

## Features

- Low Forward Voltage Drop
- Guard Ring 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)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](mailto:contact@diodes.com) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

## Mechanical Data

- Package: SOD523
- Package 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: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 (E3)
- Weight: 0.002 grams (Approximate)

SOD523



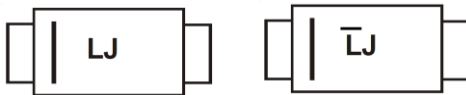
Top View

## Ordering Information (Note 4)

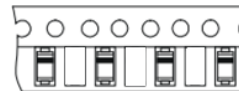
Part Number	Package	Packing	
		Qty.	Carrier
SDM10U45-7 (Note 5)	SOD523	3000	Tape & Reel

- 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/>.
  5. Dispensed in every other cavity of the tape.

## Marking Information



LJ & LJ = Product Type Marking Code



Note 5

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

Characteristic	Symbol	Value	Unit
Maximum Peak Reverse Voltage	V <sub>RM</sub>	45	V
Reverse Voltage	V <sub>R</sub>	40	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	28	V
Average Forward Current	I <sub>O</sub>	100	mA
Maximum (Peak) Forward Current	I <sub>FM</sub>	300	mA
Non-Repetitive Peak Forward Surge Current @ t ≤ 10ms	I <sub>FSM</sub>	1	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Power Dissipation (Note 6)	P <sub>D</sub>	150	mW
Thermal Resistance, Ambient Air (Note 6)	R <sub>θJA</sub>	667	°C/W
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 7)	V <sub>(BR)R</sub>	30	—	—	V	I <sub>R</sub> = 100μA
Forward Voltage Drop	V <sub>F</sub>	—	280	—	mV	I <sub>F</sub> = 1.0mA
		—	360	—		I <sub>F</sub> = 15mA
		—	470	550		I <sub>F</sub> = 50mA
		—	580	800		I <sub>F</sub> = 100mA
Reverse Current (Note 7)	I <sub>R</sub>	—	—	1.0	μA	V <sub>R</sub> = 25V
Total Capacitance	C <sub>T</sub>	—	4	15	pF	V <sub>R</sub> = 10V, 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>.  
@ T<sub>A</sub> = +25°C.
  7. Short duration pulse test used so as to minimize self-heating effect.

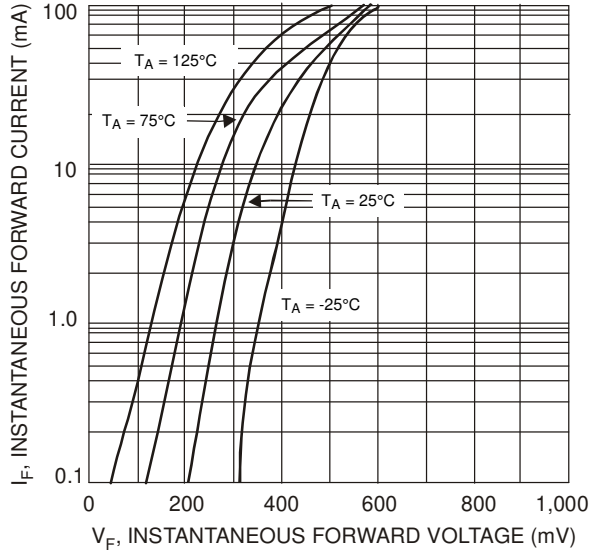


Fig. 1 Typical Forward Characteristics

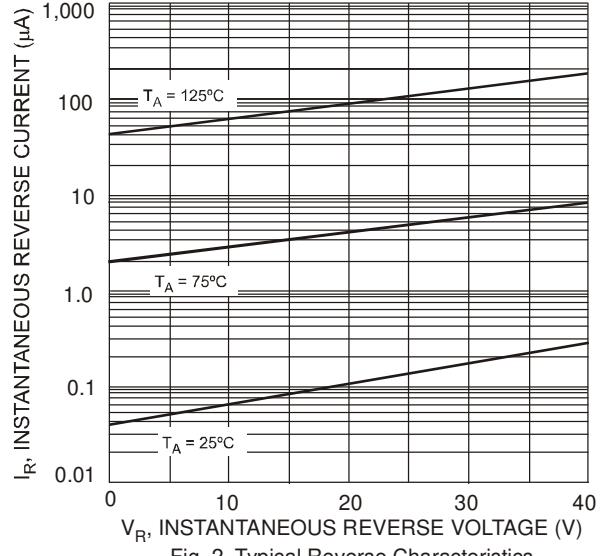


Fig. 2 Typical Reverse Characteristics

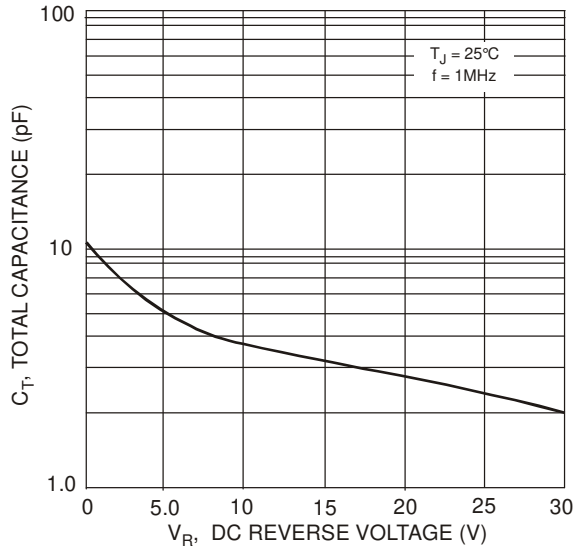


Fig. 3 Total Capacitance vs. Reverse Voltage

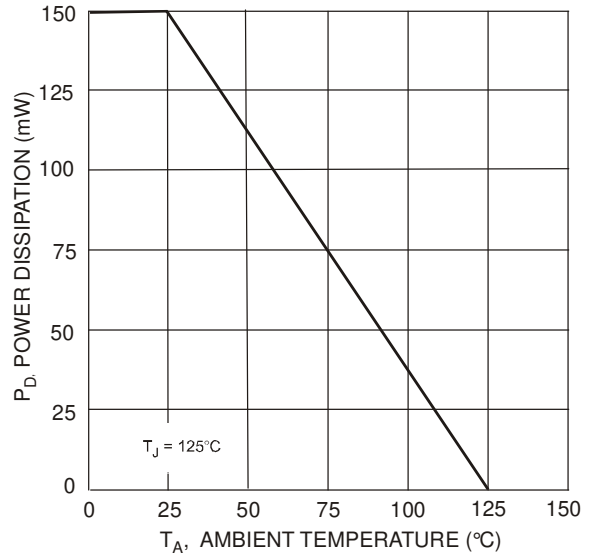
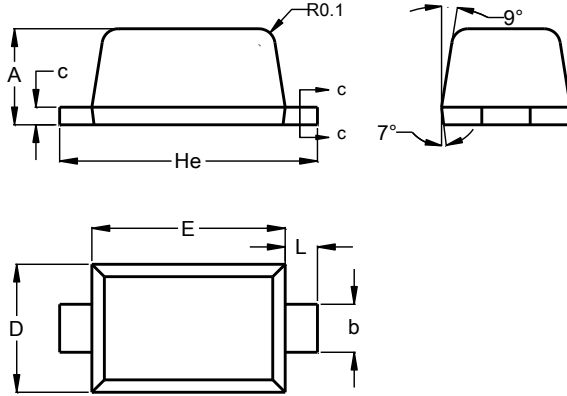


Fig. 4 Power Derating Curve

**Package Outline Dimensions**

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

**SOD523**

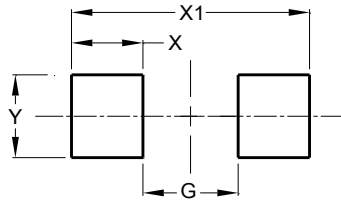


SOD523		
Dim	Min	Max
<b>A</b>	0.55	0.65
<b>b</b>	0.26	0.34
<b>c</b>	0.11	0.17
<b>D</b>	0.75	0.85
<b>E</b>	1.15	1.25
<b>He</b>	1.55	1.65
<b>L</b>	0.10	0.30
<b>All Dimensions in mm</b>		

**Suggested Pad Layout**

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

**SOD523**



Dimensions	Value (in mm)
<b>G</b>	0.80
<b>X</b>	0.60
<b>X1</b>	2.00
<b>Y</b>	0.70

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