Lead-free Green

0.2A SURFACE MOUNT SCHOTTKY BARRIER DIODE

Product Summary (@T_A = +25°C)

V_{RRM} (V)	I_O (mA)	V_{FMAX} (V) @100mA	I_{RMAX} (µA)
30	200	0.70	0.4

Features and Benefits

- Small Leadless Surface Mount Package (1.0mm × 0.6mm × 0.37mm)
- 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)**

Description

The SDM02M30CLP3 is a Schottky barrier diode optimized for low forward voltage drop and very-low reverse leakage current in a common cathode DFN package. Encapsulated in the small DFN1006 with footprint of 0.6mm^2 and ultra-low package profile, this device is designed for saving PCB space in portable electronic devices.

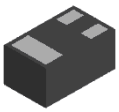
Applications

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

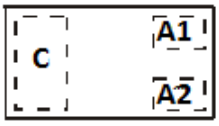
Mechanical Data

- Case: X2-DFN1006-3
- 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—NiPdAu Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 e4
- Weight: 0.001 grams (Approximate)

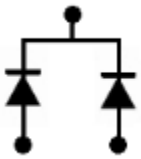
X2-DFN1006-3



Bottom View



Top View
C: Cathode
A1&A2: Anode 1&2



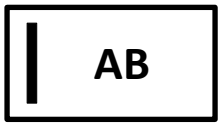
Equivalent Circuit

Ordering Information (Note 4)

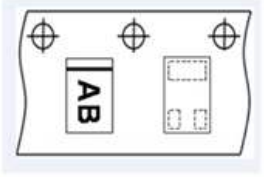
Part Number	Case	Packaging
SDM02M30CLP3-7B	X2-DFN1006-3	10,000/Tape & Reel

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 http://www.diodes.com/products/packages.html.

Marking Information



AB = Product Type Marking Code
AB = LC or $\overline{LC}$
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
Average Rectified Output Current (Total)	I_O	200	mA
Non-Repetitive Peak Forward Surge Current (8.33ms Half-Sine Waveform, per Diode)	I_{FSM}	2	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation(Note 5) (Total)	Pd	350	mW
Typical Thermal Resistance Junction to Ambient Air (Note 5)	$R_{\Theta JA}$	350	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	V_F	—	0.28 0.34 0.42 0.63	0.34 0.40 0.48 0.70	V	I_F = 0.1mA I_F = 1mA I_F = 10mA I_F = 100mA,
Leakage Current (Note 6)	I_R	—	0.014 0.040	0.15 0.40	µA	V_R = 10V V_R = 30V
Reverse Recovery Time	t_{RR}	—	2	—	ns	I_F = 10mA, I_R = 10mA, I_{RR} = 1mA
Total Capacitance	C_T	—	3.3	—	pF	V_R = 5.0V_{DC}, f = 1MHz

Notes: 5. Part mounted on FR-4 PCB 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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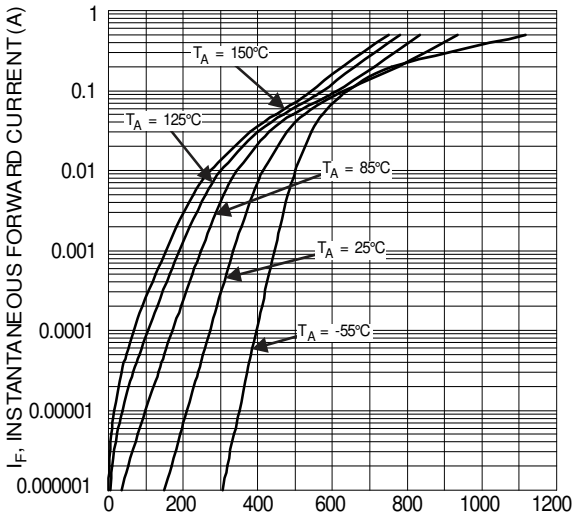

Figure 1 Typical Forward Characteristics

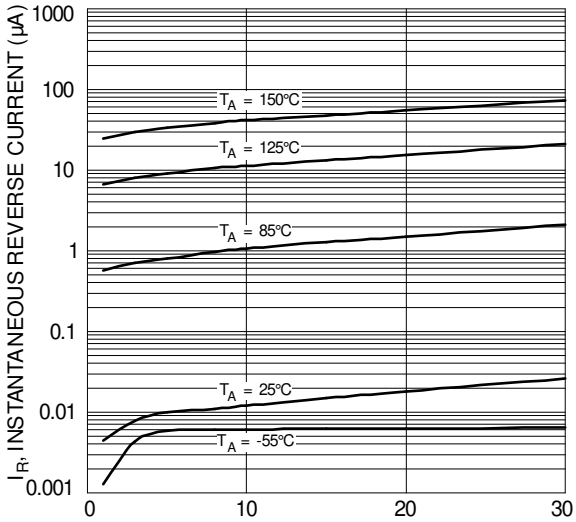

Figure 2 Typical Reverse Characteristics

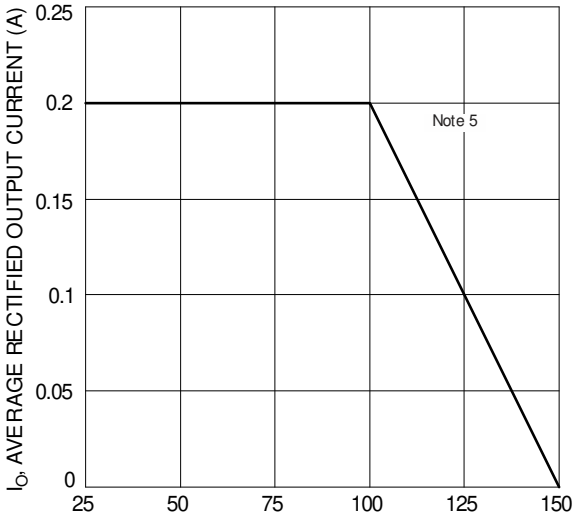

Figure 3 Forward Current Derating Curve

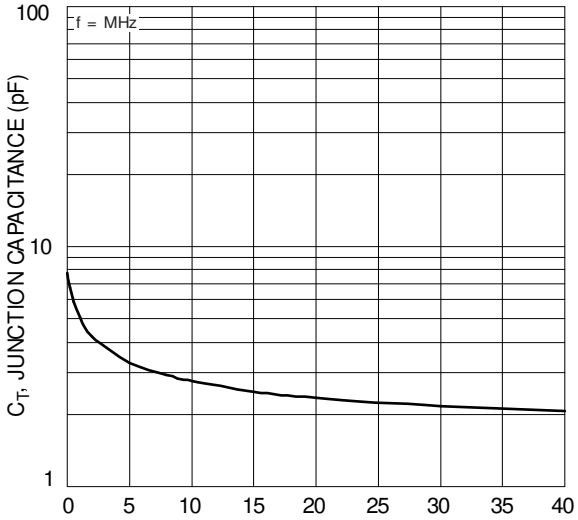

Figure 4 Typical Junction Capacitance

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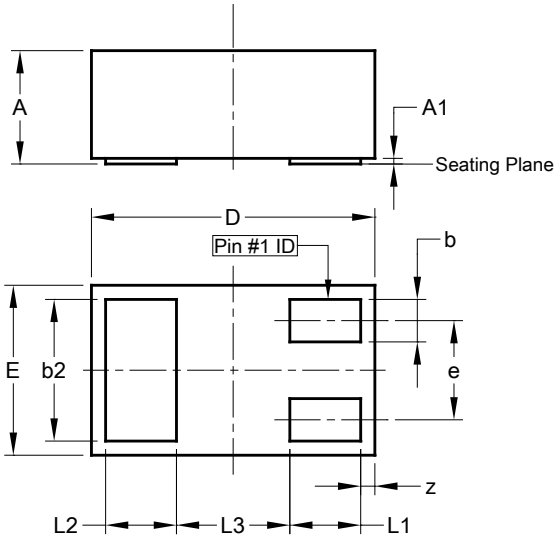
Package Outline Dimensions

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

X2-DFN1006-3

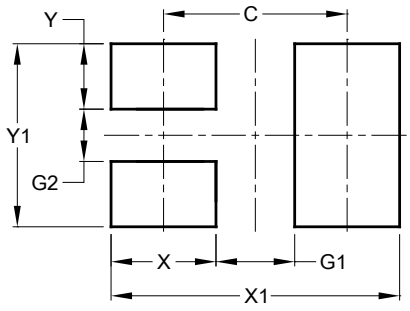


X2-DFN1006-3			
Dim	**Min**	**Max**	**Typ**
A	—	0.40	—
A1	0.00	0.05	0.03
b	0.10	0.20	0.15
b2	0.45	0.55	0.50
D	0.95	1.05	1.00
E	0.55	0.65	0.60
e	-	-	0.35
L1	0.20	0.30	0.25
L2	0.20	0.30	0.25
L3	-	-	0.40
z	0.02	0.08	0.05
All Dimensions in mm			

Suggested Pad Layout

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

X2-DFN1006-3



Dimensions	Value (in mm)
C	0.70
G1	0.30
G2	0.20
X	0.40
X1	1.10
Y	0.25
Y1	0.70

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