

Product Summary

V_R (V)	I_F (mA)	V_F MAX (V) @ +25°C	I_R MAX (μA) @ +25°C
30	200	0.575	150

Applications

- SMPS
- Free wheeling diodes
- Reverse polarity protections
- DC-DC converters
- General switching applications

Features and Benefits

- 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)**
- **The SDM20U30LPQ is suitable for automotive applications requiring specific change control; this part is AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.**
<https://www.diodes.com/quality/product-definitions/>

Mechanical Data

- Package: X1-DFN1006-2
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Dot or Bar
- Terminals: Finish — NiPdAu Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208
- Weight: 0.001 grams (Approximate)

X1-DFN1006-2


Top View



Bottom View

Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
SDM20U30LPQ-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) & 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information

SDM20U30LPQ-7	<p>Top View Dot Denotes Cathode Side</p>	From date code 1527 (YYWW), this changed to:	<p>Top View Bar Denotes Cathode Side</p>
	<p>LM = Product Type Marking Code</p>		

Maximum Ratings (@T_A = +25°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 _F	200	mA
Peak Forward Surge Current	I _{FSM}	1.0	A

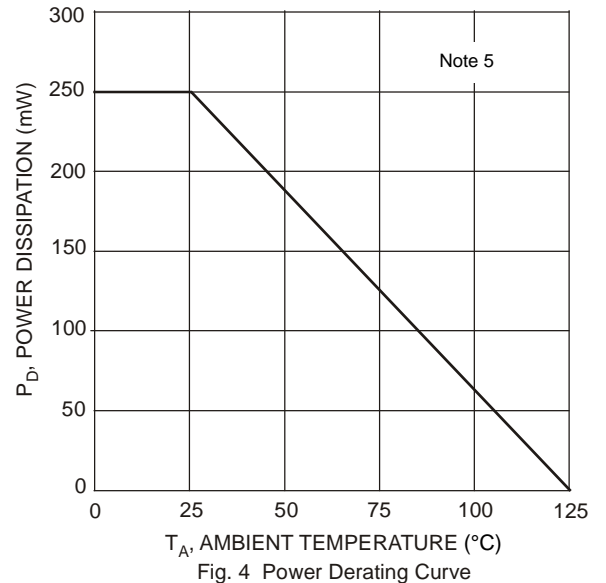
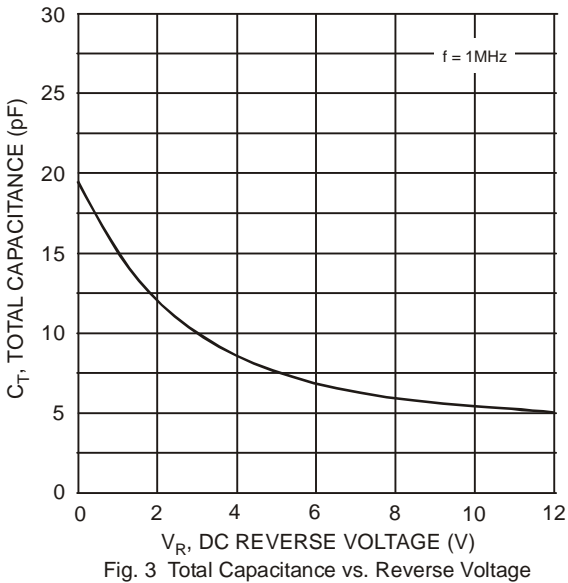
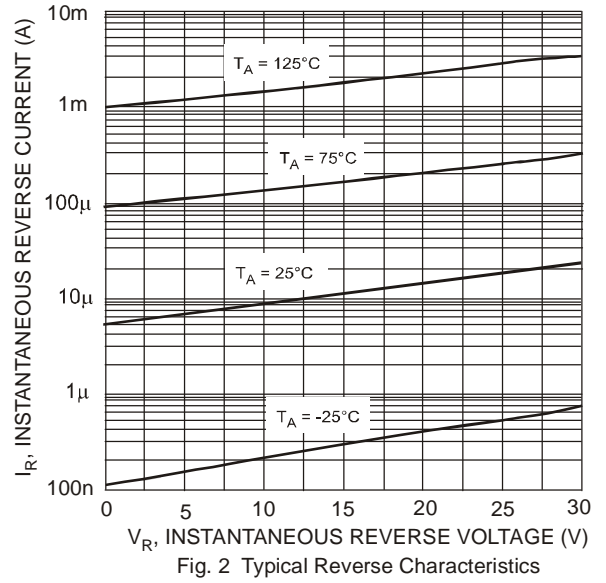
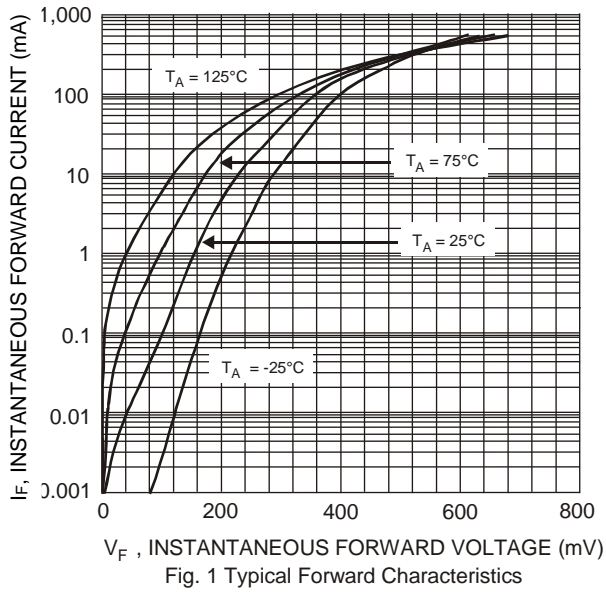
Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation	P _D	250	mW
Thermal Resistance, Junction to Ambient Air (Note 5)	R _{θJA}	400	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +125	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 6)	V _{(BR)R}	30	—	—	V	I _R = 150μA
Forward Voltage Drop	V _F	—	—	350 575	mV	I _F = 20mA I _F = 200mA
Peak Reverse Current (Note 6)	I _R	—	—	150 30	μA μA	V _R = 30V V _R = 10V
Total Capacitance	C _T	—	20	—	pF	V _R = 0V, f = 1.0MHz
Reverse Recovery Time	t _{RR}	—	3	—	ns	I _F = I _R = 10mA, I _{R(REC)} = 1mA, R _L = 100Ω

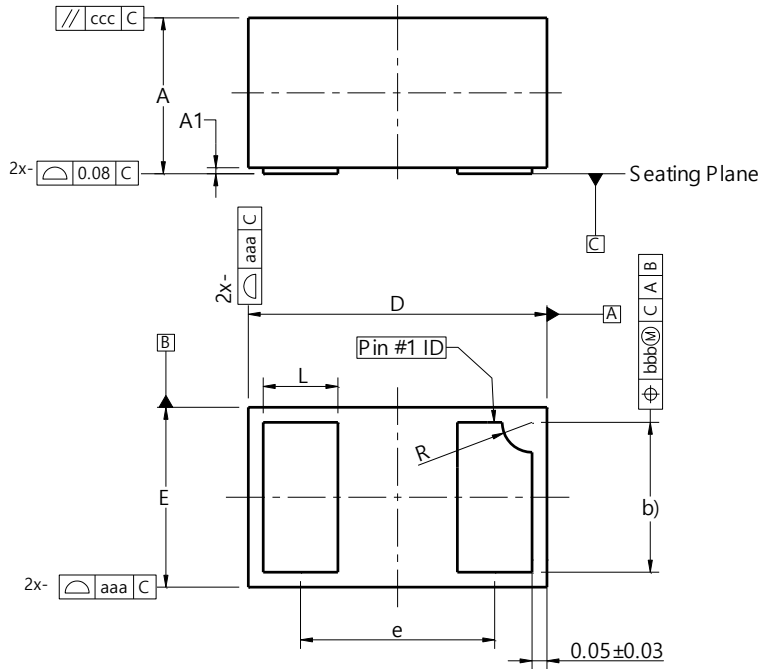
Notes: 5. Device mounted on FR-4 substrate PC board, with minimum recommended pad layout.
6. Short duration pulse test used to minimize self-heating effect.



Package Outline Dimensions

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

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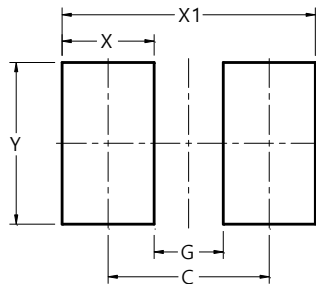


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Dim	Min	Max	Typ
A	0.47	0.53	0.50
A1	0.00	0.05	0.03
b	0.45	0.55	0.50
D	0.95	1.075	1.00
E	0.55	0.675	0.60
e	--	--	0.65
L	0.20	0.30	0.25
R	0.05	0.15	0.10
aaa	0.15		
bbb	0.05		
ccc	0.05		
All Dimensions in mm			

Suggested Pad Layout

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

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

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