

ULTRA-SMALL SURFACE MOUNT SCHOTTKY DIODE
Product Summary

V _{RRM} (V)	I _O (mA)	V _{F Max} (V)	I _{R Max} (μA)
30	100	0.37	7

Description

The DIODES™ SDM02U30LP3 is a Schottky barrier diode optimized for ultra low-forward voltage drop and low reverse leakage current. Encapsulated in the ultra-small X3-DFN0603-2 with footprint of 0.18mm² and ultra-low package profile, this device is designed for saving PCB space in portable electronic devices.

Applications

- Reverse voltage and current protections
- Blocking diodes
- Clamping protections
- LCD and key pad backlighting
- Freewheeling diodes

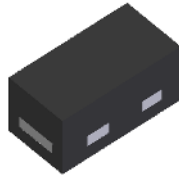
Features

- 0.18mm² Footprint – 70% Smaller Than DFN1006/SOD923
- Off Board Profile of 0.35mm – 30% Thinner Than The DFN1006
- Low Forward Voltage of 0.37V (Max) – Minimises Power Dissipation Losses
- Low Leakage – Maximises Battery Power
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. “Green” Device (Note 3)**
- **An Automotive-Compliant Part is Available Under Separate Datasheet ([SDM02U30LP3Q](#))**

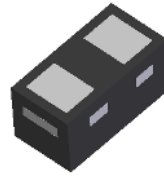
Mechanical Data

- Package: X3-DFN0603-2
- Package Material: Molded Plastic, “Green” Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Bar
- Terminals: Finish – Matte Tin Finish over Copper Leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 ③
- Weight: 0.2mg (Approximate)

X3-DFN0603-2



Top View



Bottom View

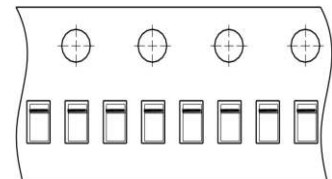
Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
SDM02U30LP3-7B	X3-DFN0603-2	10,000	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


L₂ & L₂- = Product Type Marking Code
Bar Denotes Cathode Side



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
Average Rectified Output Current	I_O	100	mA
Non-Repetitive Peak Forward Surge Current (8.33ms Half-Sine Waveform)	I_{FSM}	2	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	250	mW
Thermal Resistance Junction to Ambient Air (Note 5)	$R_{\theta JA}$	500	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	V_F	—	—	0.37	V	$I_F = 10\text{mA}$
		—	0.20	—		$I_F = 10\text{mA}, T_A = +125^\circ\text{C}$
Leakage Current (Note 6)	I_R	—	—	7	μA	$V_R = 10\text{V}$
		—	4	—		$V_R = 30\text{V}$

Notes: 5. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/package-outlines.html>.
6. Short duration pulse test used to minimize self-heating effect.

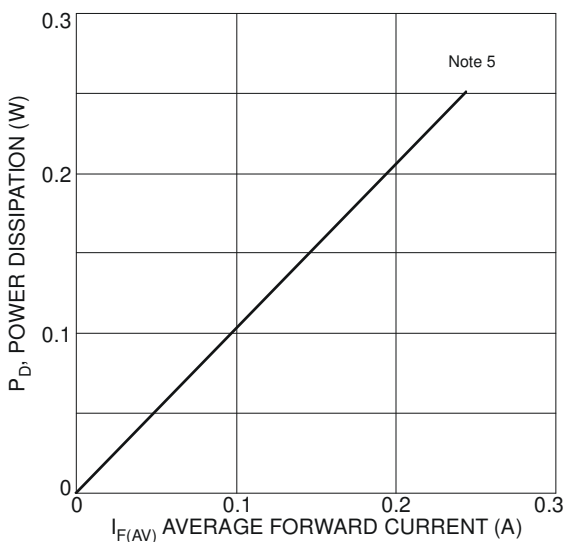


Figure 1 Forward Power Dissipation

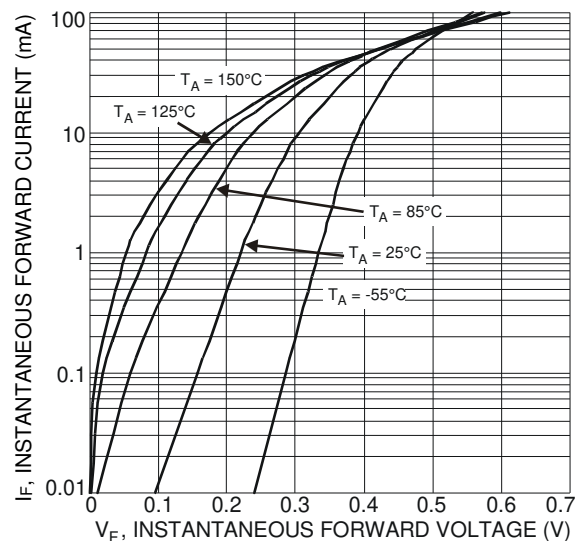
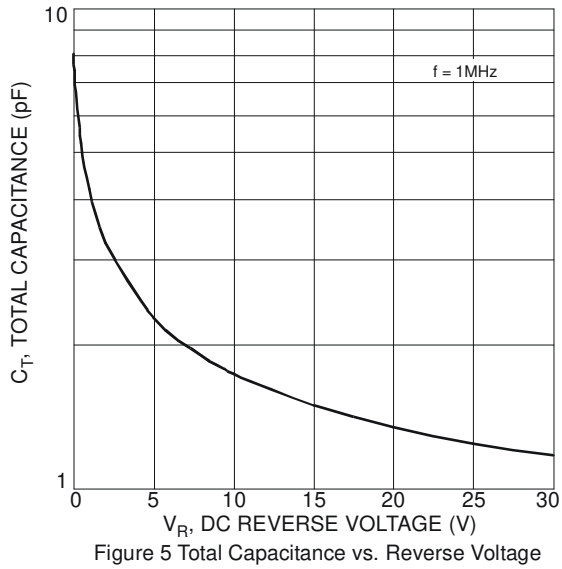
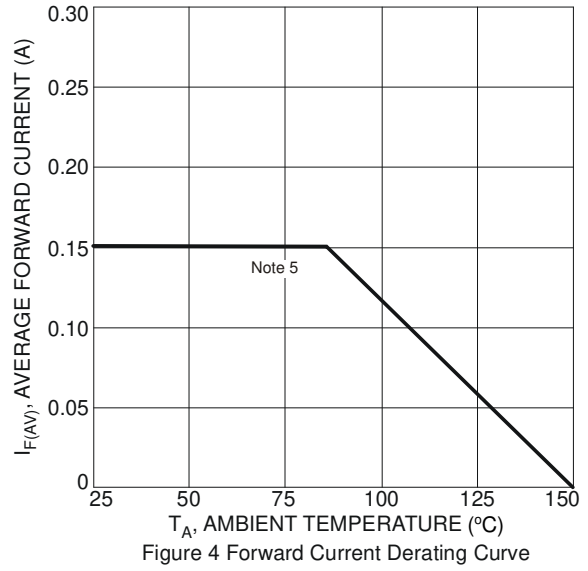
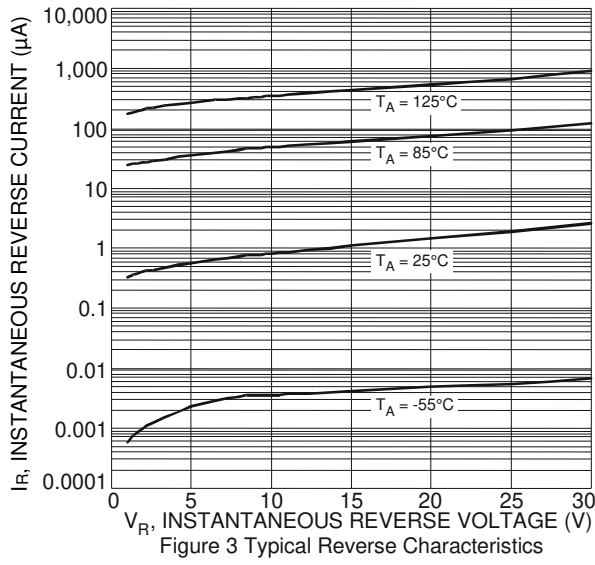


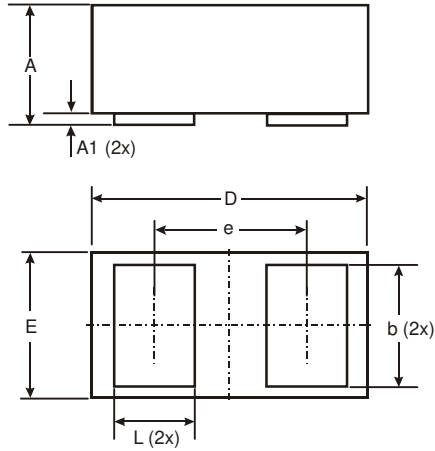
Figure 2 Typical Forward Characteristics



Package Outline Dimensions

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

X3-DFN0603-2

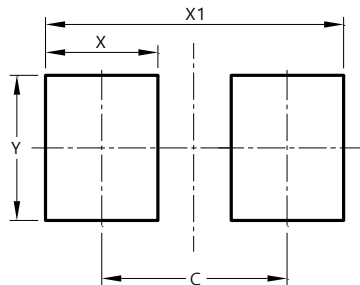


X3-DFN0603-2			
Dim	Min	Max	Typ
A	0.27	0.35	0.30
A1	0.00	0.03	0.02
b	0.19	0.29	0.24
D	0.595	0.645	0.62
E	0.295	0.345	0.32
e	-	-	0.355
L	0.14	0.24	0.19
All Dimensions in mm			

Suggested Pad Layout

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

X3-DFN0603-2



Dimensions	Value (in mm)
C	0.380
X	0.230
X1	0.610
Y	0.300

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