

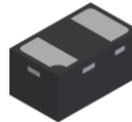
Features

- Low Forward Voltage Drop
- Guard Ring Die Construction for Transient Protection
- Low Capacitance
- **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: See Marking Information
- Terminals: Finish — NiPdAu Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 ⁽⁴⁾
- Weight: 0.001 grams (Approximate)

X1-DFN1006-2



Bottom View

Ordering Information (Note 4)

Part Number	Case	Packaging
SDM10U45LP-7	X1-DFN1006-2	3,000/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/products/packages.html>.

Marking Information

SDM10U45LP-7	<p>Top View Dot Denotes Cathode Side</p>	<p>From date code 1527 (YYWW), this changed to:</p> <p>Top View Bar Denotes Cathode Side</p>
	LJ = Product Type Marking Code	

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

Characteristic	Symbol	Value	Unit
Maximum Peak Reverse Voltage	V_{RM}	45	V
Reverse Voltage	V_R	40	V
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Average Forward Current	I_O	100	mA
Maximum (Peak) Forward Current	I_{FM}	300	mA
Non-Repetitive Peak Forward Surge Current @ $t \leq 10\text{ms}$	I_{FSM}	1	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation	P_D	250	mW
Thermal Resistance, Junction to Ambient Air	$R_{\theta JA}$	400	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-40 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 5)	$V_{(BR)R}$	30	—	—	V	$I_R = 100\mu\text{A}$
Forward Voltage Drop	V_F	—	280	—	mV	$I_F = 1.0\text{mA}$
			360	—		$I_F = 15\text{mA}$
			470	550		$I_F = 50\text{mA}$
			580	800		$I_F = 100\text{mA}$
Reverse Current (Note 5)	I_R	—	—	1.0	μA	$V_R = 25\text{V}$
Total Capacitance	C_T	—	7	15	pF	$V_R = 10\text{V}, f = 1.0\text{MHz}$

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

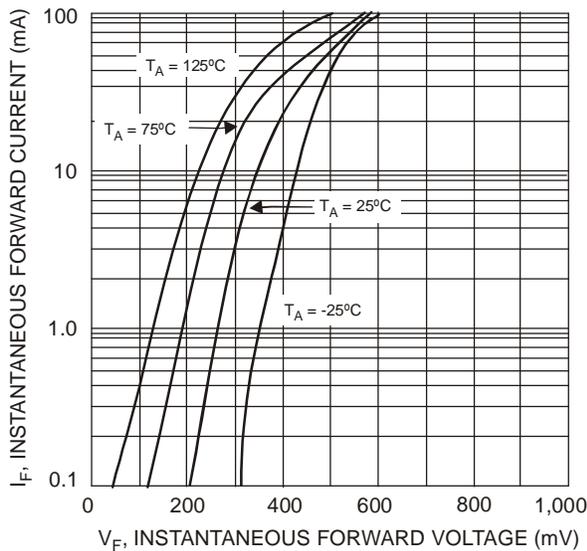


Fig. 1 Typical Forward Characteristics

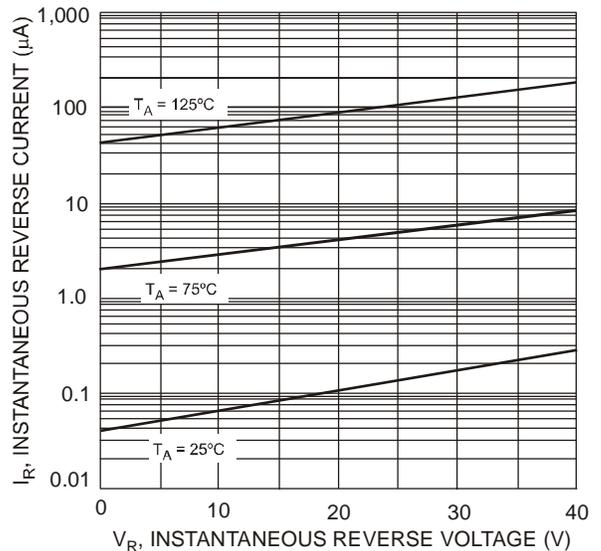


Fig. 2 Typical Reverse Characteristics

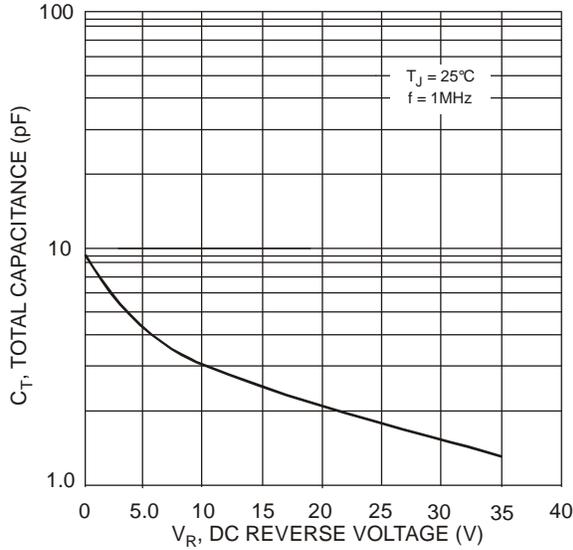


Fig. 3 Total Capacitance vs. Reverse Voltage

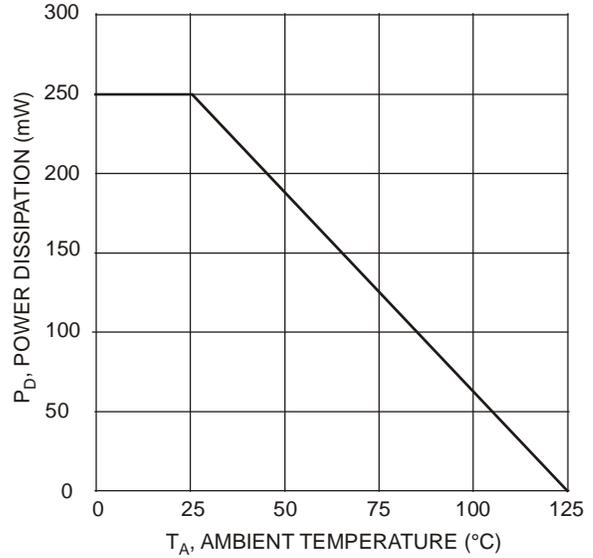
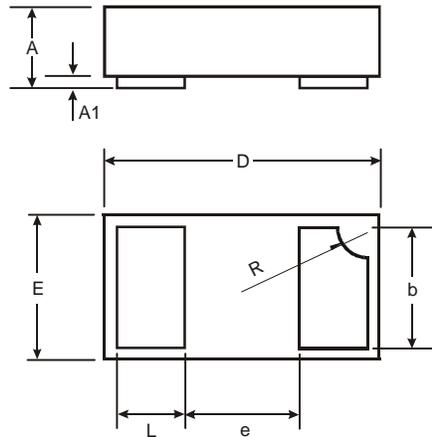


Fig. 4 Power Derating Curve

Package Outline Dimensions

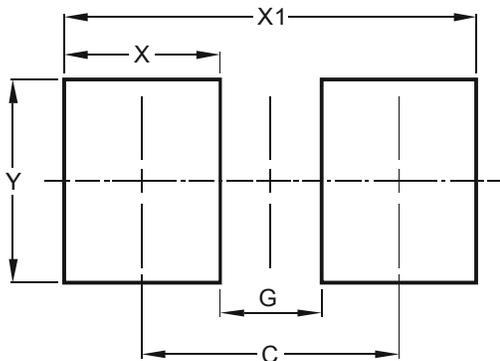
Please see AP02001 at http://www.diodes.com/_files/datasheets/ap02001.pdf for the latest version.



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/_files/datasheets/ap02001.pdf for the 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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