



# TPD6V8LP

## SURFACE MOUNT ZENER DIODE

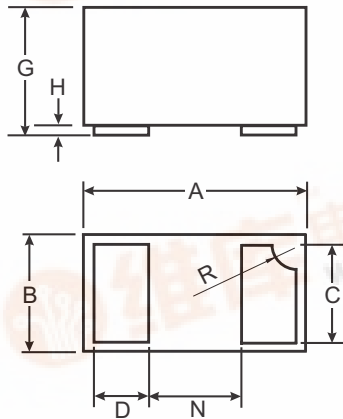
NEW PRODUCT

### Features

- Planar Die Construction
- Ultra-Small Leadless Surface Mount Package
- Ideally Suited for Automated Assembly Processes
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**

### Mechanical Data

- Case: DFN1006-2
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: Cathode Dot
- Terminals: Finish — NiPdAu annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Marking & Type Code Information: 9C
- Ordering Information: See Last Page
- Weight: 0.001 grams



DFN1006-2			
Dim	Min	Max	Typ
A	0.95	1.05	1.00
B	0.55	0.65	0.60
C	0.45	0.55	0.50
D	0.20	0.30	0.25
G	0.47	0.53	0.50
H	0	0.05	0.03
N	—	—	0.40
R	0.05	0.15	0.10

All Dimensions in mm

### Maximum Ratings @ T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Forward Voltage (Note 3) @ I <sub>F</sub> = 10mA	V <sub>F</sub>	0.9	V
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>STG</sub>	-65 to +150	°C
Peak Pulse Power (tp = 8 x 20 μs) (Note 4)	P <sub>pk</sub>	85	W
Peak Pulse Current (tp = 8 x 20 μs) (Note 4)	I <sub>pp</sub>	4.5	A
ESD Rating	V <sub>pp</sub>	Human Body Model	8 kV
		Machine Model	400 V
		IEC61000-4-2 Air Discharge	25 kV
		IEC61000-4-2 Contact Discharge	8 kV

- Notes:
1. No purposefully added lead.
  2. Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).
  3. Short duration pulse test used to minimize self-heating effect.
  4. Part mounted on FR-4 PC board with recommended pad layout, as per <http://www.diodes.com/datasheets/ap02001.pdf>.

### Thermal Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 4)	P <sub>d</sub>	250	mW
Thermal Resistance, Junction to Ambient Air (Note 4)	R <sub>θJA</sub>	500	°C/W



**Electrical Characteristics** @  $T_A = 25^\circ\text{C}$  unless otherwise specified

Characteristic	Symbol	Value	Unit
Reverse Standoff Voltage	$V_{RWM}$	5	V
Breakdown Voltage @ $I_T = 5\text{mA}$ (Note 5)		Minimum	6.4
		Maximum	7.2
Maximum Reverse Leakage @ $V_{RWM}$	$I_R$	0.5	$\mu\text{A}$
Maximum Clamping Voltage @ $I_{pp} = 4.5\text{A}$ ( $t_p = 8 \times 20\mu\text{s}$ )	$V_C$	19	V
Typical Total Capacitance ( $V_R = 0\text{V}$ , $f = 1\text{MHz}$ )	$C_T$	65	pF

Notes: 5. Short duration test pulse used to minimize self-heating effect.

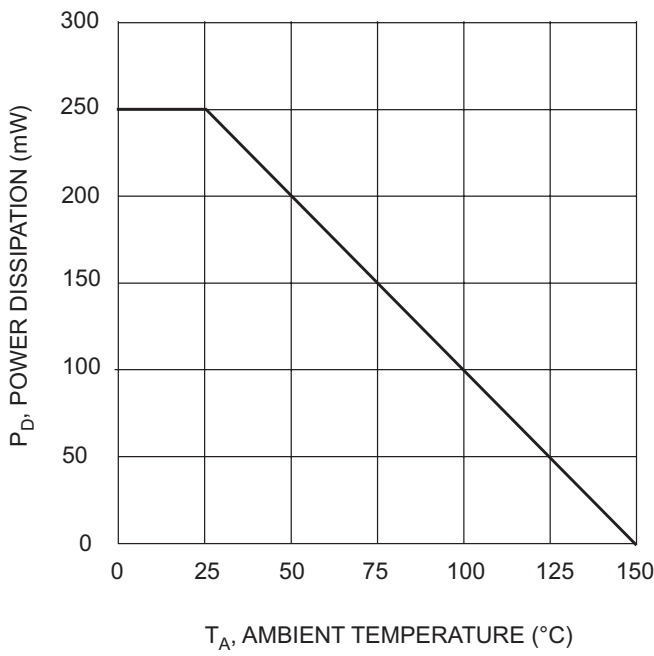


Fig. 1 Power Derating Curve

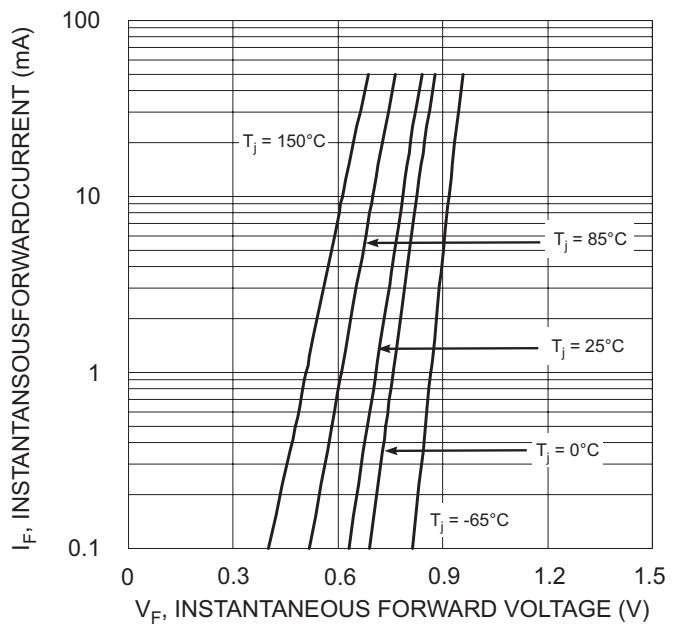


Fig. 2 Typical Forward Characteristics

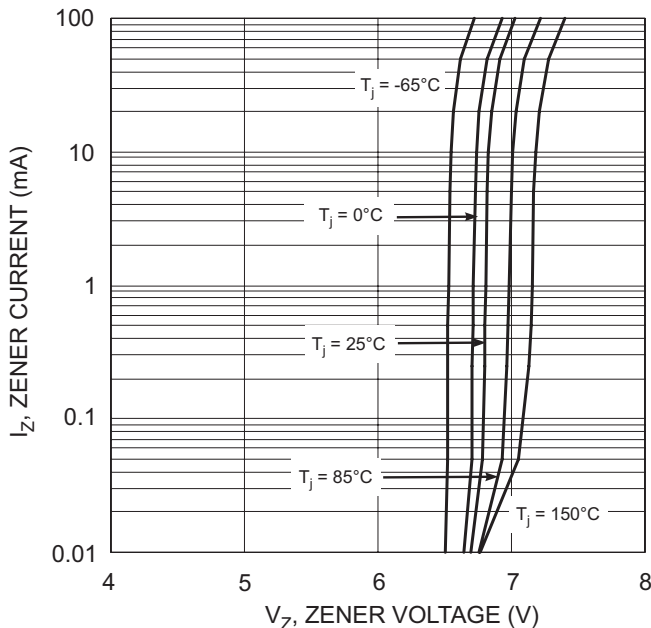


Fig. 3 Typical Zener Breakdown Characteristics

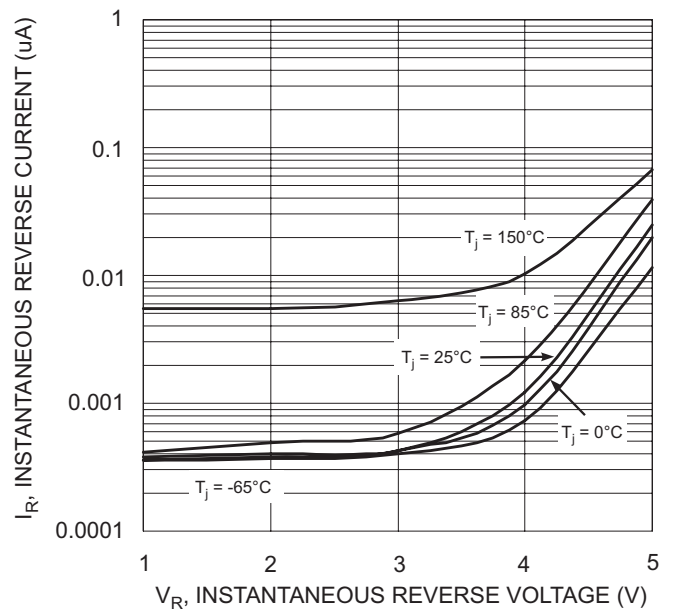


Fig. 4 Typical Reverse Characteristics

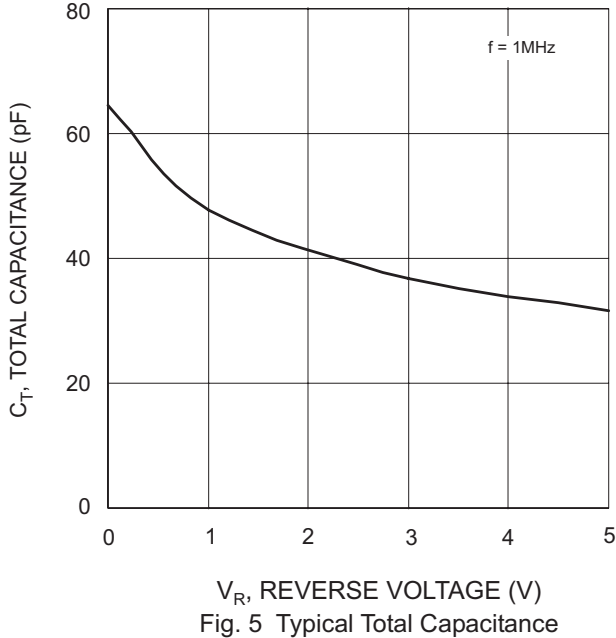


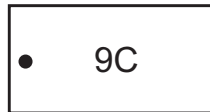
Fig. 5 Typical Total Capacitance

**Ordering Information** (Note 6)

Device	Packaging	Shipping
TPD6V8LP-7	DFN1006-2	3000/Tape & Reel

Notes: 6. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



9C = Product Type Marking Code, Dot Denotes Cathode Side

**IMPORTANT NOTICE**

Diodes, Inc. and its subsidiaries reserve the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes. Diodes, Inc. does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

**LIFE SUPPORT**

The products located on our website at [www.diodes.com](http://www.diodes.com) are not recommended for use in life support systems where a failure or malfunction of the component may directly threaten life or cause injury without the expressed written approval of Diodes Incorporated.