

## Features

- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- Low Capacitance
- Ultra-Small Surface Mount Package
- **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: X1-DFN1006-2
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Dot
- Terminals: Finish — NiPdAu annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 <sup>(@4)</sup>
- Weight: 0.001 grams (approximate)

X1-DFN1006-2



Top View



Bottom View

## Ordering Information (Note 4)

Device	Packaging	Shipping
SDM20U30LP-7	X1-DFN1006-2	3000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See <http://www.diodes.com> 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>.

## Marking Information



LM = Product Type Marking Code, Dot Denotes Cathode Side

**Maximum Ratings** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$		
Working Peak Reverse Voltage	$V_{RWM}$	30	V
DC Blocking Voltage	$V_R$		
RMS Reverse Voltage	$V_{R(\text{RMS})}$	21	V
Maximum (Peak) Forward Current	$I_{FM}$	200	mA
Peak Forward Surge Current 8.3ms Half Sine	$I_{FSM}$	1.0	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation	$P_D$	250	mW
Thermal Resistance, Junction to Ambient Air	$R_{\theta JA}$	400	°C/W
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +125	°C

**Electrical Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 5)	$V_{(BR)R}$	30	—	—	V	$I_R = 150\mu\text{A}$
Forward Voltage Drop	$V_F$	—	—	350 575	mV	$I_F = 20\text{mA}$ $I_F = 200\text{mA}$
Peak Reverse Current (Note 5)	$I_R$	—	—	150 30	$\mu\text{A}$	$V_R = 30\text{V}$ $V_R = 10\text{V}$
Total Capacitance	$C_T$	—	20	—	pF	$V_R = 0\text{V}$ , $f = 1.0\text{MHz}$

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

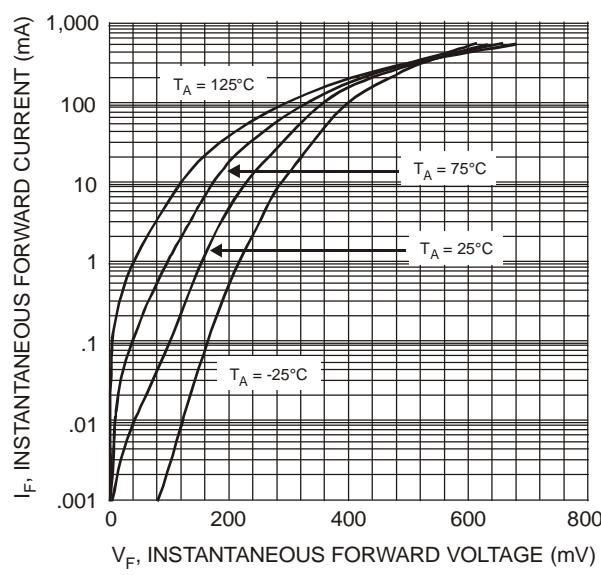


Fig. 1 Typical Forward Characteristics

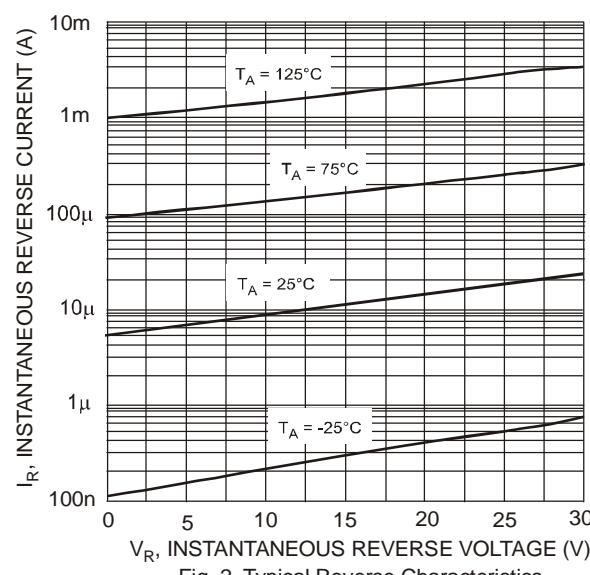


Fig. 2 Typical Reverse Characteristics

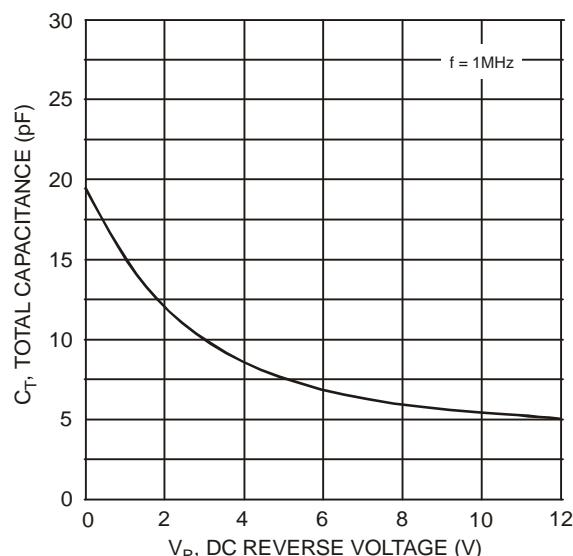


Fig. 3 Total Capacitance vs. Reverse Voltage

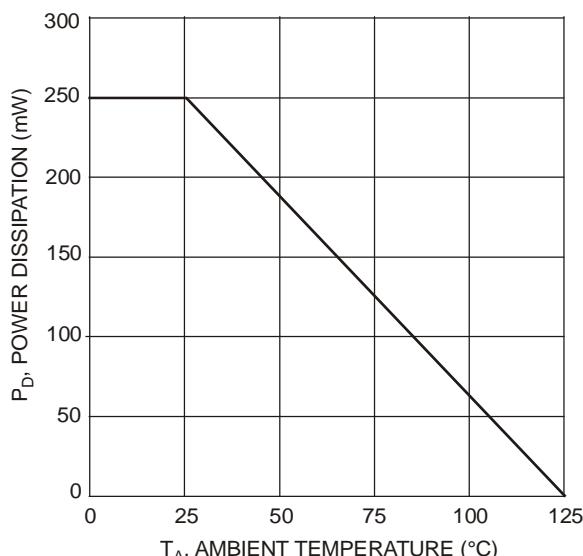
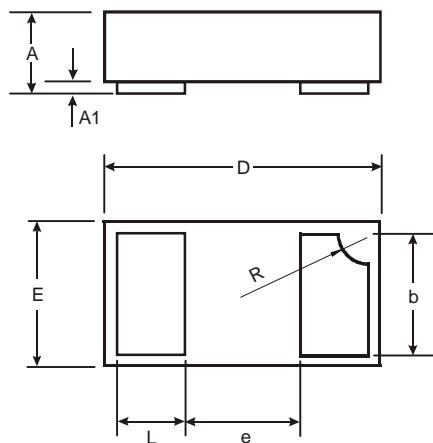


Fig. 4 Power Derating Curve

## Package Outline Dimensions

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.

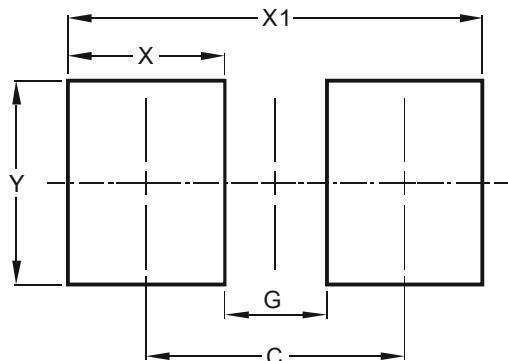


X1-DFN1006-2			
Dim	Min	Max	Typ
A	0.47	0.53	0.50
A1	0	0.05	0.03
b	0.45	0.55	0.50
D	0.95	1.075	1.00
E	0.55	0.675	0.60
e	-	-	0.40
L	0.20	0.30	0.25
R	0.05	0.15	0.10

All Dimensions in mm

## Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for latest version.



Dimensions	Value (in mm)
C	0.70
G	0.30
X	0.40
X1	1.10
Y	0.70

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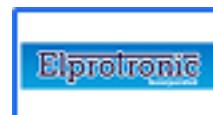
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