0.2A SCHOTTKY BARRIER DIODE 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	0.50	50

Description

The SDM02U30CSP is a 30-Volt 0.2A Schottky Barrier Diode that is optimized for 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.

Features and Benefits

- 0.18mm^2 Footprint, Off Board Profile of 0.28mm
- Low Forward Voltage of 0.50V (Max) – 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)**

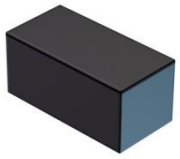
Applications

- Blocking Diode
- Reverse Protection Diode
- Boost Diode

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

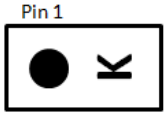
Ordering Information (Note 4)

Part Number	Case	Packaging
SDM02U30CSP-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) 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

X3-WLB0603-2



K = Product Type Marking Code
Dot Denotes Cathode Pin

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Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitance load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	30	V
Average Rectified Output Current	I_O	0.2	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	4.5	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	215	°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 Drop	V_F	—	—	0.34	V	I_F = 10mA, T_J = +25°C
		—	—	0.50		I_F = 200mA, T_J = +25°C
		—	0.41	—		I_F = 200mA, T_J = +125°C
Leakage Current (Note 6)	I_R	—	—	50	μA	V_R = 30V, T_J = +25°C
		—	1	—	mA	V_R = 30V, T_J = +125°C
Junction Capacitance	C_J	—	9	—	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/datsheets/ap02001.pdf.
6. Short duration pulse test used to minimize self-heating effect.

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Typical Electrical Characteristics

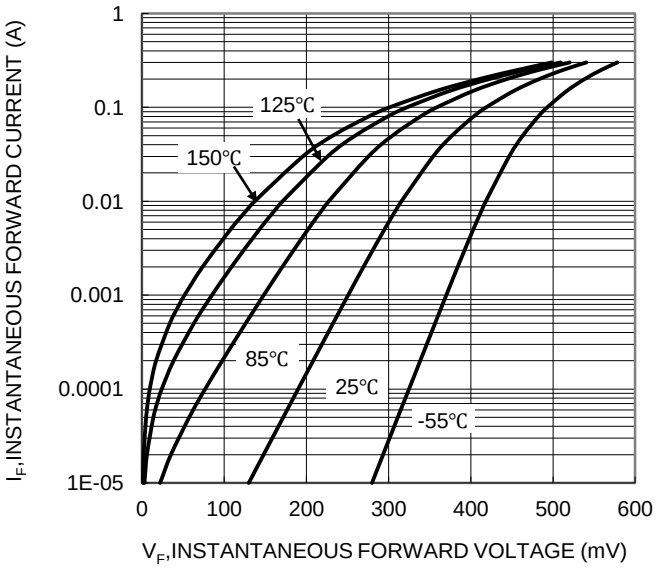


Figure 1. Typical Forward Characteristics

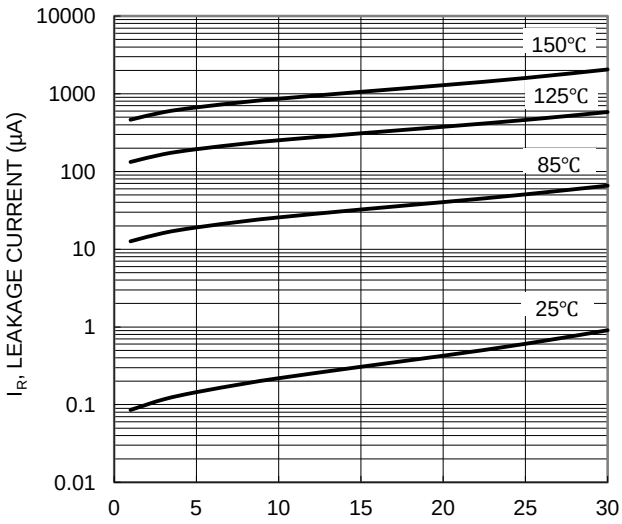


Figure 2. Typical Reverse Characteristics

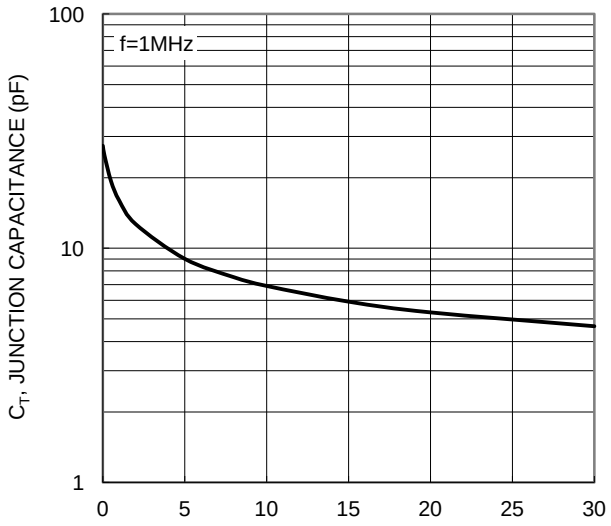


Figure 3. Typical Junction Capacitance

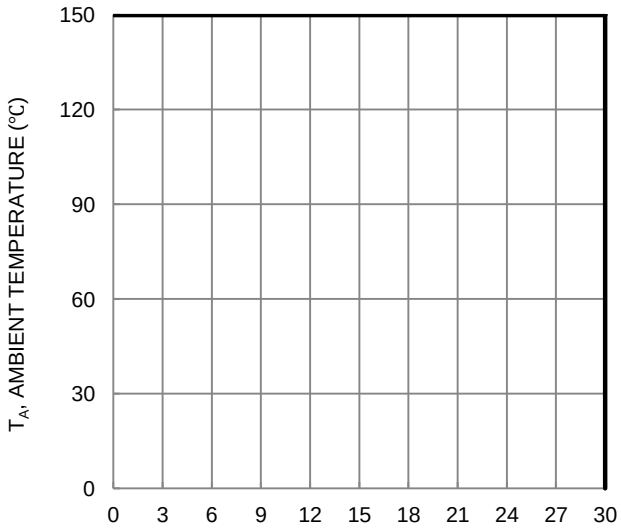


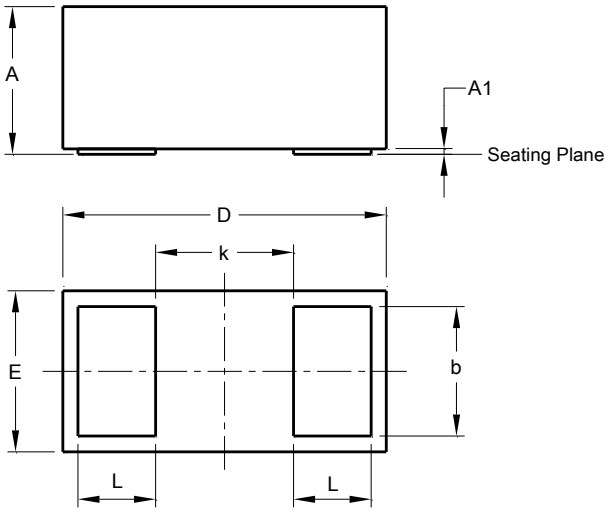
Figure 4. Operating Temperature Derating

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Package Outline Dimensions

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

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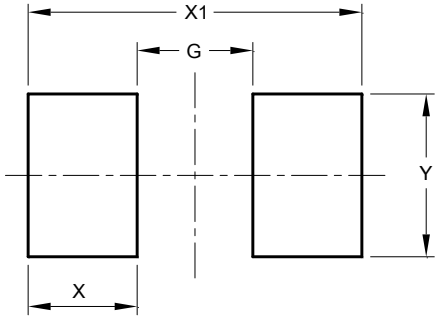


X3-WLB0603-2			
Dim	**Min**	**Max**	**Typ**
A	0.250	0.300	0.275
A1	0.00	0.01	—
b	0.220	0.290	0.241
D	0.575	0.625	0.600
E	0.275	0.325	0.300
k	—	—	0.256
L	0.120	0.190	0.144
All Dimensions in mm			

Suggested Pad Layout

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

X3-WLB0603-2



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

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