

Product Summary

$V_R(V)$	$I_F (A)$	$V_F \text{ Max (V)}$ @ $+25^\circ\text{C}$	$I_R \text{ Max } (\mu\text{A})$ @ $+25^\circ\text{C}$
30	0.5	0.45	500

Applications

- DC-DC Converters
- Mobile Telecommunications
- Blocking Diodes
- Reverse Polarity Protection

Features and Benefits

- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- High Conductance
- Totally Lead-Free Finish & 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)

Mechanical Data

- Case: SOD323
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Lead-Free Plating (Matte Tin Finish Annealed over Alloy 42 Leadframe). Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: Cathode Band
- Weight: 0.004 grams (Approximate)

SOD323



Top View

Ordering Information (Note 5)

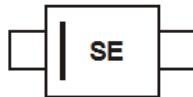
Part Number	Compliance	Case	Packaging
B0530WSQ-13-F	Automotive	SOD323	10,000/Tape & Reel
B0530WSQ-7-F	Automotive	SOD323	3,000/Tape & Reel

Notes:

- No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
- 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.
- Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- Automotive products are AEC-Q101 qualified and are PPAP capable. Refer to http://www.diodes.com/quality/product_compliance_definitions/.
- For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information

SOD323



SE = Product Type Marking Code

Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitance load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}		
Working Peak Reverse Voltage	V_{RWM}	30	V
DC Blocking Voltage	V_R		
RMS Reverse Voltage	$V_{R(\text{RMS})}$	21	V
Average Rectified Output Current (See Figure 1)	I_O	0.5	A
Peak Repetitive Forward Current $t_p = 8.3\text{ms}$, Half Sine-Wave	I_{FRM}	3.5	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	2	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P_D	235	mW
Typical Thermal Resistance Junction to Ambient (Note 6)	$R_{\theta JA}$	426	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-40 to +125	°C

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	30	—	—	V	$I_R = 500\mu\text{A}$
Forward Voltage Drop	V_F	—	0.40	0.36 0.45	V	$I_F = 0.1\text{A}$ $I_F = 0.5\text{A}$
Leakage Current (Note 7)	I_R	—	—	80 100 500	μA	$V_R = 15\text{V}$ $V_R = 20\text{V}$ $V_R = 30\text{V}$
Total Capacitance	C_T	—	58	—	pF	$f = 1\text{MHz}$, $V_R = 0\text{V DC}$

Notes: 6. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
7. Short duration pulse test used to minimize self-heating effect.

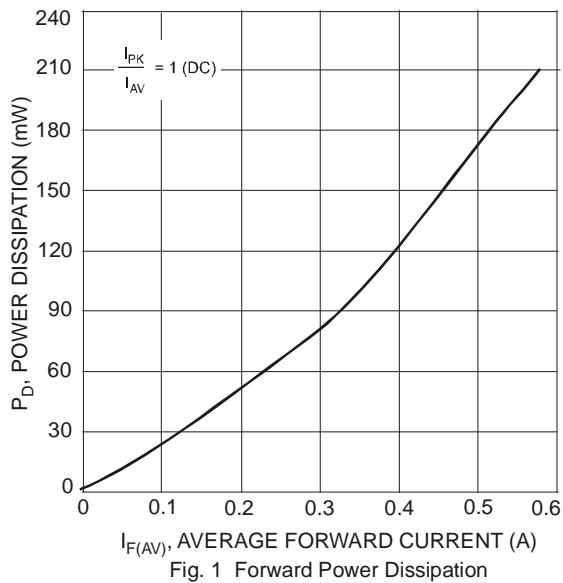


Fig. 1 Forward Power Dissipation

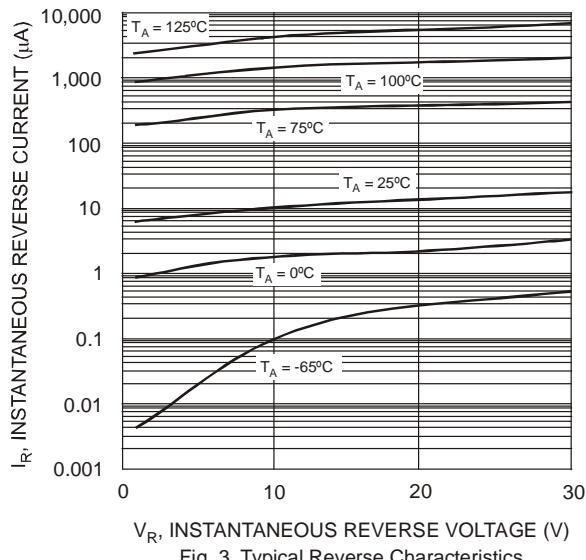


Fig. 3 Typical Reverse Characteristics

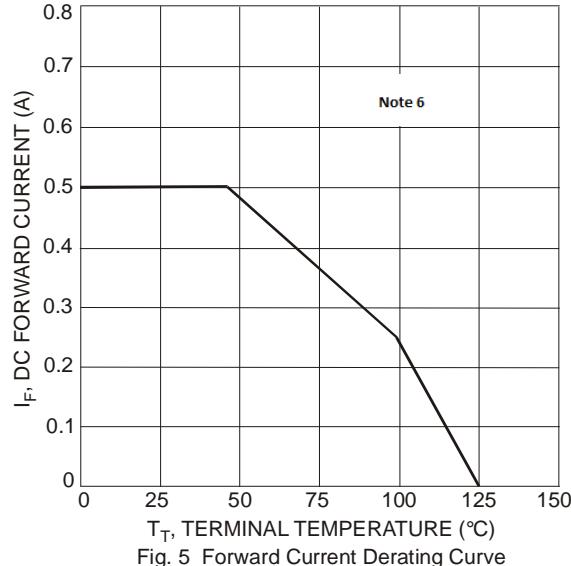


Fig. 5 Forward Current Derating Curve

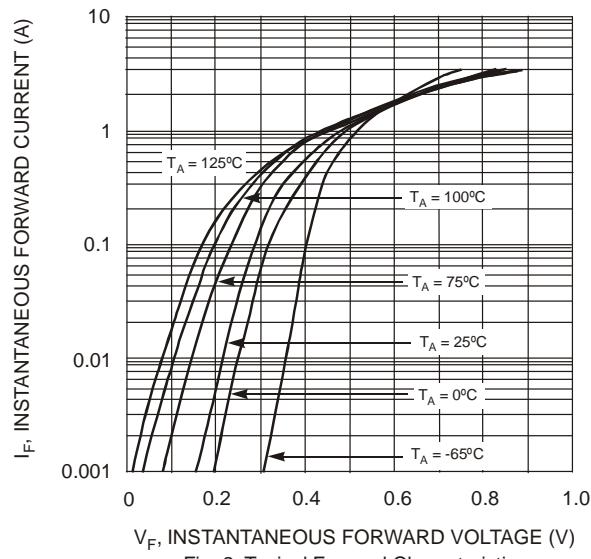


Fig. 2 Typical Forward Characteristics

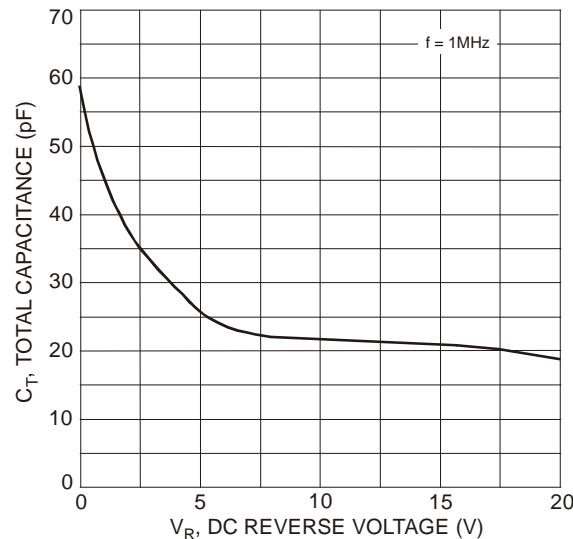
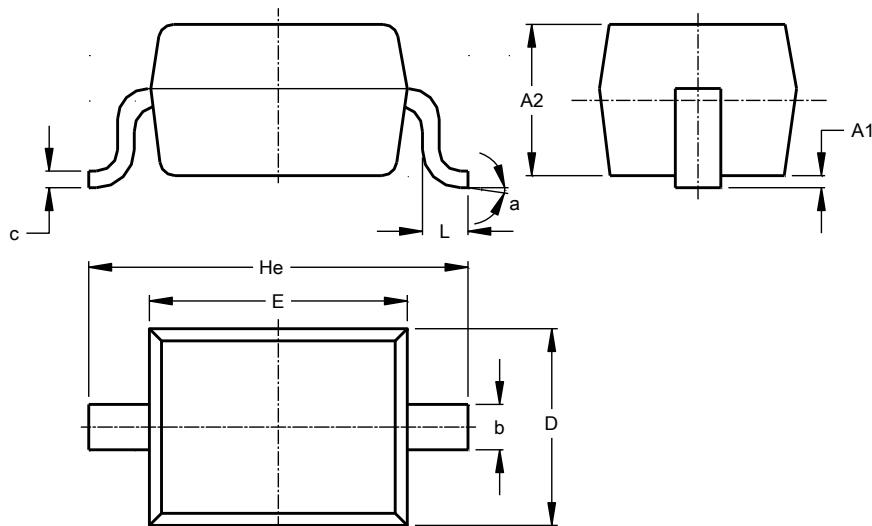


Fig. 4 Total Capacitance vs. Reverse Voltage

Package Outline Dimensions

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.

SOD323



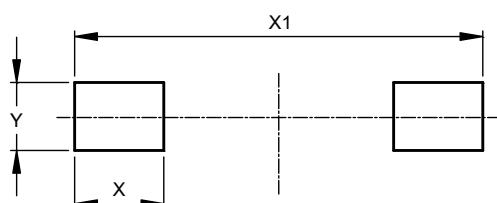
SOD323			
Dim	Min	Max	Typ
A1	—	0.10	0.05
A2	1.00	1.10	1.05
b	0.25	0.35	0.30
c	0.10	0.15	0.11
D	1.20	1.40	1.30
E	1.60	1.80	1.70
He	2.30	2.70	2.50
L	0.20	0.40	0.30
a	0°	8°	—

All Dimensions in mm

Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.

SOD323



Dimensions	Value (in mm)
X	0.590
X1	2.700
Y	0.450

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