

**SURFACE MOUNT SCHOTTKY BARRIER DIODE**

**Product Summary** (@T<sub>A</sub> = +25°C)

V <sub>RRM</sub> (V)	I <sub>O</sub> (mA)	V <sub>F(MAX)</sub> (V)	I <sub>R(MAX)</sub> (μA)
30	200	0.5	150

**Features and Benefits**

- 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)**
- **The SDM20U30Q is suitable for automotive applications requiring specific change control and is AEC-Q101 qualified, is PPAP capable, and is manufactured in IATF16949:2016 certified facilities.**

**Applications**

- SMPS
- DC-DC Converter
- Freewheeling Diodes
- Reverse Polarity Protection
- Blocking Diodes

**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
- Weight: 0.002 grams (Approximate)

SOD523



Top View

**Ordering Information** (Note 4)

Part Number	Compliance	Case	Packaging
SDM20U30Q-7	Automotive	SOD523	3,000/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**

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	V <sub>RRM</sub>	30	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>R</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	21	V
Average Rectified Output Current (Note 5)	I <sub>O</sub>	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

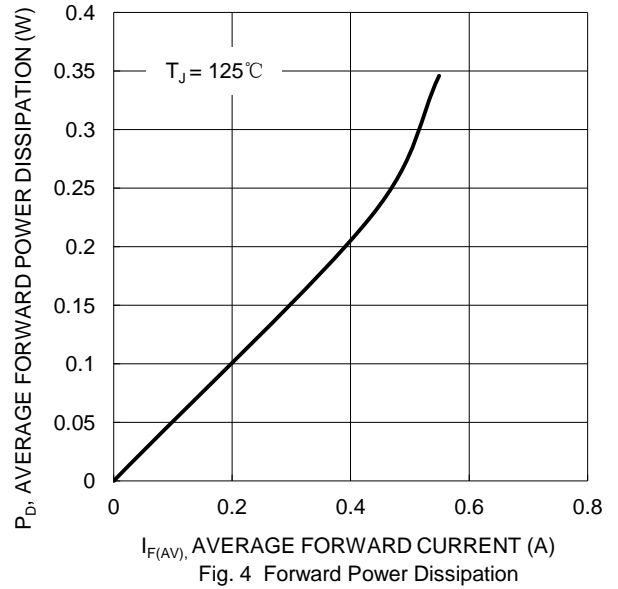
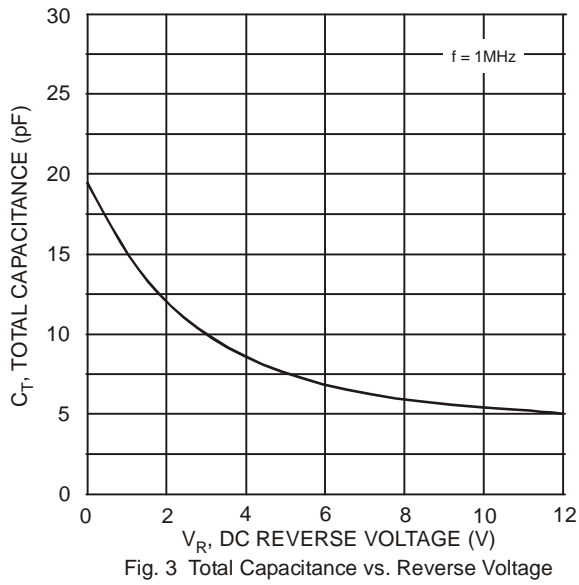
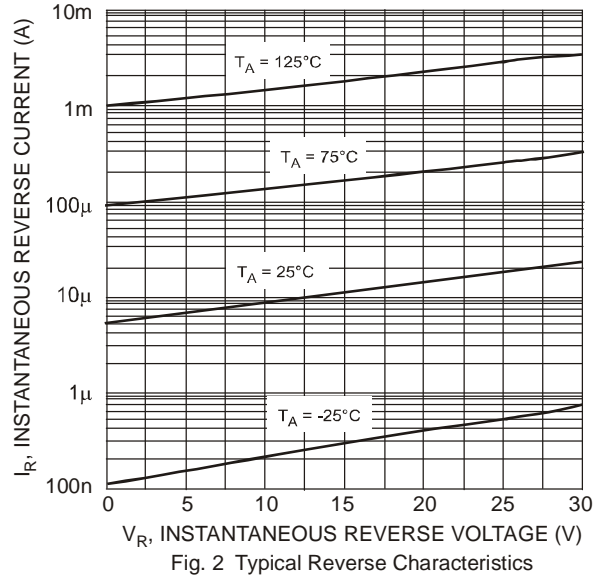
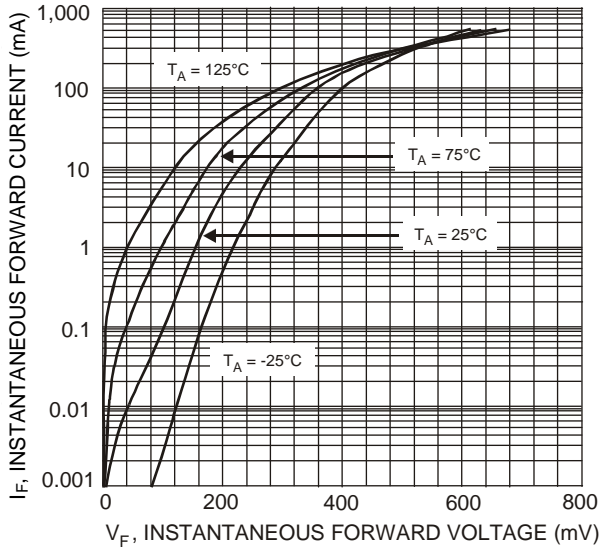
**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Ambient Air (Note 5)	R <sub>θJA</sub>	450	°C/W
Typical Thermal Resistance, Junction to Ambient Air (Note 6)		300	
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	Typ	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	μA μA	V <sub>R</sub> = 30V V <sub>R</sub> = 10V
Total Capacitance	C <sub>T</sub>	—	20	—	pF	V <sub>R</sub> = 0V, f = 1.0MHz

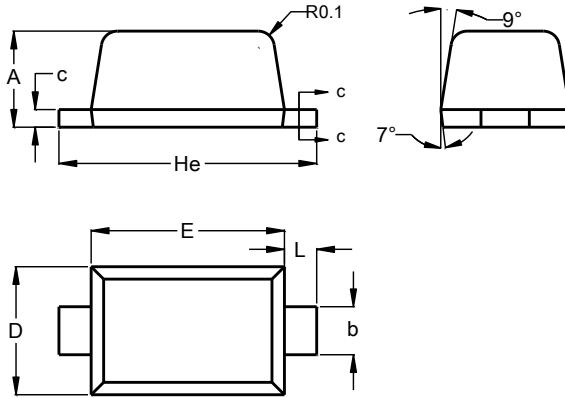
- Notes:
5. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com/package-outlines.html>.
  6. Part mounted on 1-inch sq. 2oz copper pad.
  7. Short duration pulse test used to minimize self-heating effect.



**Package Outline Dimensions**

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

**SOD523**

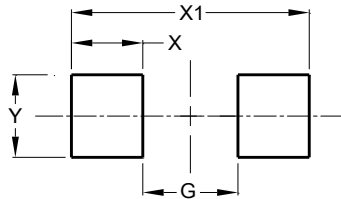


SOD523		
Dim	Min	Max
A	0.55	0.65
b	0.26	0.34
c	0.11	0.17
D	0.75	0.85
E	1.15	1.25
He	1.55	1.65
L	0.10	0.30
All Dimensions in mm		

**Suggested Pad Layout**

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

**SOD523**



Dimensions	Value (in mm)
G	0.80
X	0.60
X1	2.00
Y	0.70

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