SURFACE MOUNT SCHOTTKY BARRIER DIODE

Features

- 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)**
- **This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability.**
  https://www.diodes.com/quality/product-definitions/
- **An Automotive-Compliant Part is Available Under Separate Datasheet (SDM03U40Q)**

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: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.002 grams (Approximate)

SOD523

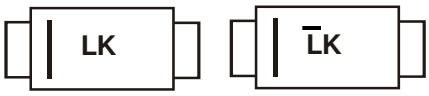
Top View

Ordering Information (Note 4)

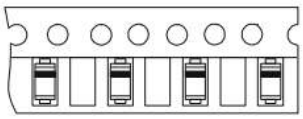
Part Number	Package	Packing	
		Qty.	Carrier
SDM03U40-7	SOD523	3000	Tape & Reel

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/.

Marking Information



LK or $\overline{LK}$ = Product Type Marking Code



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Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Reverse Voltage	V_{RM}	40	V
DC Reverse Voltage	V_R	30	V
RMS Reverse Voltage	$V_{R(RMS)}$	21	V
Average Rectified Current	I_O	30	mA
Non-Repetitive Peak Forward Surge Current @8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	200	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	150	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	667	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-40 to +125	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	40	—	—	V	I_R = 10μA
Forward Voltage	V_F	—	290	370	mV	I_F = 1mA
Peak Reverse Current (Note 6)	I_R	—	—	0.5	μA	V_R = 30V
Total Capacitance	C_T	—	2	—	pF	V_R = 1V, 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. Short duration pulse test used to minimize self-heating effect.

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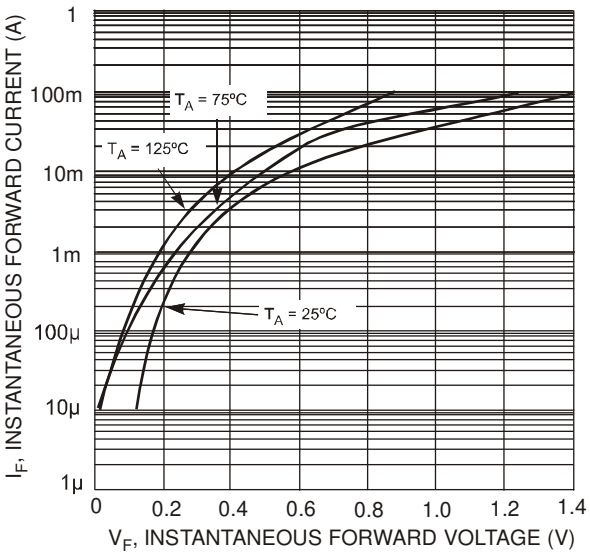

Fig. 1 Typical Forward Characteristics

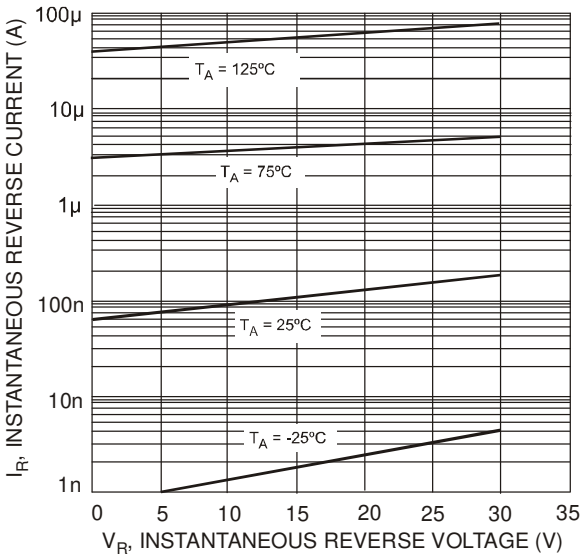

Fig. 2 Typical Reverse Characteristics

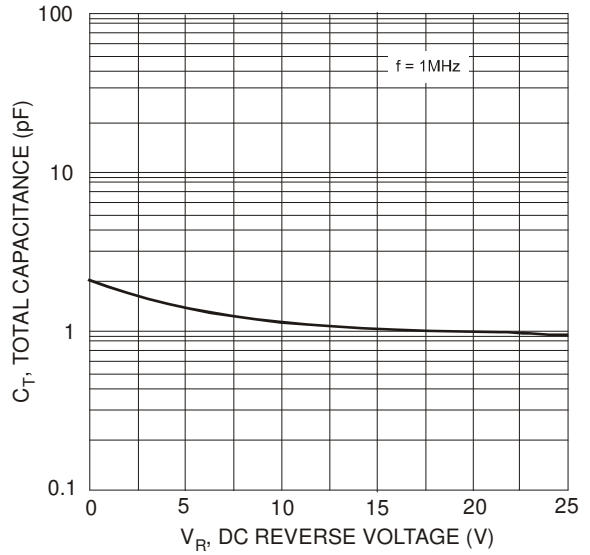

Fig. 3 Total Capacitance vs. Reverse Voltage

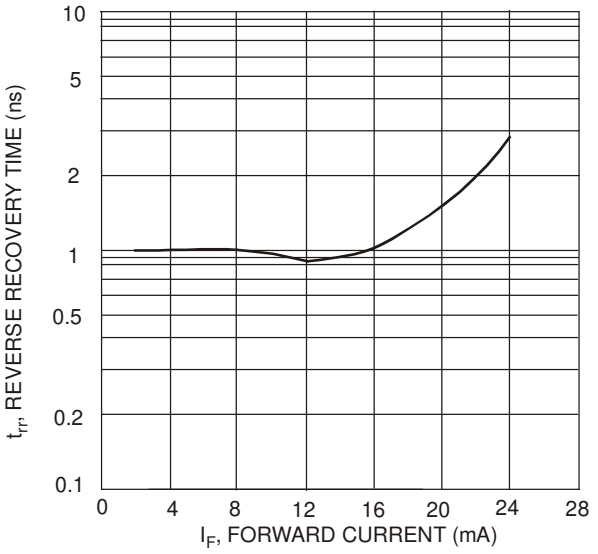

Fig. 4 Typical Reverse Recovery Time Characteristics

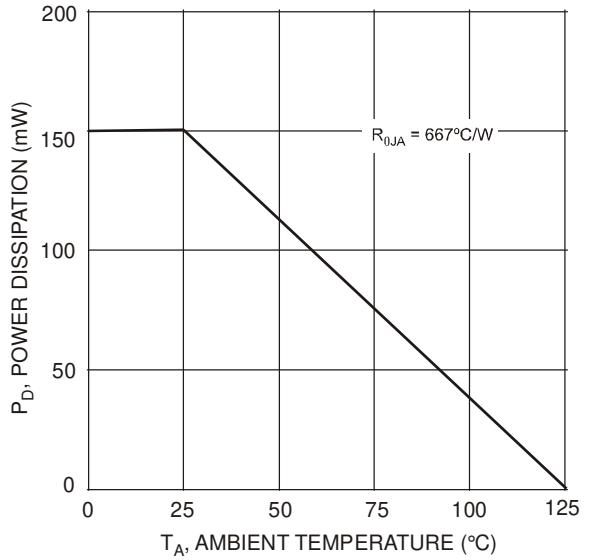

Fig. 5 Power Derating Curve

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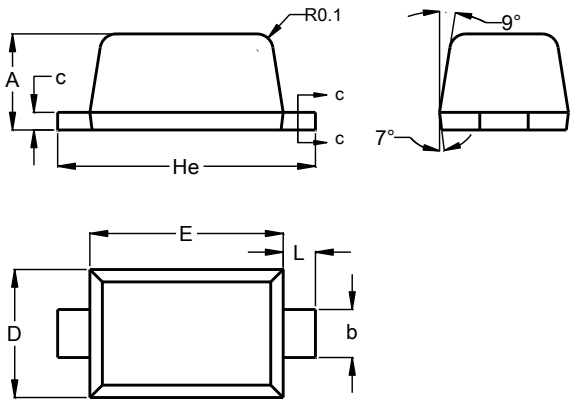
Package Outline Dimensions

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

SOD523

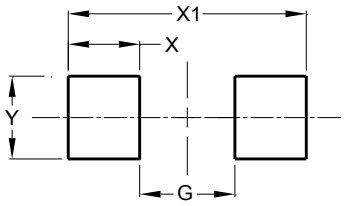


SOD523		
Dim	**Min**	**Max**
A	0.55	0.65
b	0.26	0.34
c	0.11	0.17
D	0.75	0.85
E	1.15	1.25
He	1.55	1.65
L	0.10	0.30
All Dimensions in mm		

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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