



**THE DATASHEET OF
SDM03U40Q-7**



Product Summary (@T_A = +25°C)

V _{RM} (V)	I _O (mA)	V _{F(MAX)} (V)	I _{R(MAX)} (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 **e3**
- Weight: 0.002 grams (Approximate)

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 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.
 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_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
Thermal Resistance, Junction to Ambient (Note 6)	R _{θJA}	450	°C/W
Thermal Resistance, Junction to Ambient (Note 7)		300	
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 8)	V _{(BR)R}	40	—	—	V	I _R = 10μA
Forward Voltage	V _F	—	290	370	mV	I _F = 1mA
Peak Reverse Current (Note 8)	I _R	—	—	0.5	μA	V _R = 30V
Total Capacitance	C _T	—	2	—	pF	V _R = 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.

NEW PRODUCT

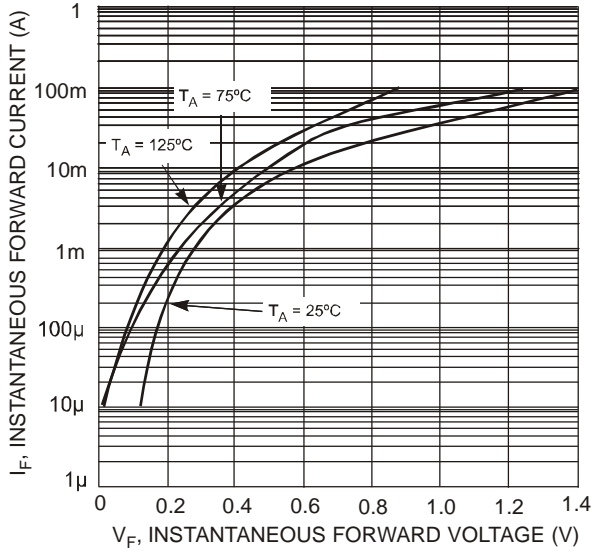


Fig. 1 Typical Forward Characteristics

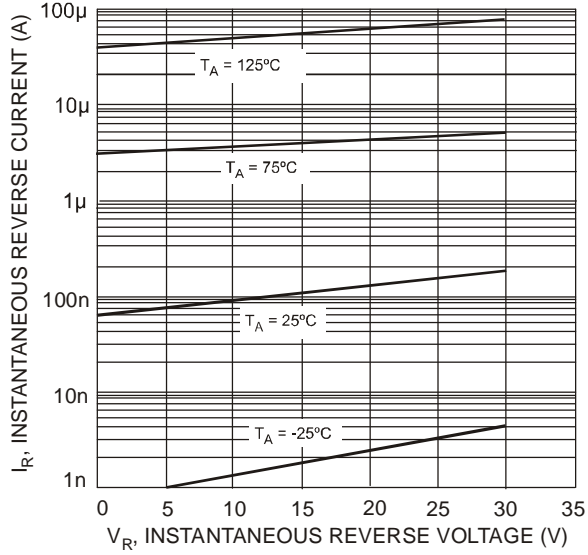


Fig. 2 Typical Reverse Characteristics

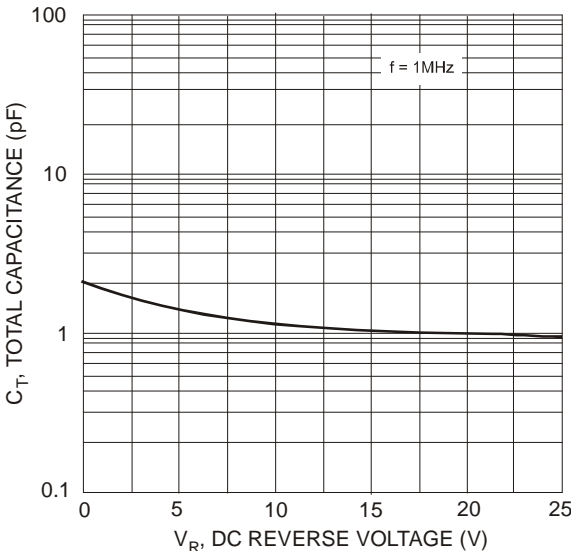


Fig. 3 Total Capacitance vs. Reverse Voltage

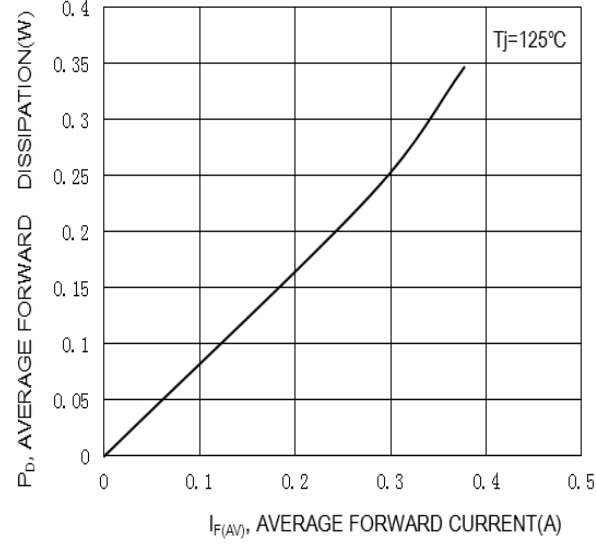
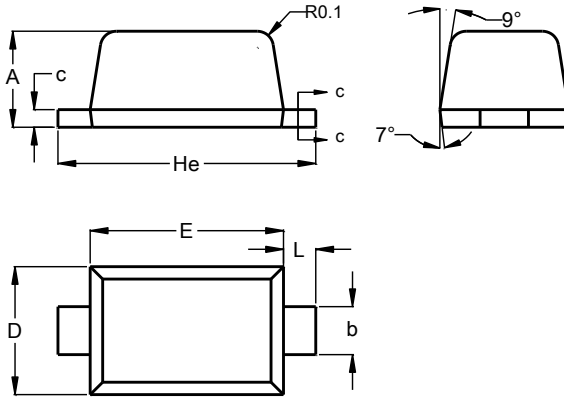


Fig. 4 Forward Power Dissipation

Package Outline Dimensions

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

SOD523



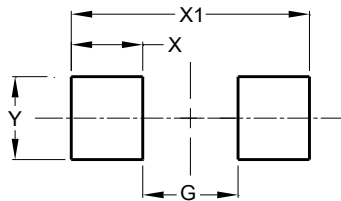
SOD523		
Dim	Min	Max
A	0.55	0.65
b	0.26	0.34
c	0.11	0.17
D	0.75	0.85
E	1.15	1.25
He	1.55	1.65
L	0.10	0.30
All Dimensions in mm		

NEW PRODUCT

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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