

Features

- Ultra-Low Leakage Current
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- +175°C Operating Junction Temperature
- **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
- Terminals: Finish - NiPdAu over Copper Leadframe.
Solderable per MIL-STD-202, Method 208 ^(e4)
- Weight: 0.001 grams (Approximate)



Top View



Bottom View

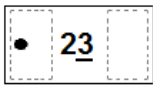
Ordering Information (Note 4)

Part Number	Case	Packaging
SBR02M30LP-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/quality/lead_free.html 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>.

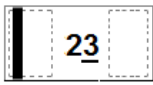
Marking Information

SBR02M30LP-7

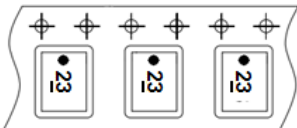
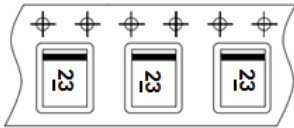


Top View
Dot Denotes Cathode Side

From date code 1527 (YYWW),
this changes to:



Top View
Bar Denotes Cathode Side

23 = Part Marking Code

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	30	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _{RM}		
RMS Reverse Voltage	V _{R(RMS)}	21	V
Average Rectified Output Current (See Figure 1)	I _O	0.2	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	5.0	A

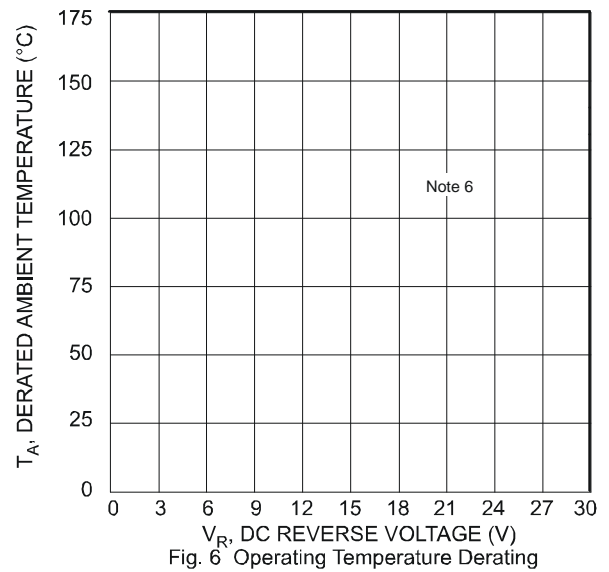
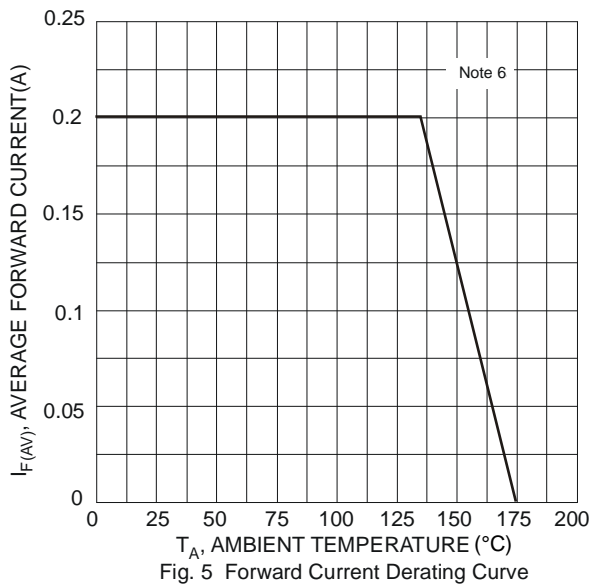
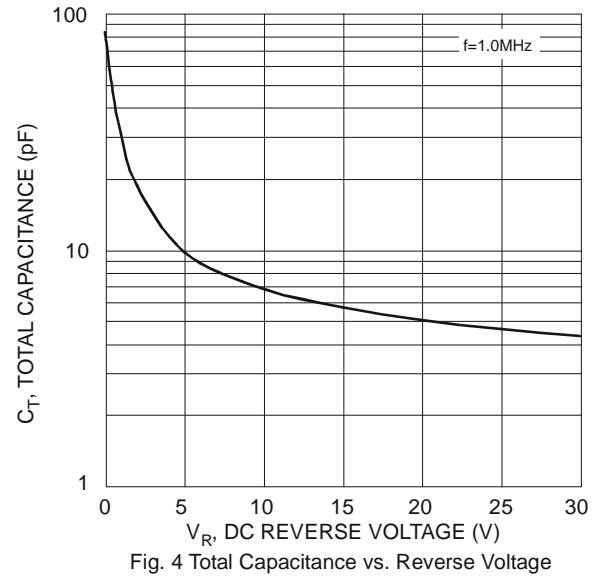
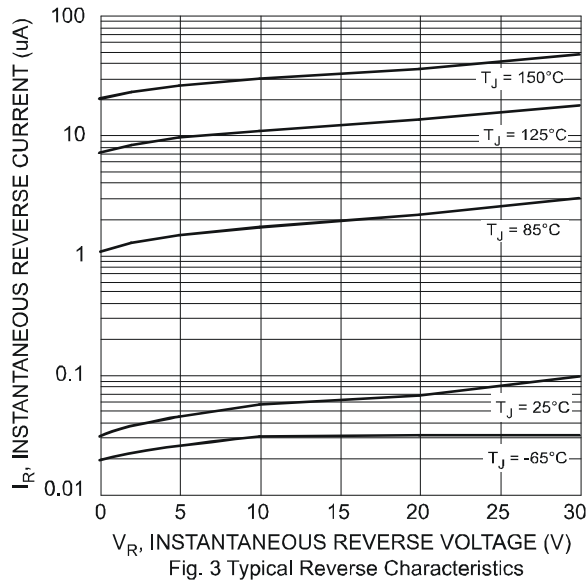
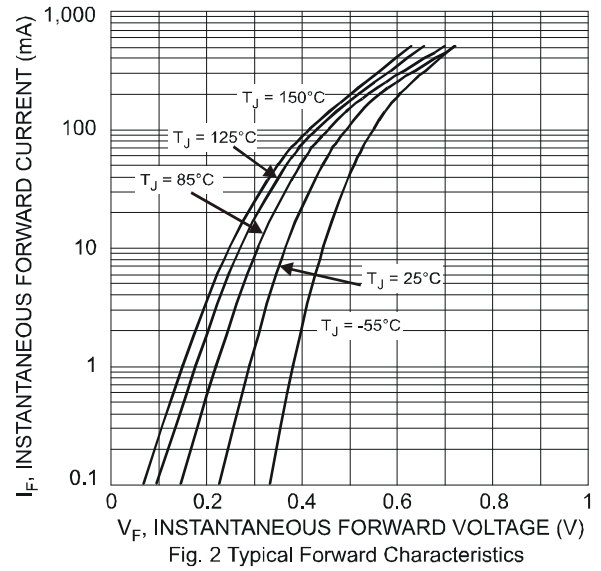
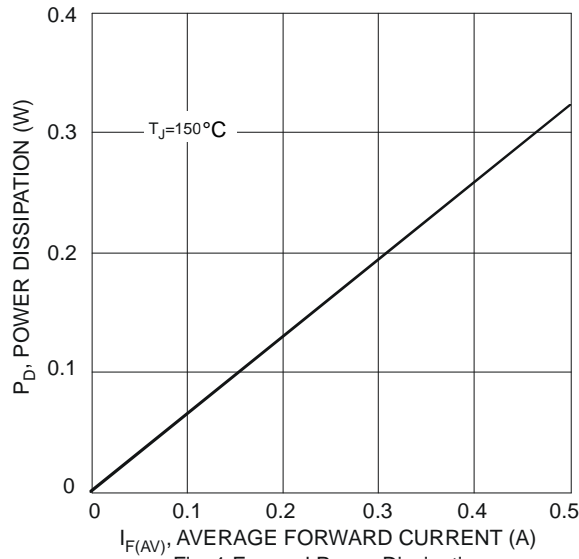
Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance	R _{θJS}	18	°C/W
Thermal Resistance Junction to Soldering (Note 5)	R _{θJA}	263	
Thermal Resistance Junction to Ambient (Note 6)			
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +175	°C

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

Characteristic	Symbol	Min	Typ.	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	V _{(BR)R}	30	-	-	V	I _R = 400μA
Forward Voltage Drop	V _F	-	0.50 0.42 0.57 0.51	0.54 0.45 0.61 0.54	V	I _F = 0.1A, T _J = +25°C I _F = 0.1A, T _J = +150°C I _F = 0.2A, T _J = +25°C I _F = 0.2A, T _J = +150°C
Leakage Current (Note 7)	I _R	-	0.1 46	0.5 150	μA	V _R = 30V, T _J = +25°C V _R = 30V, T _J = +150°C

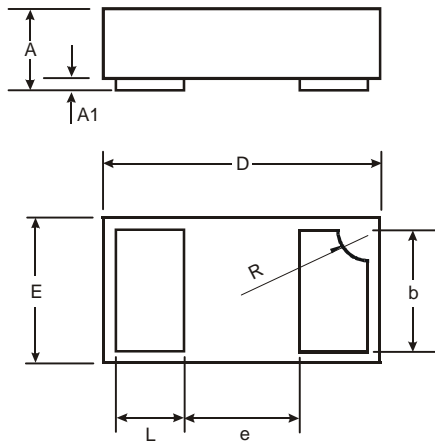
Notes: 5. Theoretical R_{θJS} calculated from the top center of the die straight down to the PCB cathode tab solder junction.
6. FR-4 PCB, 2oz. Copper, minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>.
7. Short duration pulse test used to minimize self-heating effect.



Package Outline Dimensions

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

X1-DFN1006-2

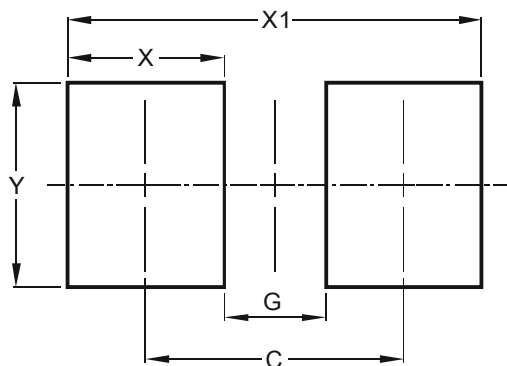


X1-DFN1006-2			
Dim	Min	Max	Typ
A	0.47	0.53	0.50
A1	0	0.05	0.03
b	0.45	0.55	0.50
D	0.95	1.075	1.00
E	0.55	0.675	0.60
e	-	-	0.40
L	0.20	0.30	0.25
R	0.05	0.15	0.10
All Dimensions in mm			

Suggested Pad Layout

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

X1-DFN1006-2



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

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