

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 @4
- 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) & 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

SDM20U30LP-7	<p>Top View Dot Denotes Cathode Side</p>	From date code 1527 (YYWW), this changed to: AB = Product Type Marking Code AB = LM or $\bar{L}M$	<p>Top View Bar Denotes Cathode Side</p>

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

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

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation	P_D	250	mW
Thermal Resistance, Junction to Ambient Air (Note 5)	$R_{\theta JA}$	400	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +125	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	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 6)	I_R	—	—	150 30	μA	$V_R = 30\text{V}$ $V_R = 10\text{V}$
Total Capacitance	C_T	—	20	—	pF	$V_R = 0\text{V}, f = 1.0\text{MHz}$
Reverse Recovery Time	t_{rr}	—	3	—	nS	$I_F = I_R = 10\text{mA}, I_{R(REC)} = 1\text{mA}, R_L = 100\Omega$

Notes: 5. Device mounted on FR-4 substrate PCB, with minimum recommended pad layout.
6. Short duration pulse test used to minimize self-heating effect.

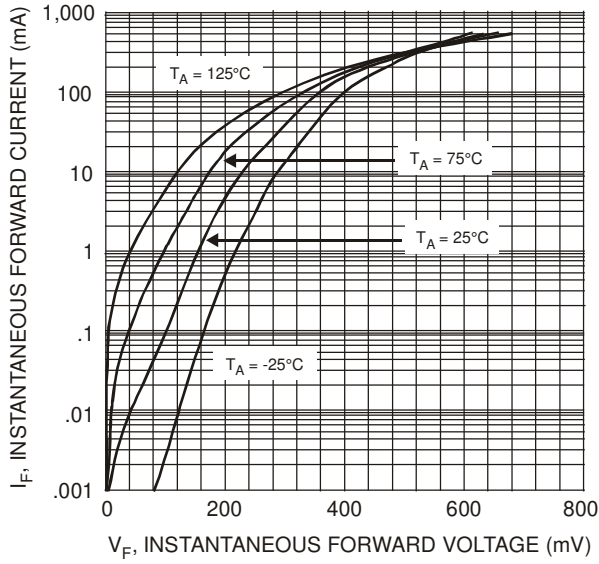


Fig. 1 Typical Forward Characteristics

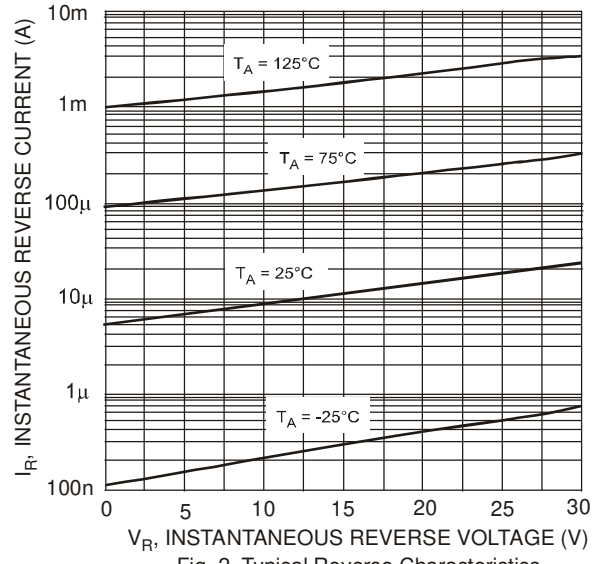


Fig. 2 Typical Reverse Characteristics

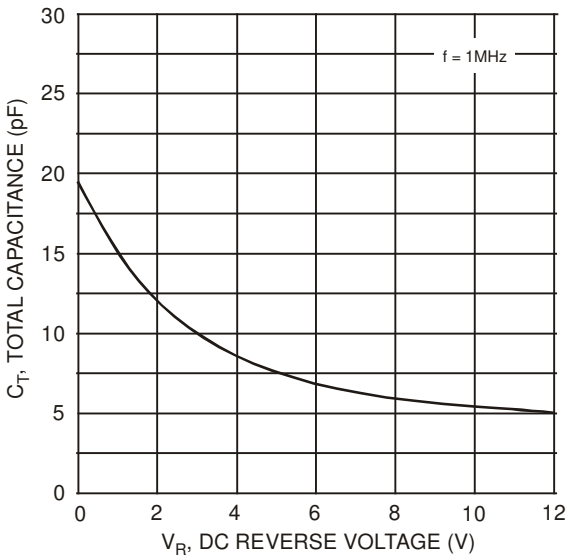


Fig. 3 Total Capacitance vs. Reverse Voltage

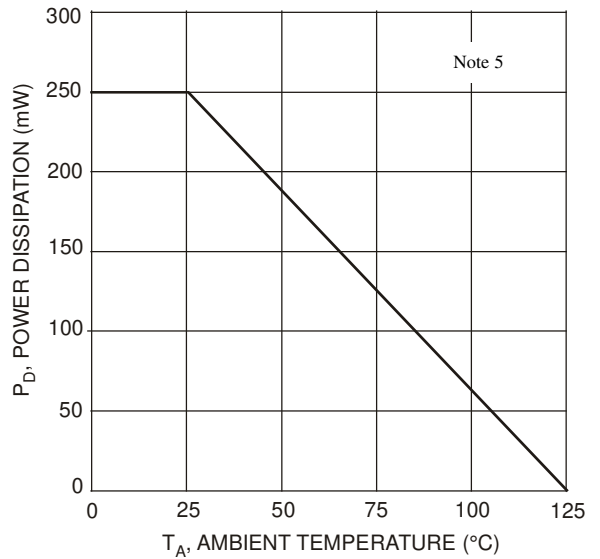
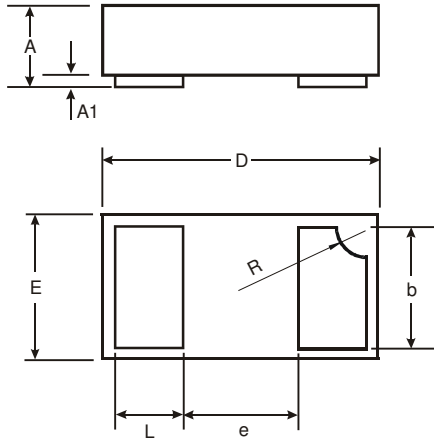


Fig. 4 Power Derating Curve

Package Outline Dimensions

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

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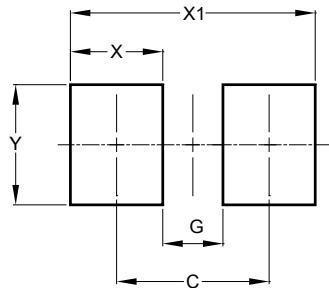


X1-DFN1006-2			
Dim	Min	Max	Typ
A	0.47	0.53	0.50
A1	0	0.05	0.03
b	0.45	0.55	0.50
D	0.95	1.075	1.00
E	0.55	0.675	0.60
e	-	-	0.40
L	0.20	0.30	0.25
R	0.05	0.15	0.10
All Dimensions in mm			

Suggested Pad Layout

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

X1-DFN1006-2



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

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