Lead-free Green

PD3Z284C2V4 - PD3Z284C39

0.5W SURFACE MOUNT ZENER DIODE
PowerDI®323

Features

- Planar Die Construction
- Ultra-Small Surface Mount Package
- **Lead Free By Design, RoHS Compliant (Note 1)**
- **"Green" Molding Compound (No Br, Sb)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: PowerDI323
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- 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

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

Note: 1. No purposefully added lead.

*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. T = 2006)
M = Month (ex. 9 = September)

Date Code Key

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Code	T	U	V	W	X	Y	Z	A	B	C

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 @ I_F = 100mA	V_F	0.9 1.1	V

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 2)	P_D	500	mW
Thermal Resistance, Junction to Ambient Air (Note 2)	$R_{\theta JA}$	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 3)				Maximum Zener Impedance (Note 4)			Maximum Reverse Current (Note 3)		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		
		Nom (V)	Min (V)	Max (V)	(mA)	Ω		mA	uA	V	Min	Max
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: 2. Part mounted on polymide PC board with recommended pad layout, as per http://www.diodes.com/datasheets/ap02001.pdf.
3. Short duration pulse test used to minimize self-heating effect.
4. f = 1kHz.

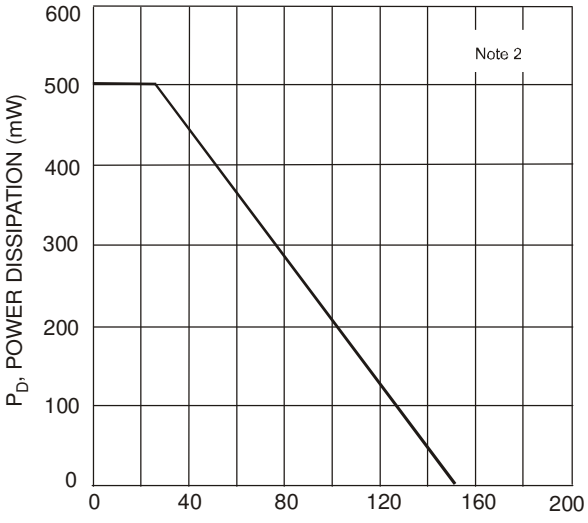


Fig. 1 Power Derating Curve

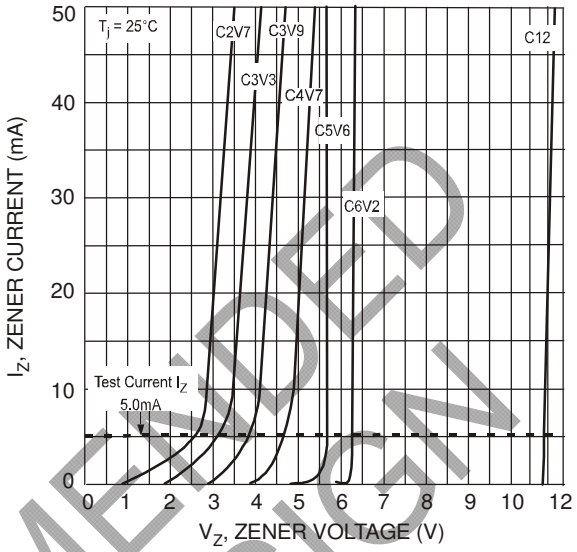


Fig. 2 Typical Zener Breakdown Characteristics

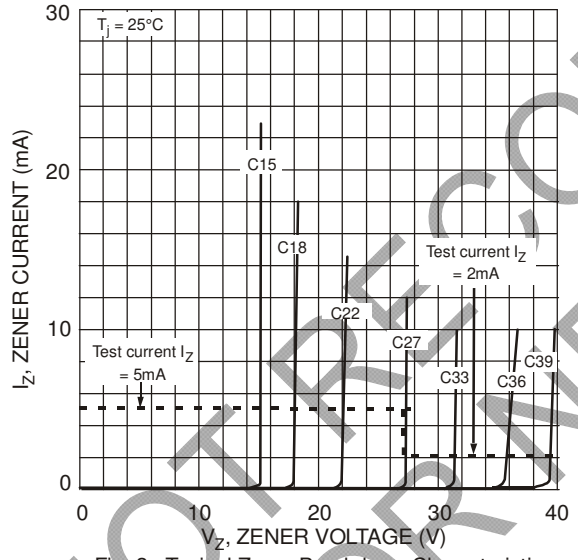


Fig. 3. Typical Zener Breakdown Characteristics

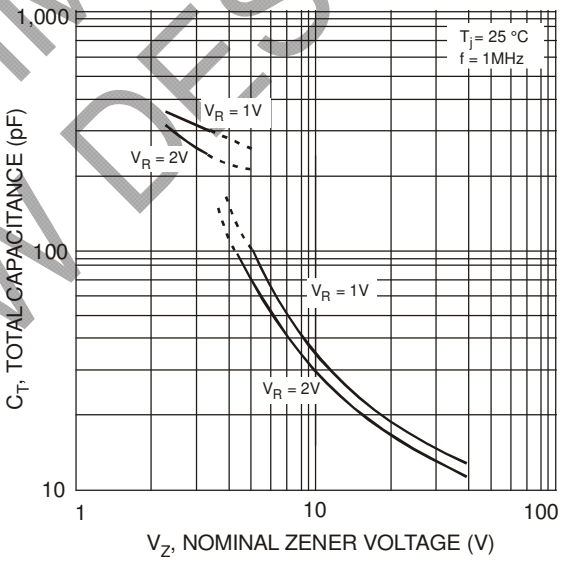
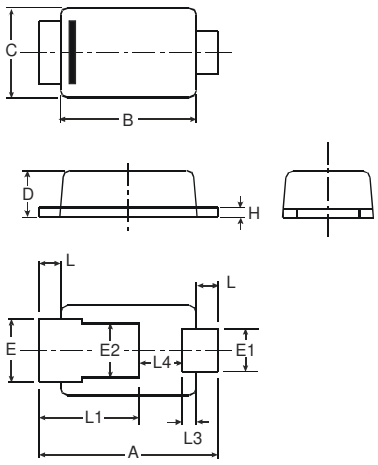


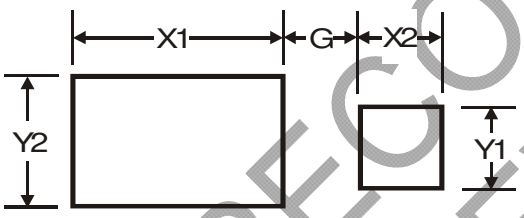
Fig. 4 Total Capacitance vs. Nominal Zener Voltage

Package Outline Dimensions



PowerDI®323			
Dim	Min	Max	Typ
A	2.40	2.60	2.50
B	1.85	1.95	1.90
C	1.20	1.30	1.25
D	0.60	0.70	0.65
E	0.78	0.98	0.88
E1	0.50	0.70	0.60
E2	0.60	1.00	0.80
H	0.08	0.18	0.13
L	0.20	0.40	0.30
L1	—	—	1.40
L3	—	—	0.20
L4	0.40	0.80	0.60
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
G	0.5
X1	2.0
X2	0.8
Y1	0.8
Y2	1.1

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