

## Features

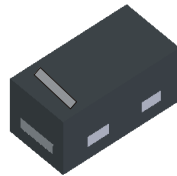
- Ultra-Small Leadless Surface Mount Package (0.6 x 0.3mm)
- Ultra-Low Profile Package (0.3mm)
- Ideally Suited for Automated Assembly Processes
- Low Leakage Current, Suitable for Battery-Powered Applications
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **The GDZ6V2LP3Q - GDZ12LP3Q are suitable for automotive applications requiring specific change control; these parts are AEC-Q101 qualified, PPAP capable, and manufactured in IATF16949 certified facilities.**

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

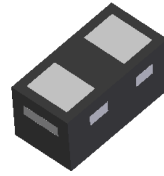
## Mechanical Data

- Package: X3-DFN0603-2
- Package 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
- Weight: 0.2 mg (Approximate)

X3-DFN0603-2



Top View



Bottom View



## Ordering Information (Note 4)

| Part Number      | Compliance | Package      | Packing |             |
|------------------|------------|--------------|---------|-------------|
|                  |            |              | Qty.    | Carrier     |
| (Type Number)-7* | Automotive | X3-DFN0603-2 | 10,000  | Tape & Reel |

\*Add "-7" to the appropriate type number in the Electrical Characteristics Table. Example: 6.2V Zener = GDZ6V2LP3Q-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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>

## 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) $T_A = +25^\circ\text{C}$                           | $P_D$           | 250         | mW                 |
| Thermal Resistance, Junction to Ambient Air (Note 5) $T_A = +25^\circ\text{C}$ | $R_{\theta JA}$ | 500         | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range  | $T_J, T_{STG}$  | -55 to +150 | $^\circ\text{C}$   |

### Electrical Characteristics (@ $T_A = +25^\circ\text{C}$ , 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       | Max ( $\mu\text{A}$ )    | V       |
| GDZ6V2LP3Q  | KO           | 6.2                          | 5.860   | 6.530   | 5        | 1.0                      | 3.0     |
| GDZ6V8LP3Q  | KT           | 6.8                          | 6.470   | 7.140   | 5        | 0.5                      | 3.5     |
| GDZ9V1LP3Q  | JE           | 9.1                          | 8.65    | 9.56    | 5        | 0.5                      | 6.0     |
| GDZ12LP3Q   | JH           | 12                           | 11.40   | 12.60   | 5        | 0.1                      | 8.0     |

- 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/products/packages.html>.
  6. Short duration pulse test used to minimize self-heating effect.

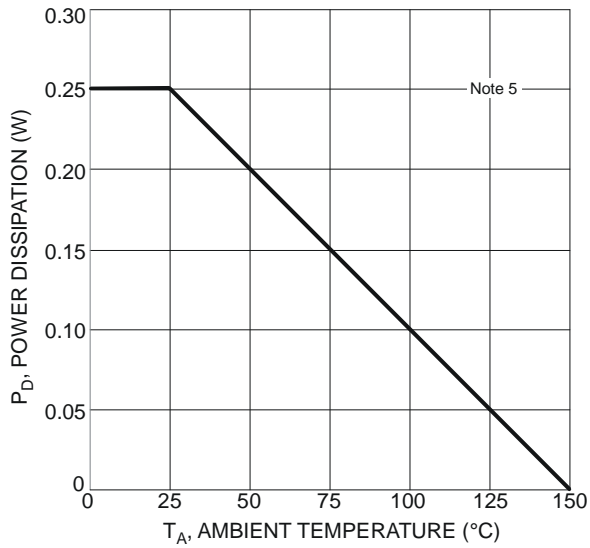


Figure 1 Power Derating Curve

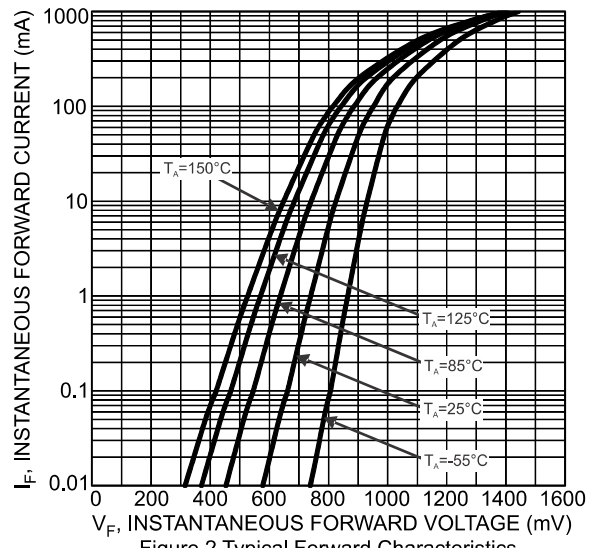


Figure 2 Typical Forward Characteristics

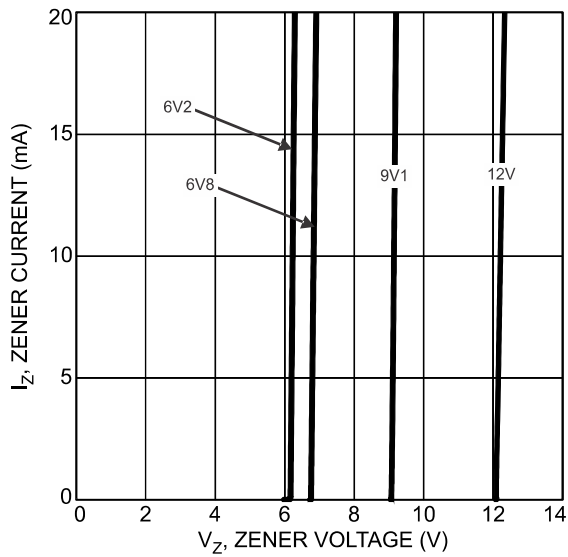
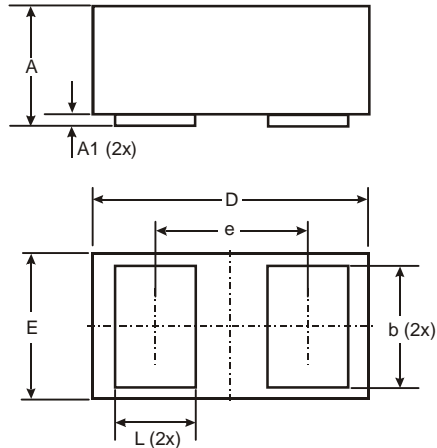


Figure 3 Typical Zener Breakdown Characteristics

## Package Outline Dimensions

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

### X3-DFN0603-2

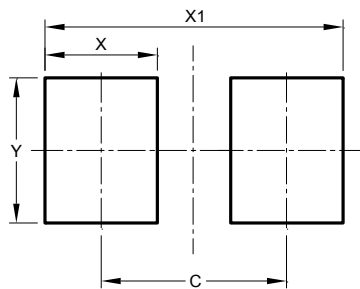


| X3-DFN0603-2         |       |       |       |
|----------------------|-------|-------|-------|
| Dim                  | Min   | Max   | Typ   |
| A                    | 0.27  | 0.35  | 0.30  |
| A1                   | 0.00  | 0.03  | 0.02  |
| b                    | 0.19  | 0.29  | 0.24  |
| D                    | 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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