SURFACE MOUNT FAST SWITCHING DIODE

Features

- Fast Switching Speed
- Small Surface Mount Package
- For General Purpose Switching Applications
- High Conductance
- **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)**

Mechanical Data

- Case: SOD323
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Leads: Matte Tin Finish Annealed over Alloy 42 Leadframe (Lead-Free Plating). Solderable per MIL-STD-202, Method 208 e3
- Polarity: Cathode Band
- Weight: 0.004 grams (Approximate)

SOD323

Top View

Device Schematic

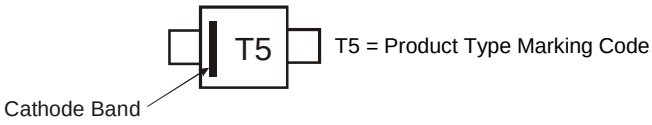
Ordering Information (Note 5)

Part Number	Compliance	Case	Packaging
1N4448WS-7-F	Standard	SOD323	3,000/Tape & Reel
1N4448WSQ-7-F	Automotive	SOD323	3,000/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. For more information, please 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

SOD323



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

Characteristic		Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage		V_{RM}	100	V
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V_{RRM} V_{RWM} V_R	75	V
RMS Reverse Voltage		$V_{R(RMS)}$	53	V
Forward Continuous Current		I_{FM}	500	mA
Average Rectified Output Current		I_O	250	mA
Non-Repetitive Peak Forward Surge Current	@t = 1.0μs @t = 1.0s	I_{FSM}	4 0.5	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 7)	P_D	200	mW
Thermal Resistance Junction to Ambient Air (Note 7)	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

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

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	75	—	V	I_R = 2.5μA
Forward Voltage	V_{FM}	0.62 — — —	0.72 0.855 1.0 1.25	V	I_F = 5.0mA I_F = 10mA I_F = 100mA I_F = 150mA
Peak Reverse Current (Note 6)	I_{RM}	—	2.5 50 30 25	μA μA μA nA	V_R = 75V V_R = 75V, T_J = +150°C V_R = 25V, T_J = +150°C V_R = 20V
Total Capacitance	C_T	—	4.0	pF	V_R = 0, f = 1.0MHz
Reverse Recovery Time	t_{RR}	—	4.0	ns	I_F = I_R = 10mA, I_{RR} = 0.1 x I_R, R_L = 100Ω

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

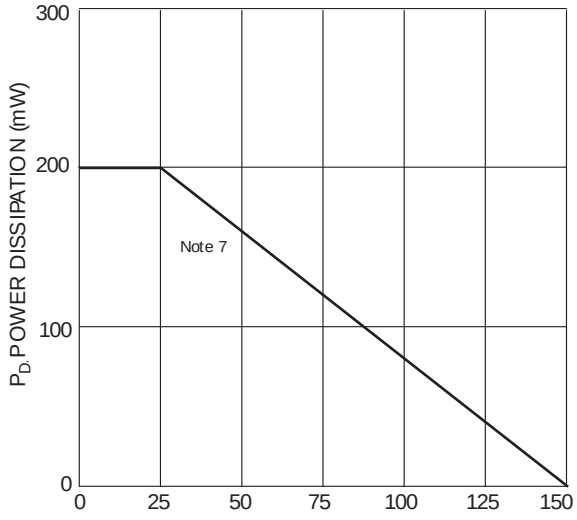


Figure 1 Forward Current Derating Curve

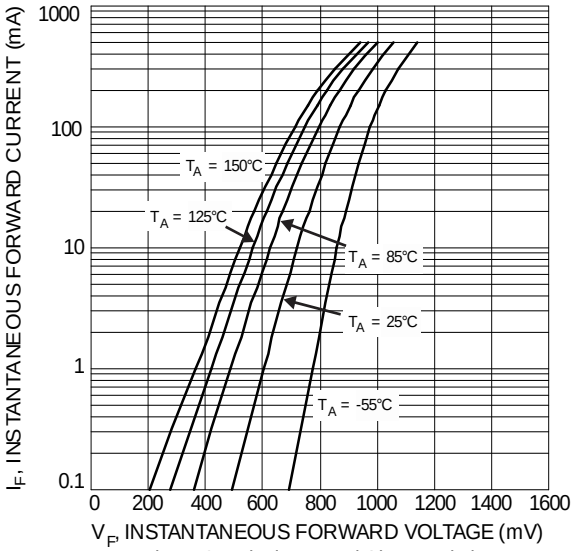


Figure 2 Typical Forward Characteristics

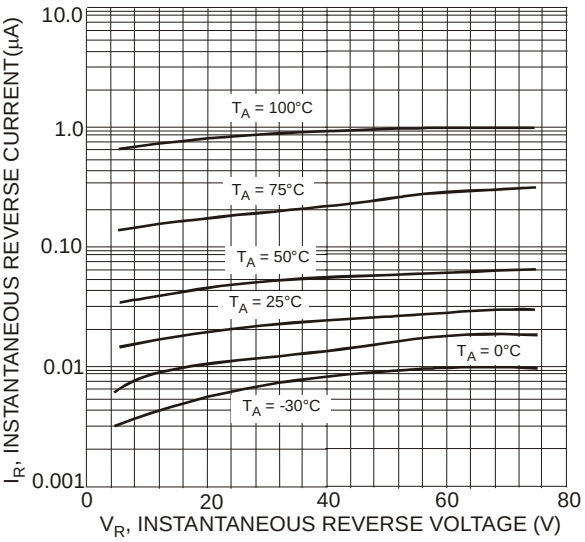


Figure 3 Typical Reverse Characteristics

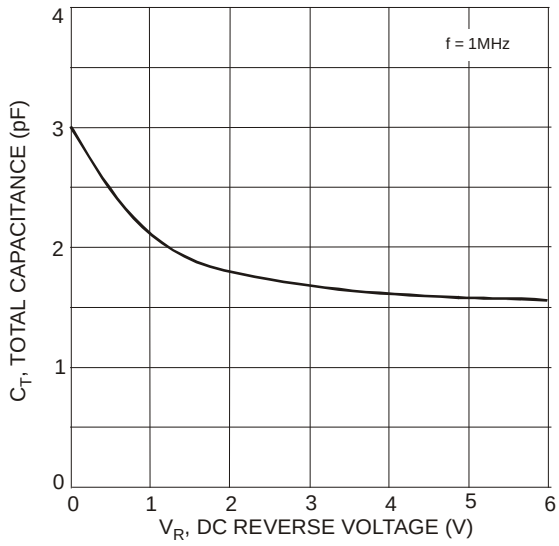


Figure 4 Total Capacitance vs. Reverse Voltage

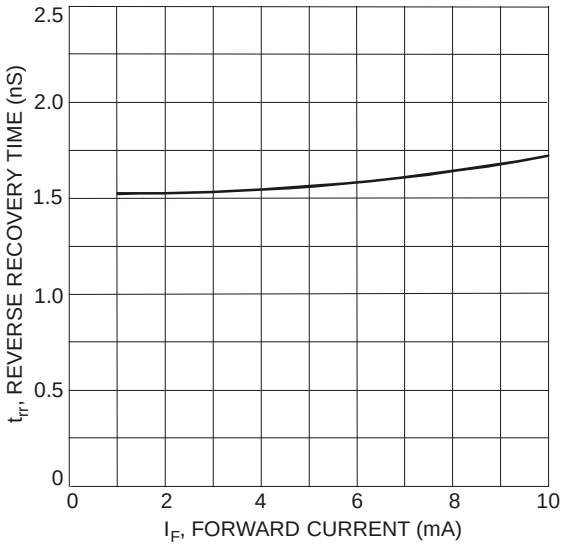
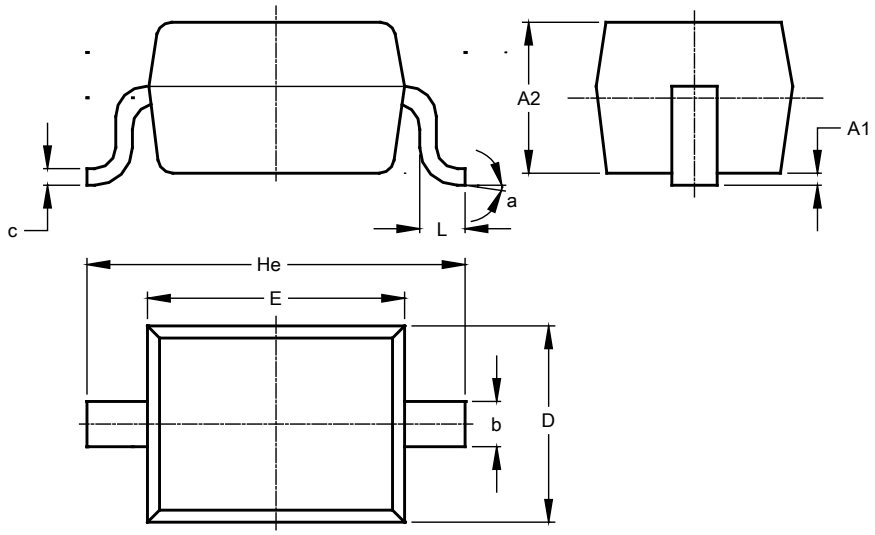


Figure 5 Reverse Recovery Time vs. Forward Current

Package Outline Dimensions

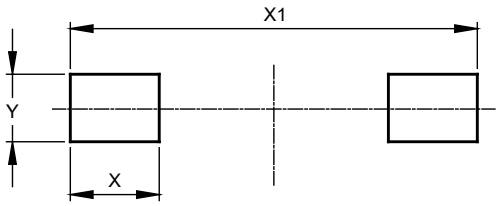
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



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.



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

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