0.2A SCHOTTKY BARRIER DIODE IN CHIP SCALE PACKAGE

Product Summary

V_{RRM} (V)	I_O (mA)	V_F Max (V) @ +25°C	I_R Max (µA) @ +25°C
30	200	0.44	120

Description

The SDM02L30CP3 is a 30-volt 200mA Schottky Barrier Diode that is optimized for very low forward voltage drop and low leakage current. It's housed in a compact Chip Scale Package (CSP) that occupies only 0.18mm^2 board space. The low thermal resistance enables designers to meet design challenges of increasing efficiency while reducing board space. It is ideally suited for use in portable applications.

Applications

- Blocking Diode
- Reverse Protection Diode
- Boost Diode

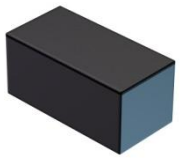
Features and Benefits

- 0.18mm^2 Footprint, Off Board Profile of 0.275mm
- Very Low Forward Voltage – Minimizes Power Dissipation Losses
- Low Leakage – Maximizes Battery Power
- Soft, Fast Switching Capability
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

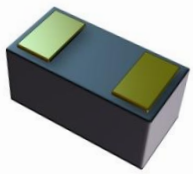
Mechanical Data

- Case: X3-WLB0603-2
- Moisture Sensitivity: Level 1 per J-STD-020
- Polarity Indicator: Cathode Dot
- Terminals: NiAu Bump. Solderable per MIL-STD-202, Method 208 e4
- Weight: 0.1mg (Approximate)

X3-WLB0603-2



Top View



Bottom View

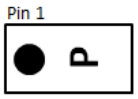
Ordering Information (Note 4)

Part Number	Case	Packaging
SDM02L30CP3-7	X3-WLB0603-2	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

X3-WLB0603-2



P = Product Type Marking Code
Dot Denotes Cathode Pin

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
Average Rectified Output Current	I_O	200	mA
Repetitive Peak Forward Current, $t_P \le 1ms$; $\delta \le 0.25$	I_{FRM}	4	A
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	6	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Notes 5 & 6)	$R_{\theta JA}$	250	°C/W
Operating Temperature Range (Note 6)	T_J	-55 to +150	°C
Storage Temperature Range	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 Drop	V_F	— — — —	0.16 0.23 0.33 0.39	0.20 0.29 0.38 0.44	V	I_F = 1mA, T_J = +25°C I_F = 10mA, T_J = +25°C I_F = 100mA, T_J = +25°C I_F = 200mA, T_J = +25°C
Leakage Current (Note 7)	I_R	— —	9 35	30 120	μA	V_R = 10V, T_J = +25°C V_R = 30V, T_J = +25°C
Junction Capacitance	C_T	—	10	—	pF	V_R = 5V, T_J = +25°C, f = 1MHz

Notes:
5. Device mounted on FR-4 substrate PC board, with minimum recommended pad layout per http://www.diodes.com/package-outlines.html.
6. For Schottky barrier diodes, thermal runaway must be avoided with adequate thermal dissipation in design to prevent T_J keeping rising under the operating conditions in applications.
7. Short duration pulse test used to minimize self-heating effect.

Typical Electrical Characteristics

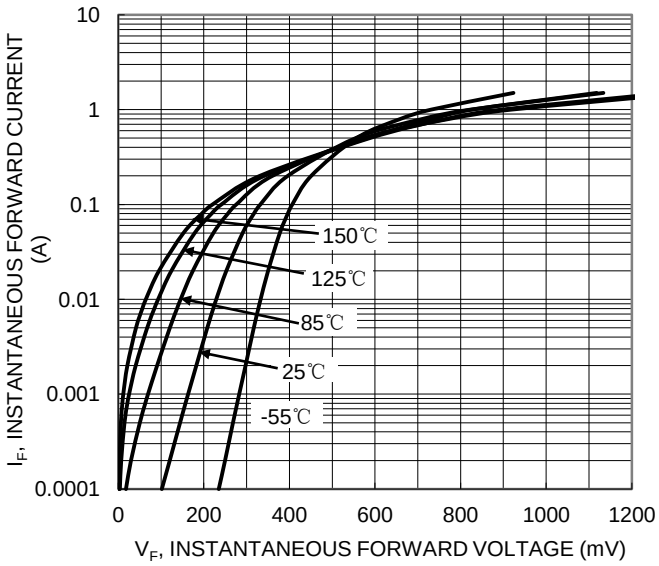


Figure 1. Typical Forward Characteristics

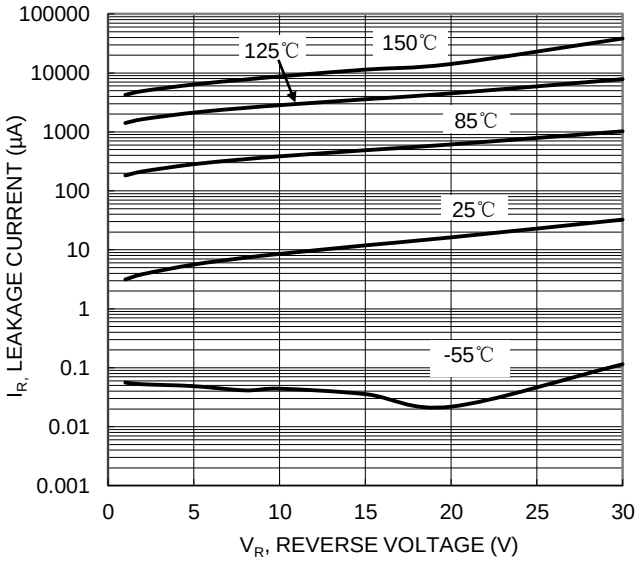


Figure 2. Typical Reverse Characteristics

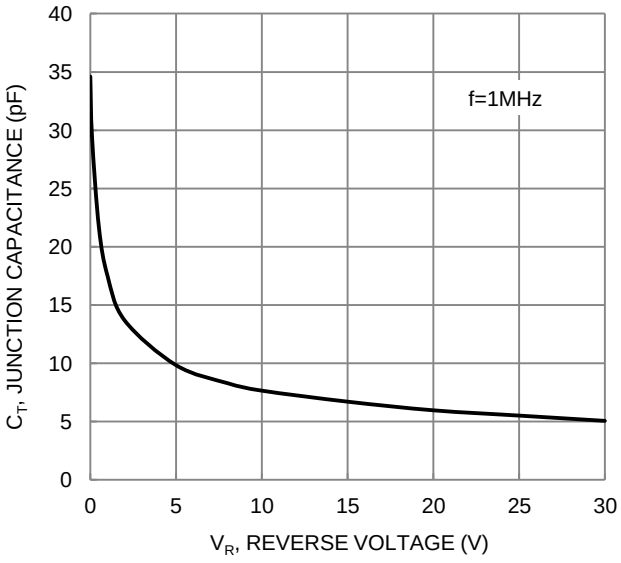


Figure 3. Typical Junction Capacitance

Package Outline Dimensions

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

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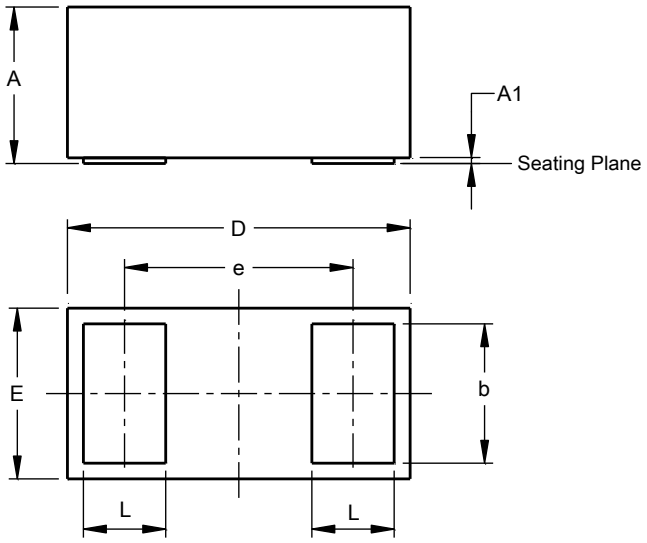

X3-WLB0603-2			
Dim	**Min**	**Max**	**Typ**
A	0.250	0.300	0.275
A1	0.00	0.01	-
b	0.220	0.280	0.245
D	0.575	0.625	0.600
E	0.275	0.325	0.300
e	-	-	0.400
L	0.120	0.180	0.144
All Dimensions in mm			

Suggested Pad Layout

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

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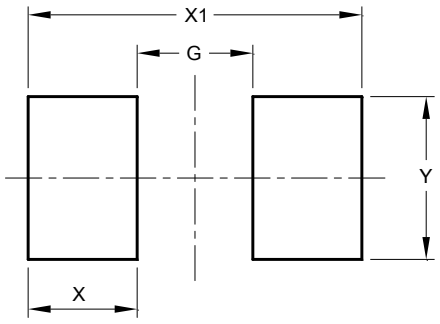

Dimensions	Value (in mm)
G	0.206
X	0.194
Y	0.291
X1	0.594

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