THE DATASHEET OF

SDM02M30LP3-7B

NEW PRODUCT

Product Summary (@T_A = +25°C)

V_{RRM} (V)	I_O (mA)	V_{FMAX} (V) @10mA	I_{RMAX} (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^2 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

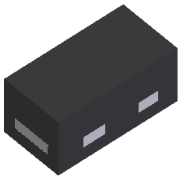
Features and Benefits

- 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)**

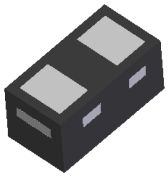
Mechanical Data

- 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)

X3-DFN0603-2



Top View



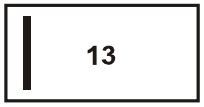
Bottom View

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 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

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Maximum Ratings (@T_A = +25°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}	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	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	V_F	— —	0.41 0.30	0.45 —	V	I_F = 10mA I_F = 10mA, T_J = +125°C
Leakage Current (Note 6)	I_R	— —	0.014 0.040	0.15 0.4	µA	V_R = 10V V_R = 30V
Reverse Recovery Time	t_{RR}	—	1.6	—	ns	I_F = 10mA, I_R = 10mA, I_{RR} = 1mA
Total Capacitance	C_T	—	2.7	—	pF	V_R = 5.0V_{DC}, 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.

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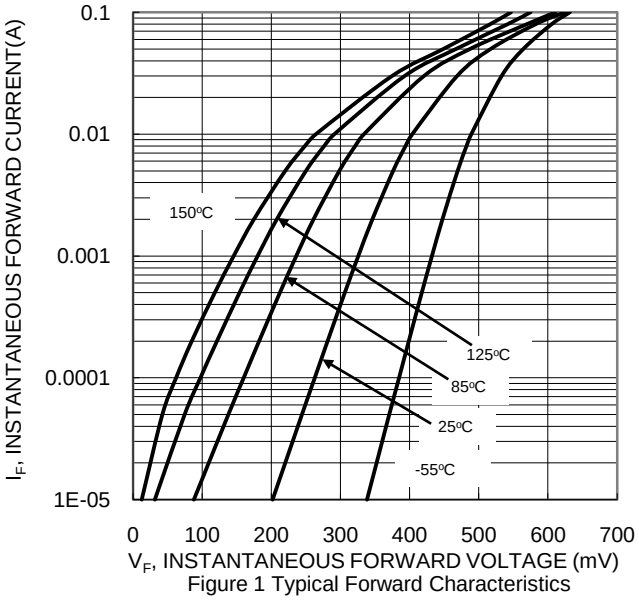


Figure 1 Typical Forward Characteristics

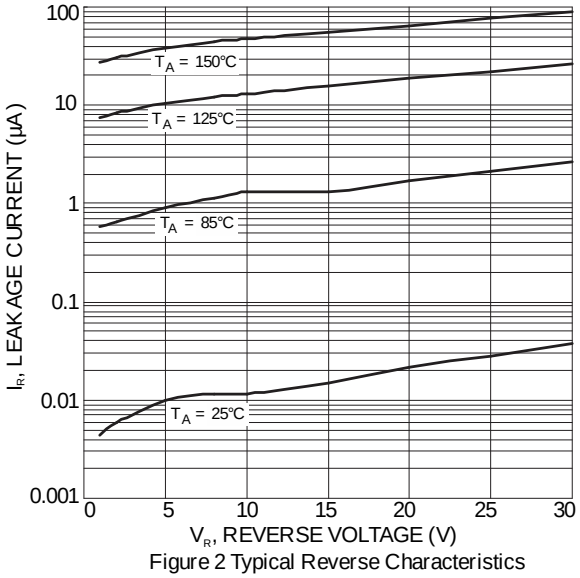


Figure 2 Typical Reverse Characteristics

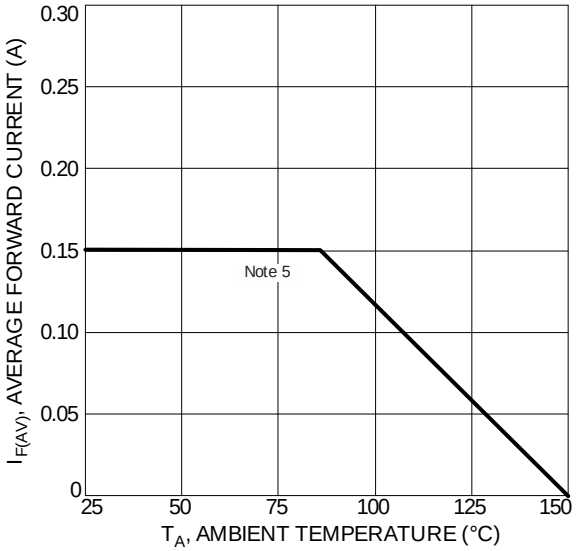


Figure 3 Forward Current Derating Curve

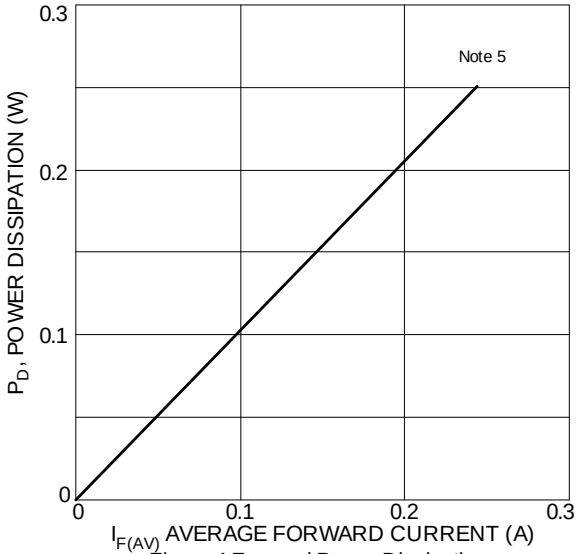


Figure 4 Forward Power Dissipation

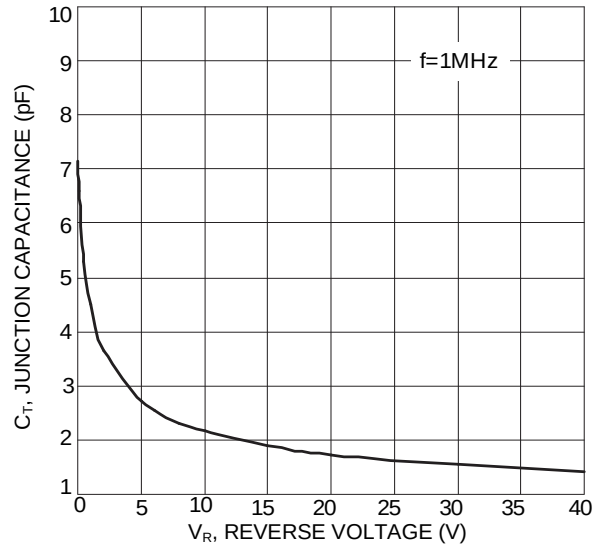


Figure 5 Typical Junction Capacitance

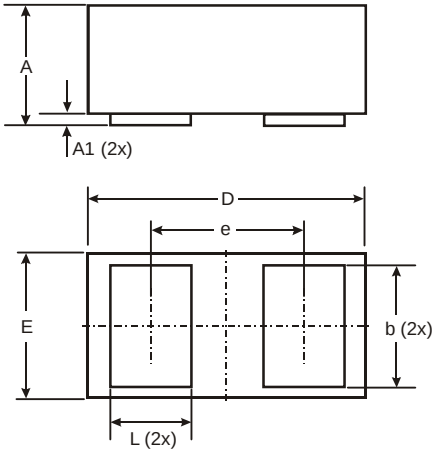
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Package Outline Dimensions

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

X3-DFN0603-2

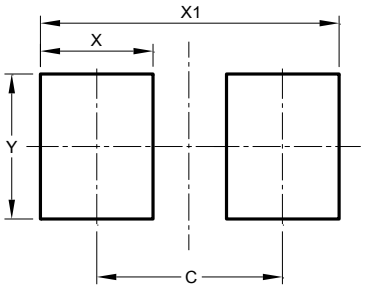


X3-DFN0603-2			
Dim	**Min**	**Max**	**Typ**
A	0.27	0.35	0.30
A1	0.00	0.03	0.02
b	0.19	0.29	0.24
D	0.595	0.645	0.62
E	0.295	0.345	0.32
e	-	-	0.355
L	0.14	0.24	0.19
All Dimensions in mm			

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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