

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

V <sub>RM</sub> (V)	I <sub>O</sub> (mA)	V <sub>F(MAX)</sub> (V)	I <sub>R(MAX)</sub> (μA)
40	30	0.37	0.5


**Features and Benefits**

- Low Forward Voltage Drop
- Guard Ring Die Construction for Transient Protection
- Ideal for low logic level Applications
- Low Capacitance
- **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**
- **PPAP Capable (Note 4)**

**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)

NEW PRODUCT

SOD523



Top View

**Ordering Information** (Note 5)

Part Number	Compliance	Case	Packaging
SDM03U40Q-7	Automotive	SOD523	3000/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](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. Automotive products are AEC-Q101 qualified and are PPAP capable. Refer to [http://www.diodes.com/product\\_compliance\\_definitions.html](http://www.diodes.com/product_compliance_definitions.html).
  5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

**Marking Information**

SOD523



LK = Product Type Marking Code

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

Characteristic	Symbol	Value	Unit
Peak Reverse Voltage	V <sub>RM</sub>	40	V
DC Reverse Voltage	V <sub>R</sub>	30	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	21	V
Average Rectified Current	I <sub>O</sub>	30	mA
Non-Repetitive Peak Forward Surge Current @8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	200	mA

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Ambient (Note 6)	R <sub>θJA</sub>	450	°C/W
Thermal Resistance, Junction to Ambient (Note 7)		300	
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-40 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 8)	V <sub>(BR)R</sub>	40	—	—	V	I <sub>R</sub> = 10μA
Forward Voltage	V <sub>F</sub>	—	290	370	mV	I <sub>F</sub> = 1mA
Peak Reverse Current (Note 8)	I <sub>R</sub>	—	—	0.5	μA	V <sub>R</sub> = 30V
Total Capacitance	C <sub>T</sub>	—	2	—	pF	V <sub>R</sub> = 1V, f = 1.0MHz

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

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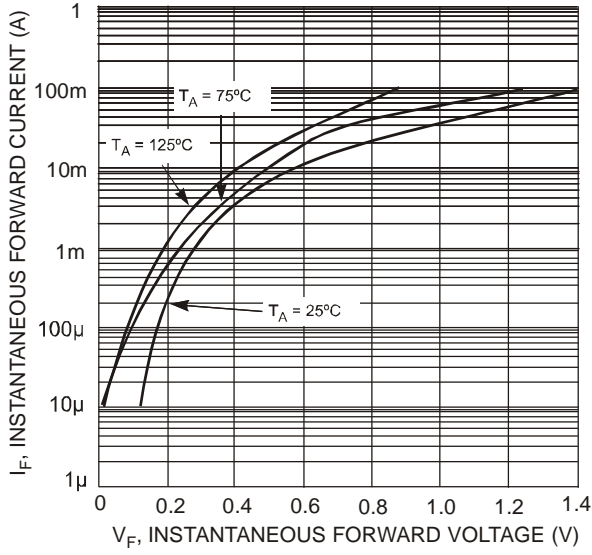


Fig. 1 Typical Forward Characteristics

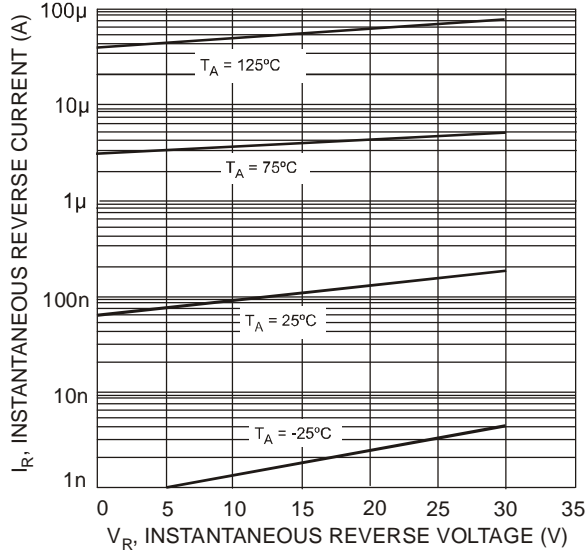


Fig. 2 Typical Reverse Characteristics

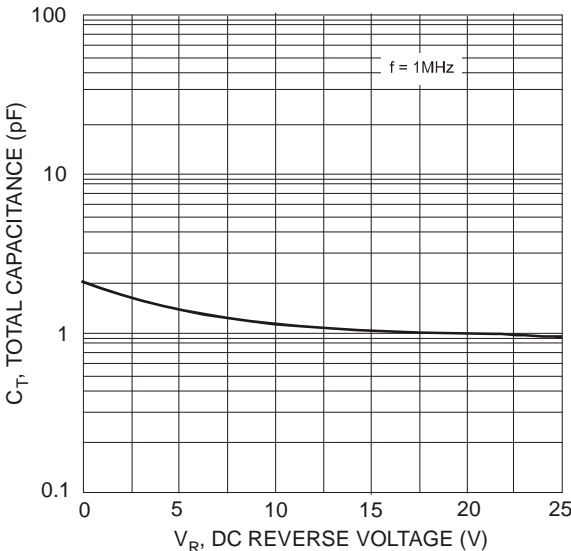


Fig. 3 Total Capacitance vs. Reverse Voltage

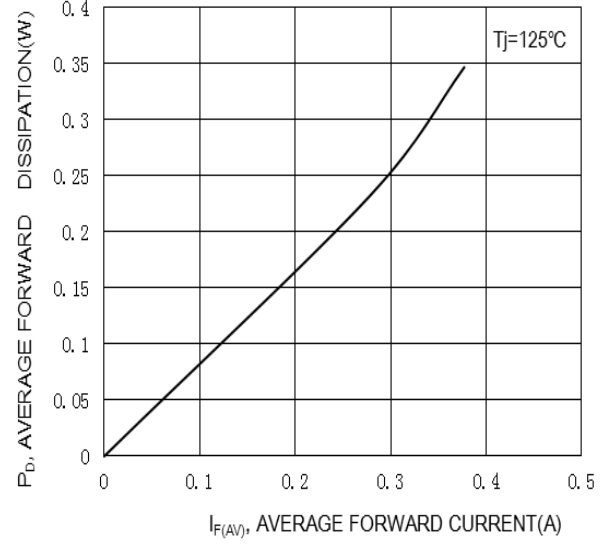
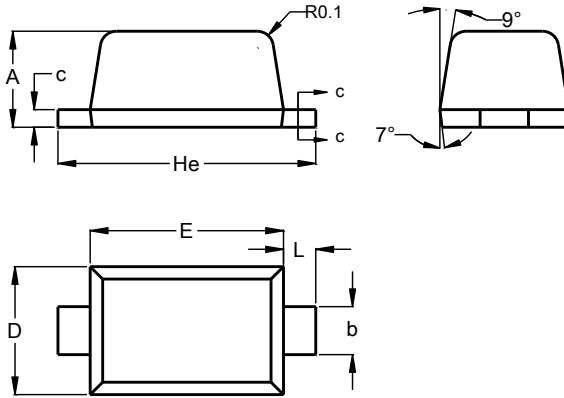


Fig. 4 Forward Power Dissipation

**Package Outline Dimensions**

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

**SOD523**



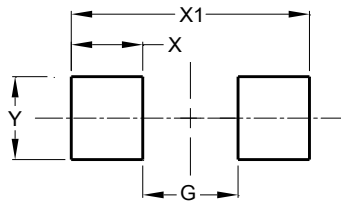
SOD523		
Dim	Min	Max
A	0.55	0.65
b	0.26	0.34
c	0.11	0.17
D	0.75	0.85
E	1.15	1.25
He	1.55	1.65
L	0.10	0.30
All Dimensions in mm		

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**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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