

**ULTRA-SMALL SURFACE MOUNT SCHOTTKY DIODE**
**Product Summary**

$V_{RRM}$ (V)	$I_O$ (mA)	$V_{F\ max}$ (V)	$I_{R\ max}$ ( $\mu$ A)
30	100	0.37	7

**Description**

The SDM02U30LP3 is a schottky barrier diode optimized for ultra low-forward voltage drop and low reverse leakage current. Encapsulated in the ultra-small DFN-0603 with footprint of 0.18mm<sup>2</sup> and ultra-low package profile, this device is designed for saving PCB space in portable electronic devices.

**Applications**

- Reverse Voltage and Current Protection
- Blocking Diode
- Clamping Protection
- LCD and Key Pad Backlighting
- Freewheeling Diode

**Features**

- 0.18mm<sup>2</sup> 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)**

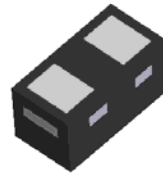
**Mechanical Data**

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

X3-DFN0603-2



Top View

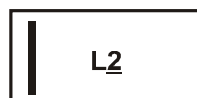


Bottom View

**Ordering Information** (Note 4)

Part Number	Case	Packaging
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) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](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**


$\underline{L2}$  = 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 Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	30	V
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)	$I_{FSM}$	500	mA

**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 5)	$I_R$	—	—	7	$\mu\text{A}$	$V_R = 10\text{V}$
		—	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>.  
6. Short duration pulse test used to minimize self-heating effect.

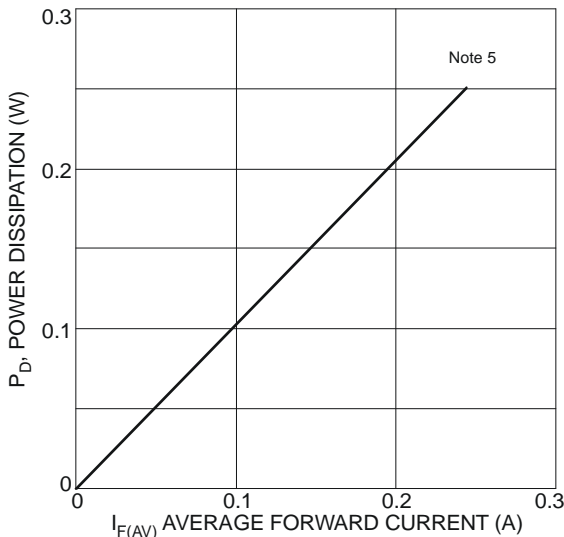


Figure 1 Forward Power Dissipation

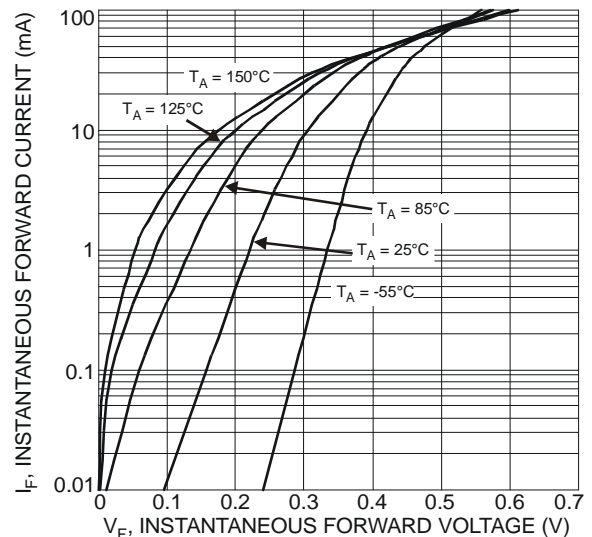
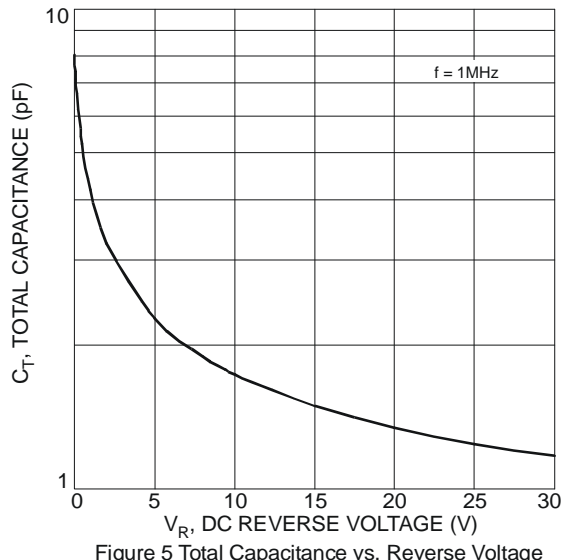
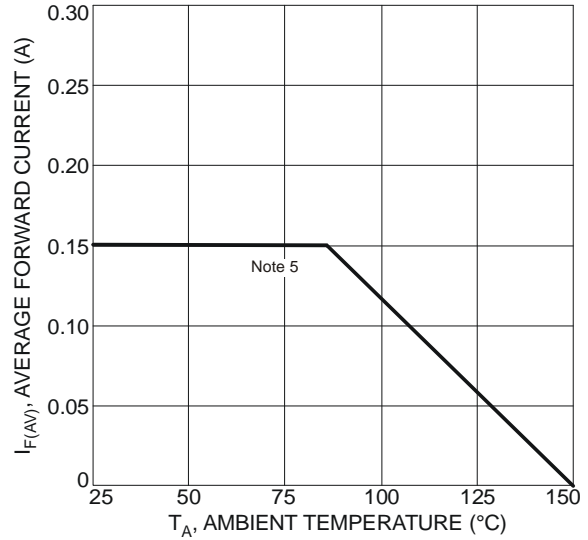
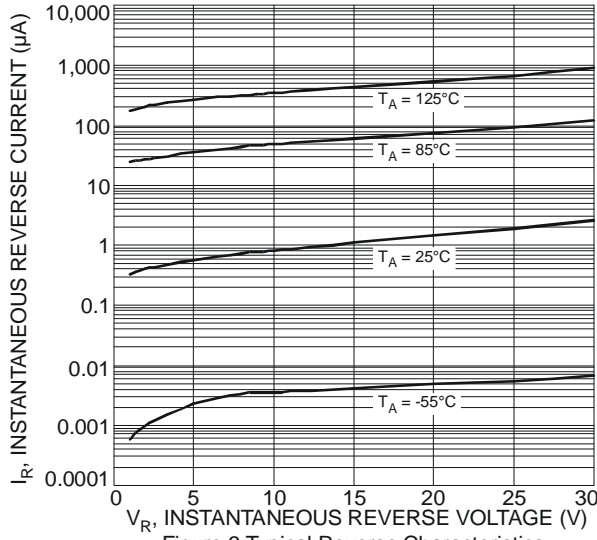
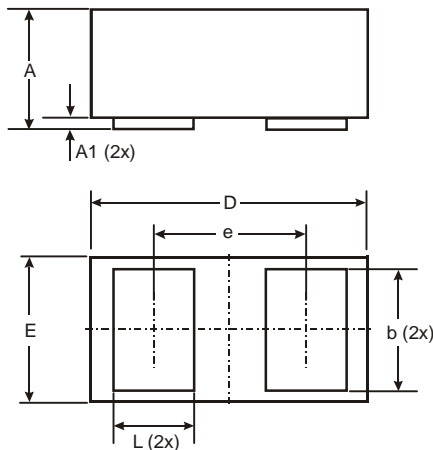


Figure 2 Typical Forward Characteristics



**Package Outline Dimensions**

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.

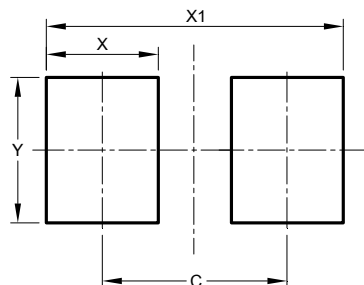


X3-DFN0603-2			
Dim	Min	Max	Typ
A	0.27	0.35	0.30
A1	0.00	0.03	0.02
b	0.19	0.29	0.24
D	0.595	0.645	0.62
E	0.295	0.345	0.32
e	-	-	0.355
L	0.14	0.24	0.19

All Dimensions in mm

## Suggested Pad Layout

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



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

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