

Features

- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- Negligible Reverse Recovery Time
- Low Reverse Capacitance
- Ultra-Small Surface Mount Package
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **"Green" Device (Notes 3 and 4)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: SOD-523
- Case Material: Molded Plastic, "Green" Molding Compound, Note 4. 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
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.002 grams (approximate)



Top View

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	40	V
RMS Reverse Voltage	V _{R(RMS)}	28	V
Forward Continuous Current (Note 2)	I _{FM}	250	mA
Non-Repetitive Peak Forward Surge Current @ t ≤ 1.0s	I _{FSM}	1.0	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 2)	P _D	150	mW
Thermal Resistance, Junction to Ambient Air (Note 2)	R _{θJA}	667	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +125	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 5)	V _{(BR)R}	40	—	—	V	I _R = 10μA
Forward Voltage Drop	V _F	—	—	0.37 0.60	V	I _F = 20mA I _F = 200mA
Peak Reverse Current (Note 5)	I _R	—	—	5 1	μA μA	V _R = 30V V _R = 10V
Total Capacitance	C _T	—	50	—	pF	V _R = 0V, f = 1.0MHz
Reverse Recovery Time	t _{rr}	—	10	—	ns	I _F = I _R = 200mA, I _{rr} = 0.1 x I _R , R _L = 100Ω

- Notes:
1. No purposefully added lead.
 2. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
 3. Diodes Inc.'s "Green" Policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
 4. Product manufactured with date code 0627 (week 27, 2006) and newer are built with Green Molding Compound. Product manufactured prior to date code 0627 are built with Non-Green Molding Compound and may contain Halogens or Sb₂O₃ Fire Retardants.
 5. Short duration pulse test used so as to minimize self-heating effect.

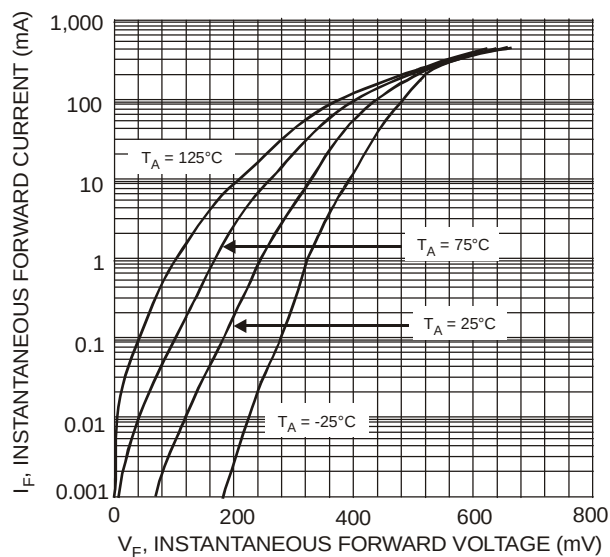


Fig. 1 Typical Forward Characteristics

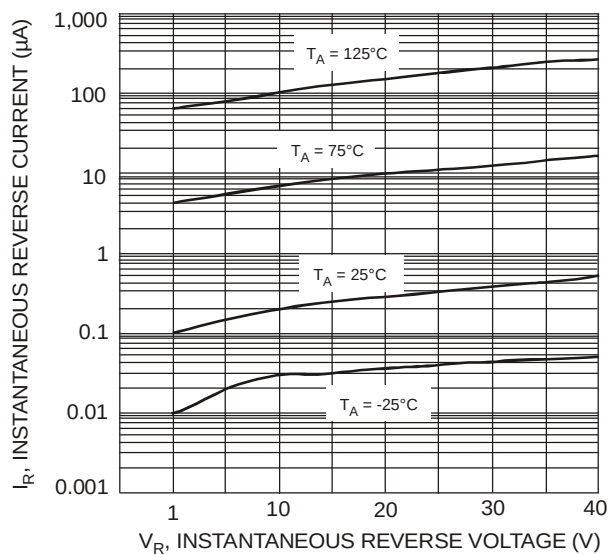


Fig. 2 Typical Reverse Characteristics

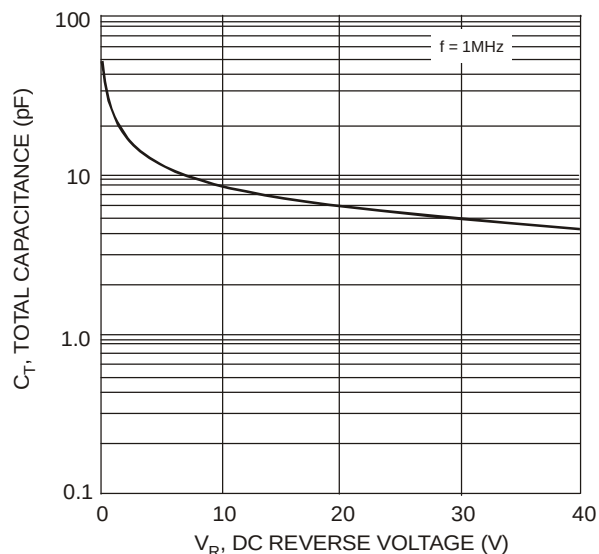


Fig. 3 Total Capacitance vs. Reverse Voltage

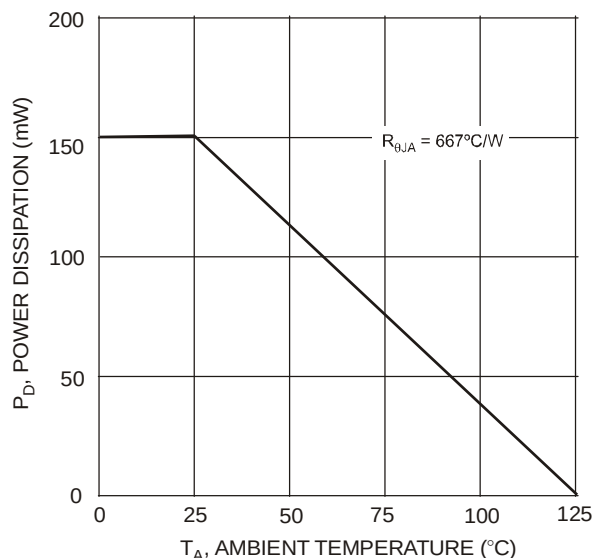


Fig. 4 Power Derating Curve

Ordering Information (Notes 4 and 6)

Device	Packaging	Shipping
SDM20U40-7 (Note 7)	SOD-523	3000/Tape & Reel

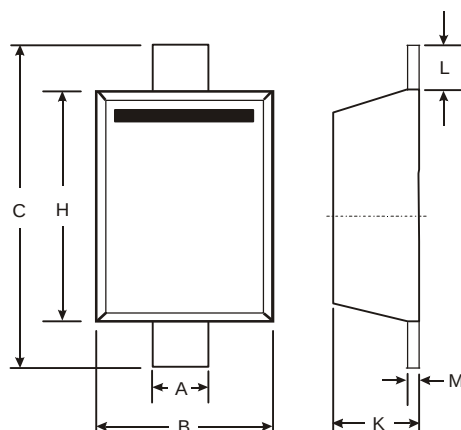
Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.
 7. Dispensed in every other cavity of the tape.

Marking Information



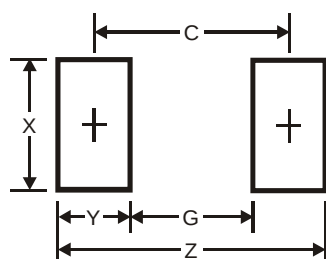
S4 = Product Type Marking Code

Package Outline Dimensions



SOD-523		
Dim	Min	Max
A	0.25	0.35
B	0.70	0.90
C	1.50	1.70
H	1.10	1.30
K	0.55	0.65
L	0.10	0.30
M	0.10	0.12
All Dimensions in mm		

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.3
G	1.1
X	0.8
Y	0.6
C	1.7

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