

**ULTRA-SMALL SURFACE MOUNT SCHOTTKY DIODE**

**Product Summary** (@T<sub>A</sub> = +25°C)

V <sub>RRM</sub> (V)	I <sub>O</sub> (mA)	V <sub>FMAX</sub> (V) @10mA	I <sub>RMAX</sub> (μA)
30	100	0.45	0.4

**Description**

The SDM02M30LP3 is a Schottky barrier diode optimized for low forward voltage drop and very 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**

- Portable Device
- Mobile Applications
- LCD and Keypad Backlighting
- Clamping Protection
- Reverse Voltage and Current Protection
- Freewheeling Diode

**Features and Benefits**

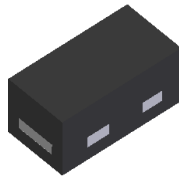
- Ultra-Small Leadless Surface Mount Package (0.6mm x 0.3mm)
- Very Low Reverse Leakage Current
- Low Forward Voltage
- Fast Reverse Recovery
- Low Capacitance
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

**Mechanical Data**

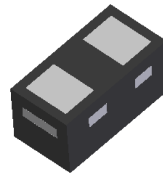
- Case: X3-DFN0603-2
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Bar
- Terminals: Finish – Matte Tin Finish over Copper Leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 (E3)
- Weight: 0.2mg (Approximate)

NEW PRODUCT

X3-DFN0603-2



Top View



Bottom View

**Ordering Information** (Note 4)

Part Number	Case	Packaging
SDM02M30LP3-7B	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**



13 = Product Type Marking Code  
Bar Denotes Cathode Side

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	30	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>R</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	21	V
Average Rectified Output Current	I <sub>O</sub>	100	mA
Non-Repetitive Peak Forward Surge Current (8.33ms Half-Sine Waveform)	I <sub>FSM</sub>	2	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P <sub>D</sub>	250	mW
Thermal Resistance Junction to Ambient Air (Note 5)	R <sub>θJA</sub>	500	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	V <sub>F</sub>	—	0.41 0.30	0.45 —	V	I <sub>F</sub> = 10mA I <sub>F</sub> = 10mA, T <sub>J</sub> = +125°C
Leakage Current (Note 6)	I <sub>R</sub>	—	0.014 0.040	0.15 0.4	μA	V <sub>R</sub> = 10V V <sub>R</sub> = 30V
Reverse Recovery Time	t <sub>RR</sub>	—	1.6	—	ns	I <sub>F</sub> = 10mA, I <sub>R</sub> = 10mA, I <sub>RR</sub> = 1mA
Total Capacitance	C <sub>T</sub>	—	2.7	—	pF	V <sub>R</sub> = 5.0V <sub>DC</sub> , f = 1MHz

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.

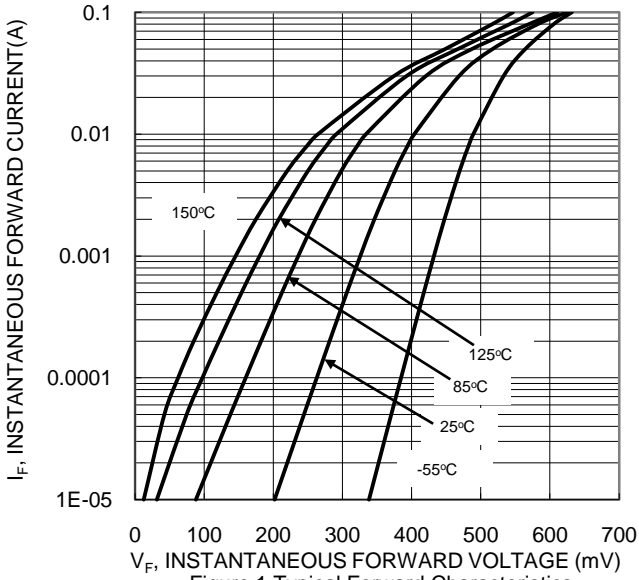


Figure 1 Typical Forward Characteristics

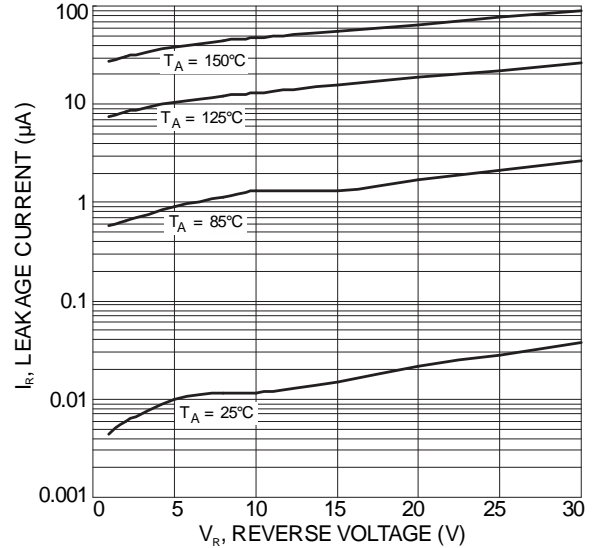


Figure 2 Typical Reverse Characteristics

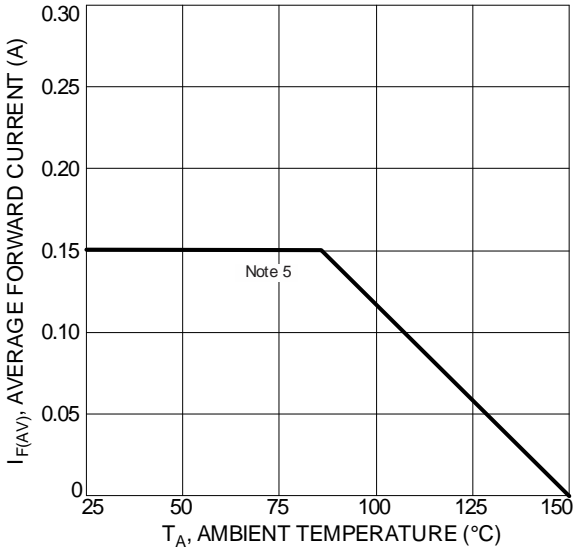


Figure 3 Forward Current Derating Curve

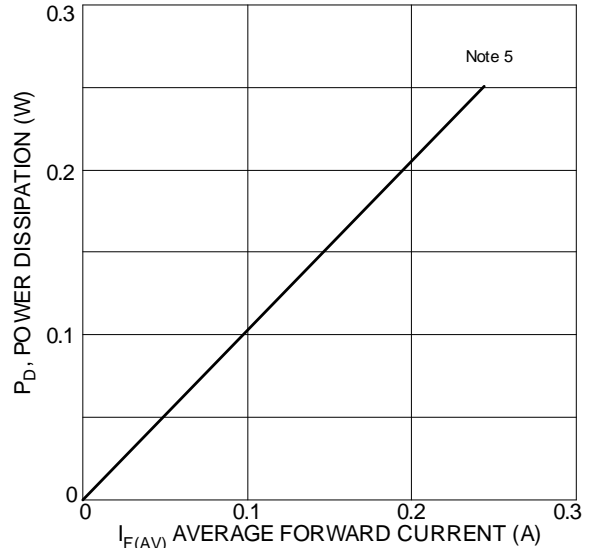


Figure 4 Forward Power Dissipation

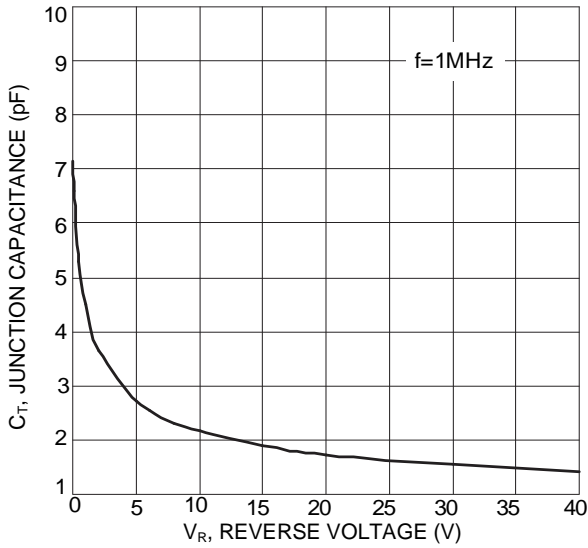
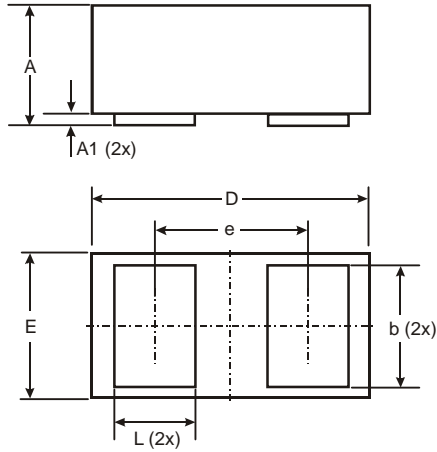


Figure 5 Typical Junction Capacitance

**Package Outline Dimensions**

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

**X3-DFN0603-2**



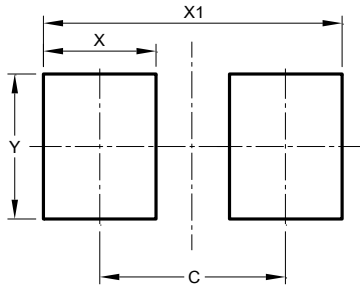
X3-DFN0603-2			
Dim	Min	Max	Typ
A	0.27	0.35	0.30
A1	0.00	0.03	0.02
b	0.19	0.29	0.24
D	0.595	0.645	0.62
E	0.295	0.345	0.32
e	-	-	0.355
L	0.14	0.24	0.19
All Dimensions in mm			

NEW PRODUCT

**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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