

**85W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR**
**Features**

- Planar Die Construction
- Ultra-Small Leadless Surface Mount Package
- Unidirectional
- Ideally Suited for Automated Assembly Processes
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**

**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-020D
- Terminal Connections: Cathode Dot
- Terminals: Finish — NiPdAu over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.001 grams (approximate)



Bottom View

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

Characteristic	Symbol	Value	Unit
Peak Pulse Power (tp = 8 x 20 μs) (Note 4) (See figure 6)	P <sub>pk</sub>	85	W
Forward Voltage (Note 3) @ I <sub>F</sub> = 10mA	V <sub>F</sub>	0.9	V
Peak Pulse Current (tp = 8 x 20 μs) (Note 4) (See figure 6)	I <sub>pp</sub>	4.5	A
ESD Rating	Human Body Model	8	kV
	Machine Model	400	V
	IEC61000-4-2 Air Discharge	25	kV
	IEC61000-4-2 Contact Discharge	8	kV

**Thermal Characteristics**

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
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

**Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Reverse Standoff Voltage	V <sub>RWM</sub>	5	V
Breakdown Voltage @ I <sub>T</sub> = 5mA (Note 3)	V <sub>BR</sub>	6.4	V
		7.2	
Maximum Reverse Leakage @ V <sub>RWM</sub> (Note 3)	I <sub>R</sub>	0.5	μA
Maximum Clamping Voltage @ I <sub>pp</sub> = 4.5A (tp = 8x20μs) (See figure 6)	V <sub>C</sub>	19	V
Typical Total Capacitance (V <sub>R</sub> = 0V, f = 1MHz)	C <sub>T</sub>	65	pF

- 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>.

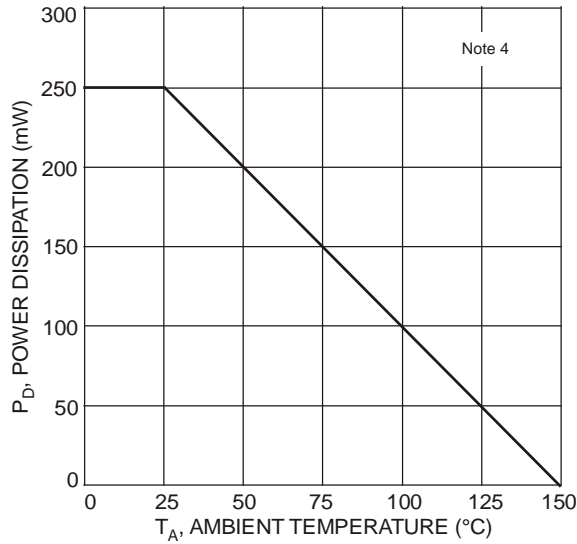


Fig. 1 Power Derating Curve

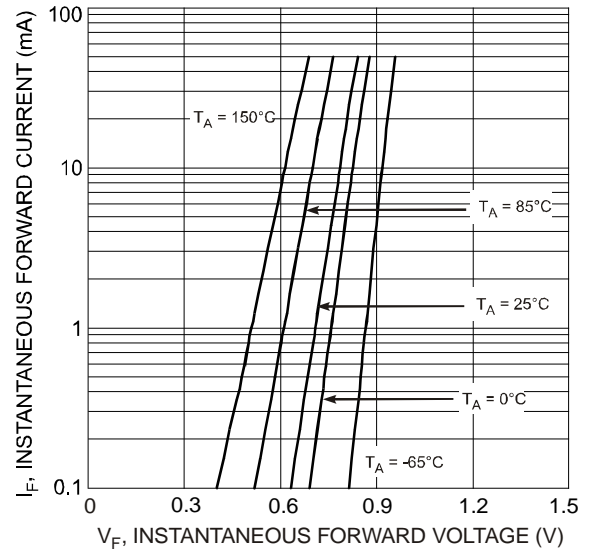


Fig. 2 Typical Forward Characteristics

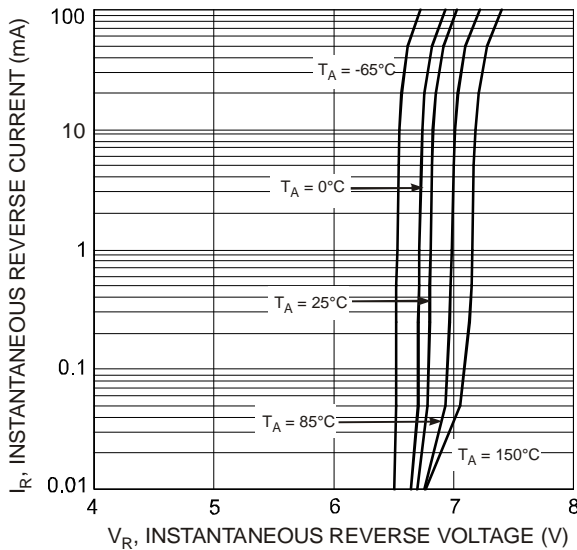


Fig. 3 Typical Breakdown Characteristics

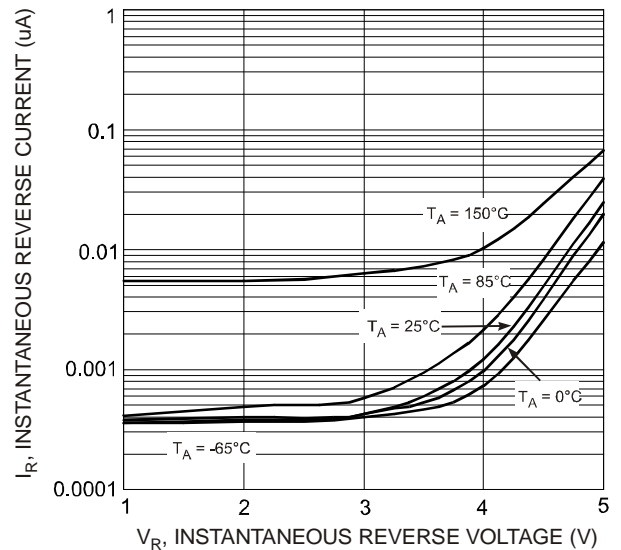


Fig. 4 Typical Low Current Reverse Characteristics

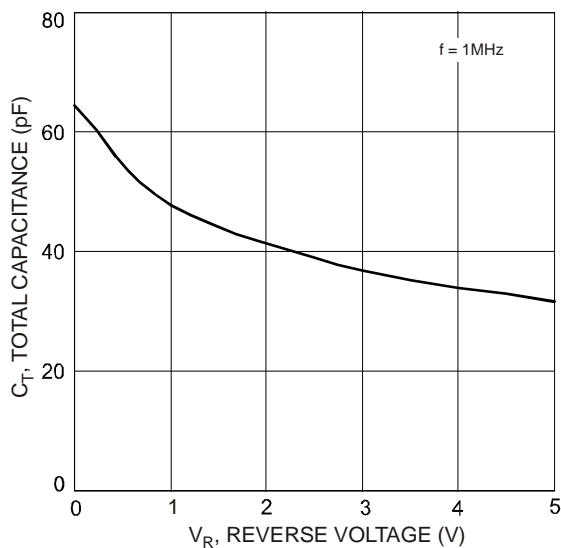


Fig. 5 Typical Total Capacitance vs. Reverse Voltage

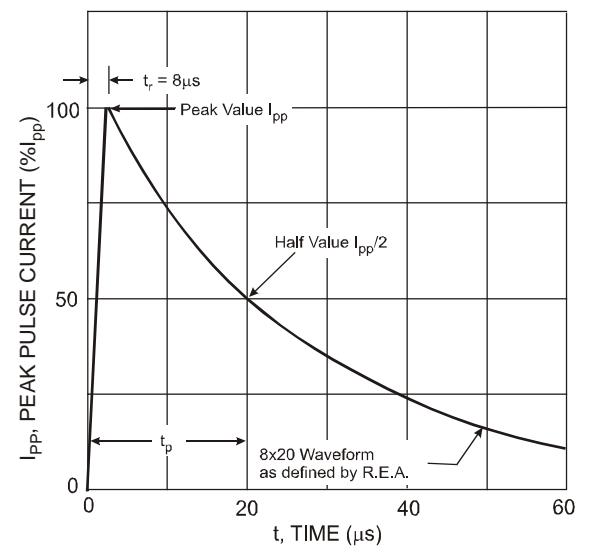


Fig. 6 Pulse Waveform

## Ordering Information (Note 5)

Part Number	Case	Packaging
TPD6V8LP-7	DFN1006-2	3000/Tape & Reel

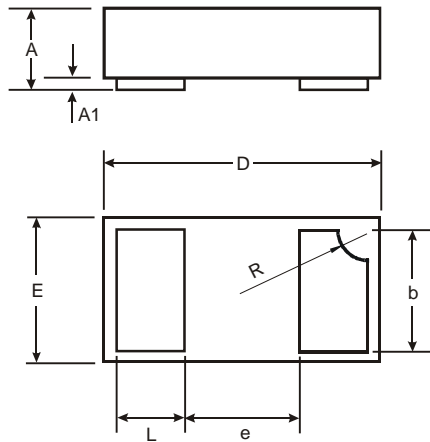
Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information

• 9C

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

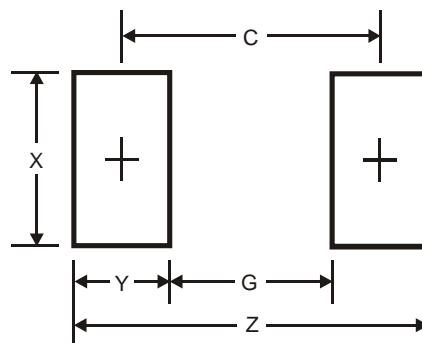
## Package Outline Dimensions



DFN1006-2			
Dim	Min	Max	Typ
A	0.47	0.53	0.50
A1	0	0.05	0.03
b	0.45	0.55	0.50
D	0.95	1.075	1.00
E	0.55	0.675	0.60
e	-	-	0.40
L	0.20	0.30	0.25
R	0.05	0.15	0.10

All Dimensions in mm

## Suggested Pad Layout



Dimensions	Value (in mm)
Z	1.1
G	0.3
X	0.7
Y	0.4
C	0.7

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