GDZ2V7LP3 - GDZ24LP3

ULTRA-SMALL LEADLESS SURFACE MOUNT ZENER DIODE

Features

- Ultra-Small Leadless Surface Mount Package (0.6 x 0.3mm)
- Ultra-Low Profile Package (0.3mm)
- Ideally Suited for Automated Assembly Processes
- Low Leakage Current, Suitable for Battery-Powered Applications
- **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: X3-DFN0603-2
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Bar
- Terminals: Finish—Matte Tin over Copper Leadframe. Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.2 mg (Approximate)

X3-DFN0603-2

Top View

Bottom View

1
Cathode

2
Anode

Ordering Information (Note 4)

Part Number	Case	Packaging
(Type Number)-7*	X3-DFN0603-2	10,000/Tape & Reel

*Add "-7" to the appropriate type number in Electrical Characteristics Table. Example: 6.2V Zener = GDZ6V2LP3-7.

Notes:
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 http://www.diodes.com/products/packages.html.

Marking Information

Pin 1

xx = Product Type Marking Code
(See Electrical Characteristics Table)
Line Denotes Cathode Side

Thermal Characteristics

Characteristic		Symbol	Value	Unit
Power Dissipation (Note 5)	T_A = +25°C	P_D	250	mW
Thermal Resistance, Junction to Ambient Air (Note 5)	T_A = +25°C	$R_{\Theta JA}$	500	°C/W
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Type Number	Marking Code	Zener Voltage Range (Note 6)				Reverse Current (Note 6)		
		V_Z @ I_{ZT}			I_{ZT}	I_R		@ V_R
		Nom (V)	Min (V)	Max (V)	mA	Typical (µA)	Max (µA)	V
GDZ2V7LP3	JB	2.7	2.57	2.84	5	—	20	1.0
GDZ3V0LP3	JC	3.0	2.85	3.15	5	—	10	1.0
GDZ3V3LP3	JD	3.3	3.14	3.47	5	—	10	1.0
GDZ3V6LP3	KU	3.6	3.41	3.79	5	—	10	1.0
GDZ3V9LP3	KJ	3.9	3.740	4.160	5	—	5	1.0
GDZ4V1LP3	KY	4.1	3.93	4.37	5	—	5.0	1.0
GDZ4V3LP3	KK	4.3	4.08	4.53	5	—	5.0	1.0
GDZ4V7LP3	KL	4.7	4.420	4.900	5	—	2.0	1.0
GDZ5V1LP3	KM	5.1	4.840	5.370	5	—	0.2	2.0
GDZ5V6LP3	KN	5.6	5.310	5.920	5	— 90	1.0 175	2.5 4.75
GDZ6V0LP3	KW	6.0	5.676	6.324	5	—	1.0	2.8
GDZ6V2LP3	KO	6.2	5.860	6.530	5	—	1.0	3.0
GDZ6V8LP3	KT	6.8	6.470	7.140	5	—	0.5	3.5
GDZ7V5LP3	KQ	7.5	7.060	7.840	5	—	0.5	4.0
GDZ8V2LP3	KX	8.2	7.760	8.640	5	—	0.5	5.0
GDZ9V1LP3	JE	9.1	8.65	9.56	5	—	0.5	6.0
GDZ10LP3	JF	10	9.50	10.50	5	—	0.2	7.0
GDZ11LP3	JG	11	10.45	11.55	5	—	0.1	8.0
GDZ12LP3	JH	12	11.40	12.60	5	—	0.1	8.0
GDZ13LP3	JI	13	12.35	13.65	5	—	0.1	8.0
GDZ15LP3	JJ	15	14.25	15.75	5	—	0.1	10.5
GDZ16LP3	JK	16	15.20	16.80	5	—	0.1	11.2
GDZ18LP3	JL	18	17.10	18.90	5	—	0.1	12.6
GDZ20LP3	JM	20	19.00	21.00	5	—	0.1	14.0
GDZ22LP3	JN	22	20.90	23.10	5	—	0.1	15.4
GDZ24LP3	JO	24	22.80	25.20	5	—	0.1	16.8

Notes: 5. Device mounted on FR-4 PCB with minimum recommended pad layout, as shown in Diodes Incorporated's Suggested Pad Layout document, which can be found on our website at http://www.diodes.com.
6. Short duration pulse test used to minimize self-heating effect.

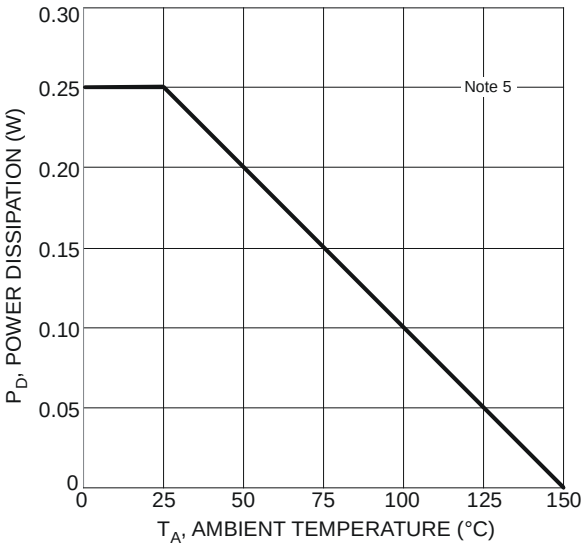


Figure 1 Power Derating Curve

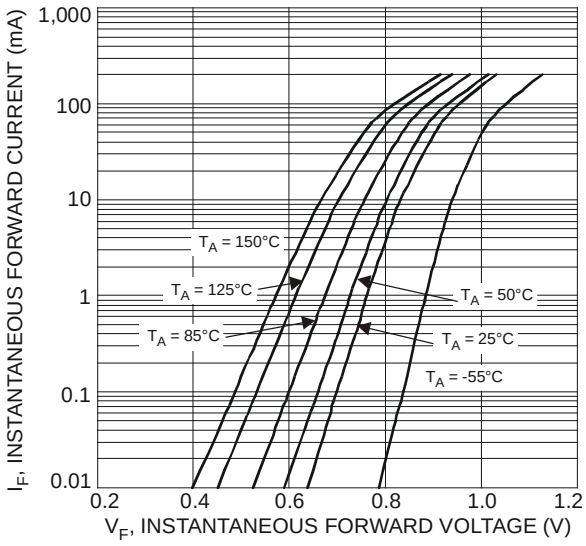


Figure 2 Typical Forward Characteristics

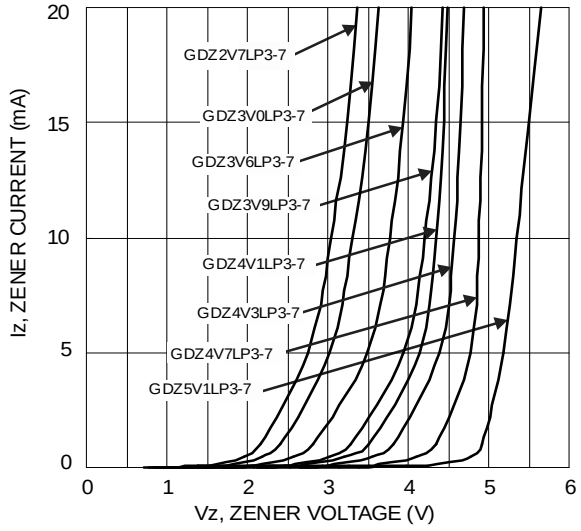


Figure 3 Typical Zener Breakdown Characteristics, GDZ2V7LP3 – GDZ5V1LP3

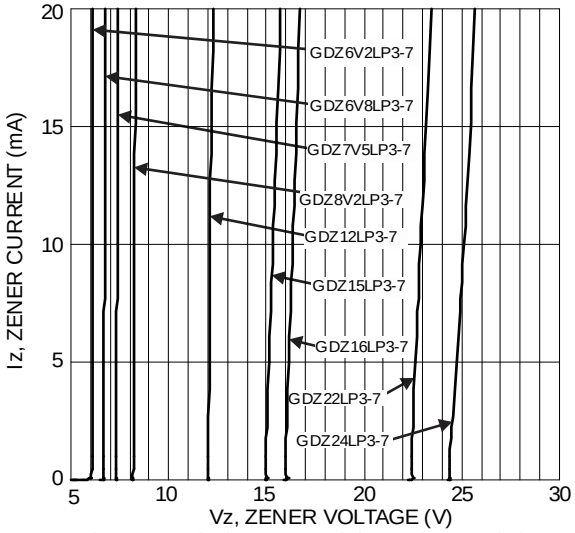


Figure 4 Typical Zener Breakdown Characteristics, GDZ6V2LP3 – GDZ24LP3

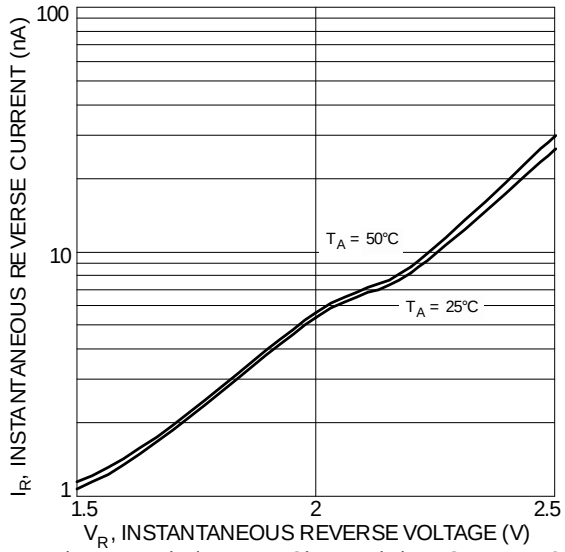


Figure 5 Typical Reverse Characteristics - GDZ5V1LP3

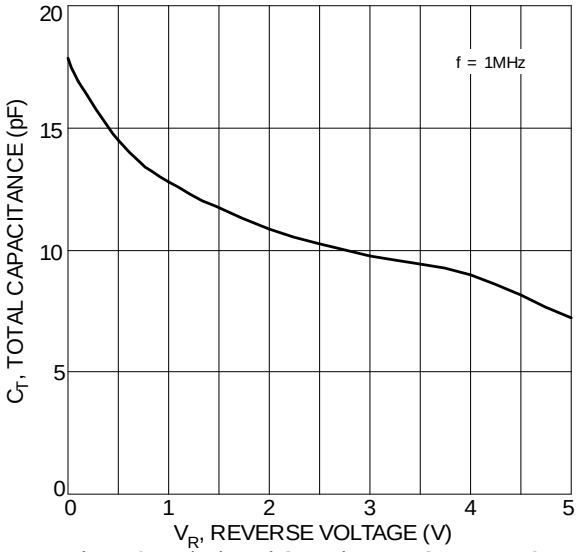


Figure 6 Typical Total Capacitance – GDZ5V1LP3

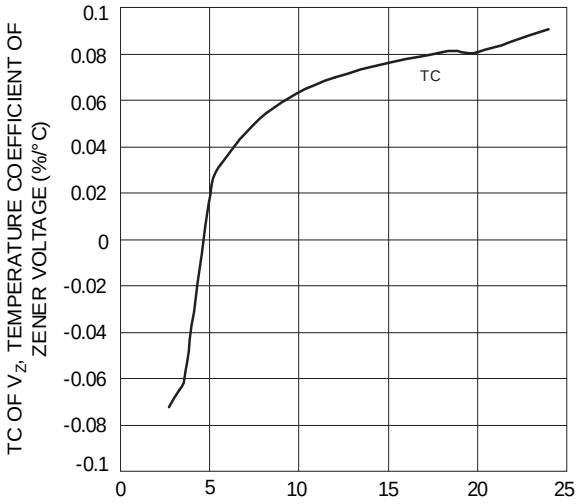
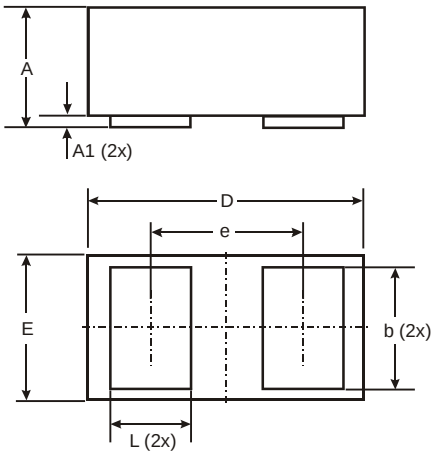


Figure 7 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage

Package Outline Dimensions

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

X3-DFN0603-2

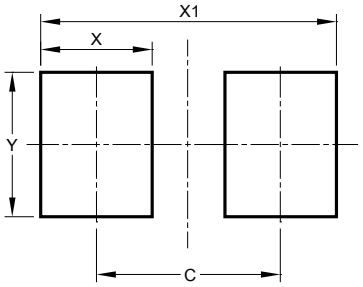


X3-DFN0603-2			
Dim	**Min**	**Max**	**Typ**
A	0.27	0.35	0.30
A1	0.00	0.03	0.02
b	0.19	0.29	0.24
D	0.595	0.645	0.62
E	0.295	0.345	0.32
e	-	-	0.355
L	0.14	0.24	0.19
All Dimensions in mm			

Suggested Pad Layout

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

X3-DFN0603-2



Dimensions	Value (in mm)
C	0.380
X	0.230
X1	0.610
Y	0.300

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