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2A SCHOTTKY BARRIER RECTIFIER

Product Summary (@T_A = +25°C)

V_{RRM} (V)	I_O (A)	V_F Max (V)	I_R Max (µA)
20	2	0.525	200

Features and Benefits

- Low Forward Voltage Drop (V_F).
- Better Efficiency and Cooler Operation
- Reduced High-Temperature Reverse Leakage
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Description

The SDM2U20SD3 is a 2A, 20V Schottky rectifier packaged in a small SOD-323 package.

Applications

Providing low V_F and low reserve leakage, this device is ideal for use in general rectification applications such as:

- Low Voltage Rectification
- High-Efficiency DC-DC Conversion
- Switch Mode Power Supply
- Inverse Polarity Protection

Mechanical Data

- Case: SOD-323
- Case Material: Molded Plastic.
  UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Alloy 42 Leadframe.
  Solderable per MIL-STD-202, Method 208 e3
- Polarity: Cathode Band
- Weight: 0.006 grams (Approximate)

SOD-323

Top View

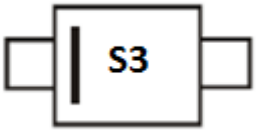
Ordering Information (Note 4)

Part Number	Case	Packaging
SDM2U20SD3-7	SOD-323	3,000/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

SOD-323



S3 = Product Type Marking Code
Cathode band denotes polarity

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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{RM}	20	V
Average Rectified Output Current	I_O	2	A
Repetitive Peak Forward Current, t_p = 1ms square wave with 25% duty cycle	I_{FRM}	6	A
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	20	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	410	°C/W
Typical Thermal Resistance Junction to Ambient (Note 6)	$R_{\theta JA}$	270	°C/W
Typical Thermal Resistance Junction to Case (Note 5)	$R_{\theta JC}$	100	°C/W
Typical Thermal Resistance Junction to Case (Note 6)	$R_{\theta JC}$	70	°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	— — —	0.28 0.40 0.48	— 0.430 0.525	V	I_F = 0.1A, T_J = +25°C I_F = 1A, T_J = +25°C I_F = 2A, T_J = +25°C
Leakage Current (Note 7)	I_R	— —	10 25	80 200	µA µA	V_R = 10V, T_J = +25°C V_R = 20V, T_J = +25°C
Total Capacitance	C_T	—	54	—	pF	V_R = 5V, f = 1 MHz

Notes: 5. Device mounted on FR-4 substrate, 2oz. Copper; minimum recommended pad layout per http://www.diodes.com/datasheets/ap02001.pdf.
6. Device mounted on FR4 substrate, 2oz. Copper, 1-inch square Cu pad.
7. Short duration pulse test used to minimize self-heating effect.

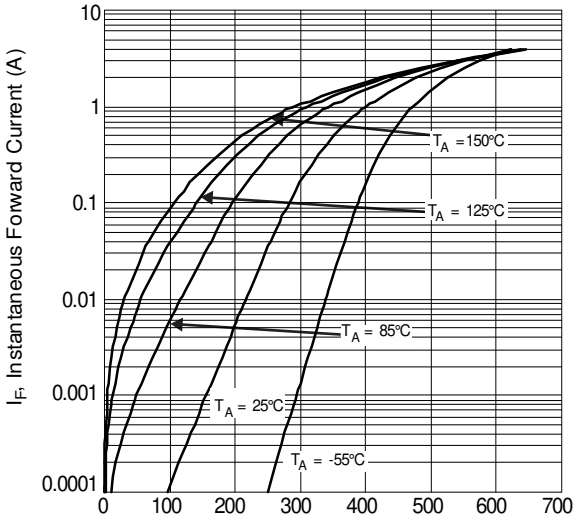


Figure 1 Typical Forward Characteristics

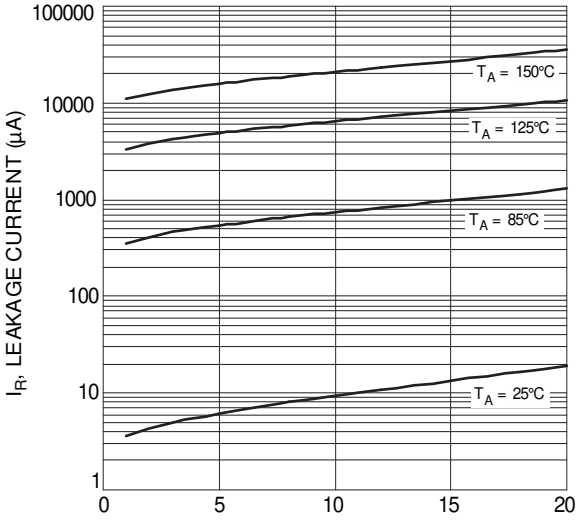


Figure 2 Typical Reverse Characteristics

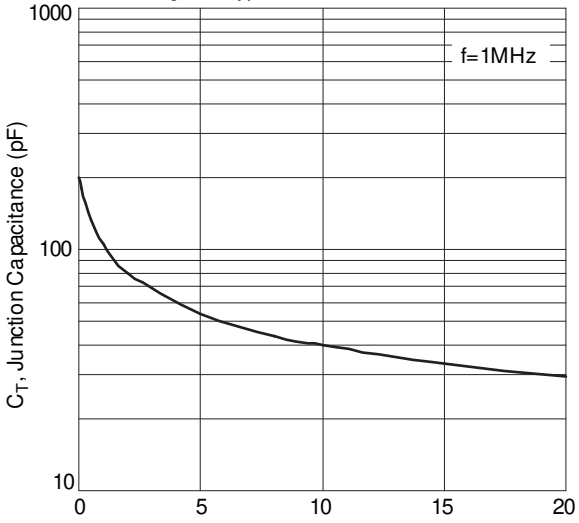


Figure 3 Typical Junction Capacitance

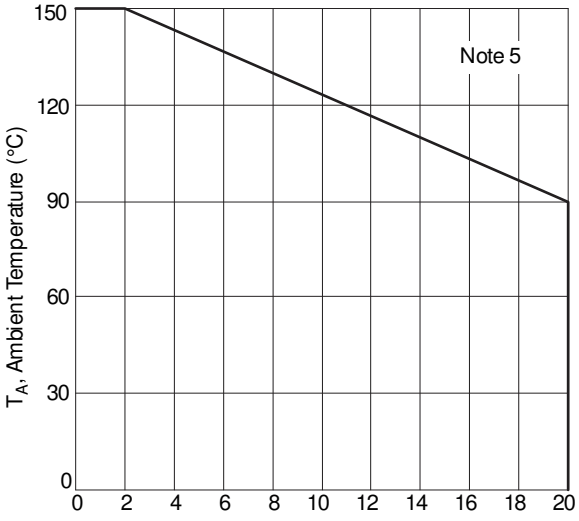


Figure 4 Operating Temperature Derating

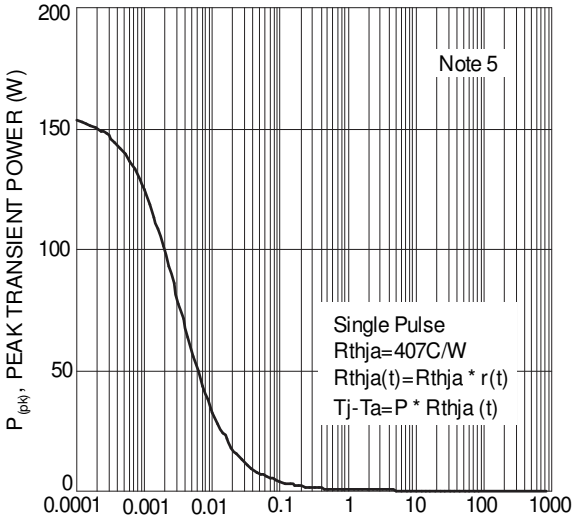


Figure 5 Single Pulse Maximum Power Dissipation

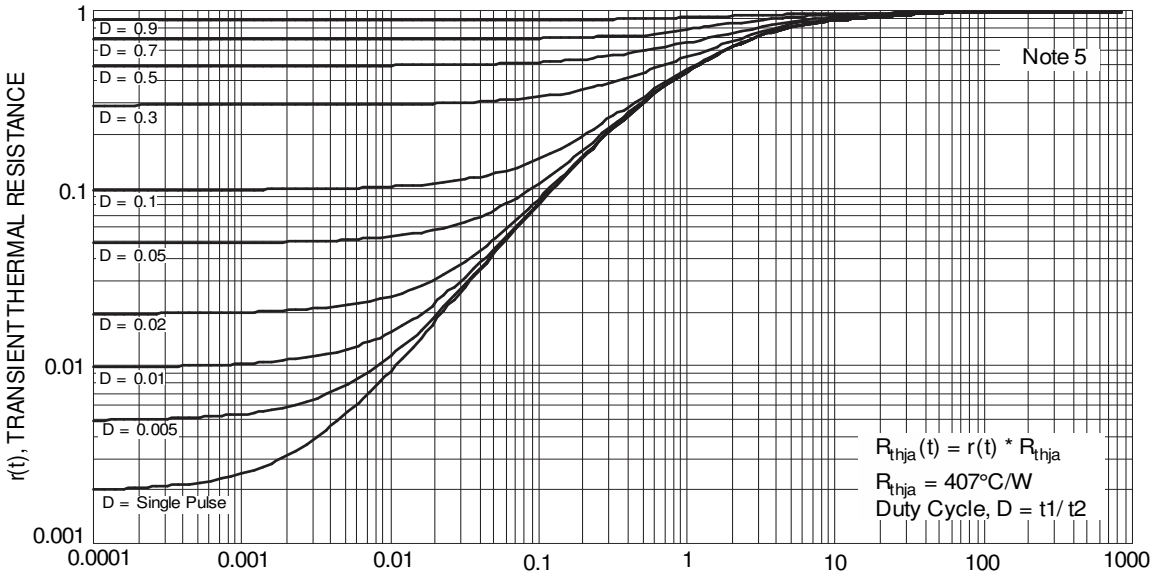
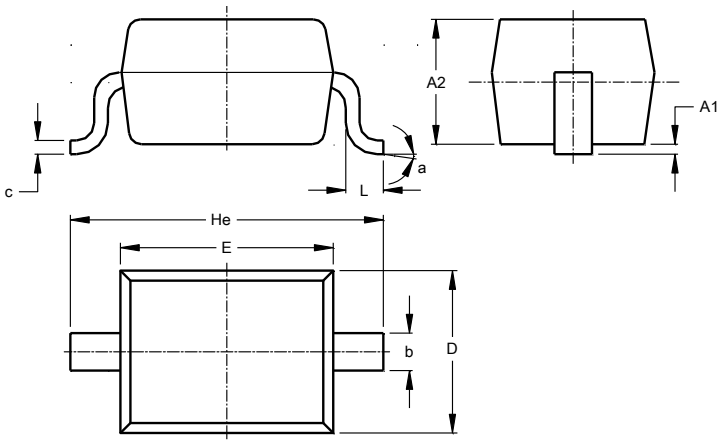


Figure 6 Transient Thermal Resistance

Package Outline Dimensions

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

SOD-323

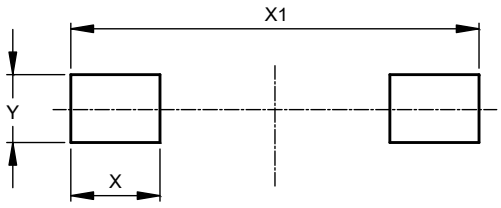


SOD-323			
Dim	**Min**	**Max**	**Typ**
A1	—	0.10	0.05
A2	1.00	1.10	1.05
b	0.25	0.35	0.30
c	0.10	0.15	0.11
D	1.20	1.40	1.30
E	1.60	1.80	1.70
He	2.30	2.70	2.50
L	0.20	0.40	0.30
a	8°		
All Dimensions in mm			

Suggested Pad Layout

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

SOD-323



Dimensions	Value (in mm)
X	0.590
X1	2.700
Y	0.450

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