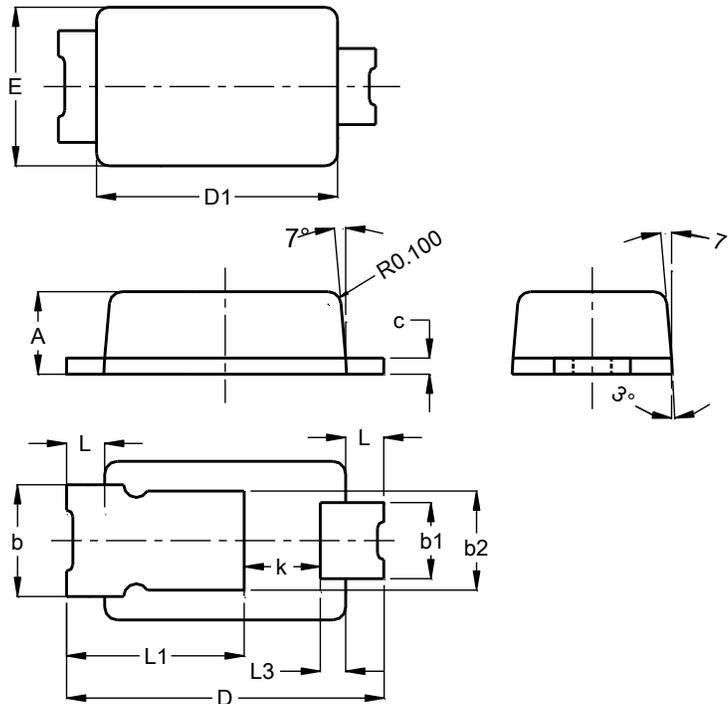


Fig. 4 Total Capacitance vs. Nominal Zener Voltage

Package Outline Dimensions

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

PowerDI323 (Type B)

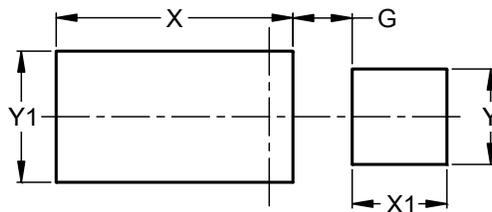


PowerDI323 (Type B)			
Dim	Min	Max	Typ
A	0.60	0.70	0.65
b	0.78	0.98	0.88
b1	0.50	0.70	0.60
b2	0.60	1.00	0.80
c	0.08	0.18	0.13
D	2.40	2.60	2.50
D1	1.85	1.95	1.90
E	1.20	1.30	1.25
k	0.40	0.80	0.60
L	0.20	0.40	0.30
L1	--	--	1.40
L3	--	--	0.20
All Dimensions in mm			

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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