



**SDM20U30** 

### SURFACE MOUNT SCHOTTKY BARRIER DIODE

### **Features**

- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- Negligible Reverse Recovery Time
- Low Capacitance
- Ultra-Small Surface Mount Package
- Totally Lead Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability

### **Mechanical Data**

- Case: SOD523
- Case Material: Molded Plastic, "Green" Molding Compound.
   UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Band
- Terminals: Finish Matte Tin Annealed over Alloy 42 Leadframe.
   Solderable per MIL-STD-202, Method 208<sup>3</sup>
- Weight: 0.002 grams (Approximate)

#### **SOD523**



Top View

## **Ordering Information** (Note 4)

Part Number	Case	Packaging
SDM20U30-7	SOD523	3,000/Tape & Reel

Notes:

- 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
- 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.

# **Marking Information**

SOD523



LM = Product Type Marking Code



## Maximum Ratings (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>R</sub> WM V <sub>R</sub>	30	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	21	V
Average Rectified Output Current (Note 5)	lo	200	mA
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	1.0	A

## **Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	$P_{D}$	150	mW
Typical Thermal Resistance, Junction to Ambient Air (Note 5) Typical Thermal Resistance, Junction to Ambient Air (Note 6)	R <sub>0JA</sub>	450 240	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +125	°C

# Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

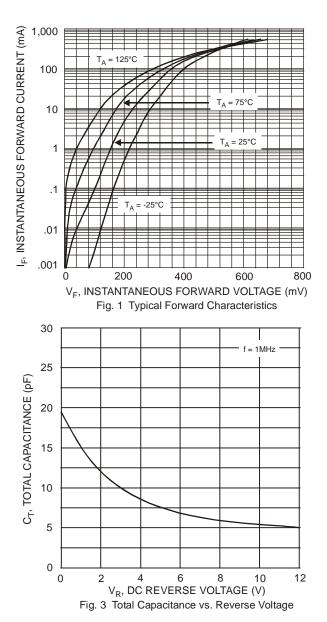
Characteristic	Symbol	Min	Тур	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 7)	V <sub>(BR)R</sub>	30	_	_	V	I <sub>R</sub> = 150μA
Forward Voltage Drop	V <sub>F</sub>	_	_	0.15 0.20 0.35 0.50	V	I <sub>F</sub> =100μA I <sub>F</sub> =1mA I <sub>F</sub> = 20mA I <sub>F</sub> =200mA
Leakage Current (Note 7)	I <sub>R</sub>	_	_	150 30	μΑ μΑ	$V_R = 30V$ $V_R = 10V$
Total Capacitance	C <sub>T</sub>	_	20	_	pF	$V_R = 0V$ , $f = 1.0MHz$

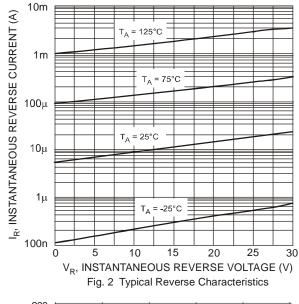
Notes:

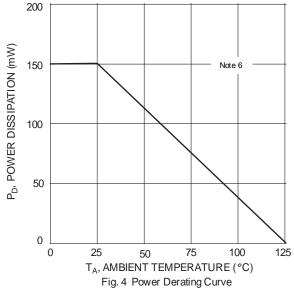
<sup>5.</sup> Part mounted on FR-4 board with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf

<sup>6.</sup> Part mounted on 1-inch sq. 2oz copper pad.
7. Short duration pulse test used to minimize self-heating effect.





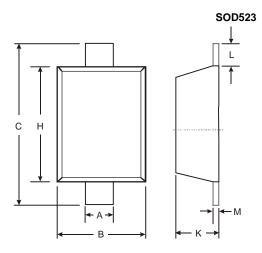






# **Package Outline Dimensions**

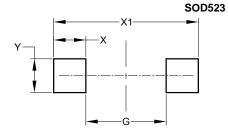
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



SOD523				
Dim	Min	Max		
Α	0.25	0.35		
В	0.70	0.90		
C	1.50	1.70		
Н	1.10	1.30		
K	0.55	0.65		
٦	0.10	0.30		
М	0.10	0.12		
All Dimensions in mm				

# **Suggested Pad Layout**

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



Dimensions	Value (in mm)
G	0.80
Х	0.60
X1	2.00
Υ	0.70



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