ULTRA LOW LEAKAGE SURFACE MOUNT FAST SWITCHING DIODE

Features

- Ultra-Small Surface Mount Package
- Fast Switching Speed, Fast Reverse Recovery Time
- Ultra-Low Reverse Leakage Current (Typical 5nA @ V_R = 5V)
- Very Low Capacitance (< 1pF @ V_R = 0V)
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please contact us or your local Diodes representative. https://www.diodes.com/quality/product-definitions/**

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 Annealed over Alloy 42 Leadframe; Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.0014 grams (Approximate)

SOD523

Top View

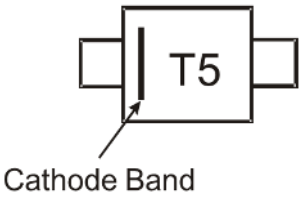
Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
DLLFSD01T-7	SOD523	3,000	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

SOD523



T5 = Product Type Marking Code
A Bar on Top of the Letter "T" Denotes AT Site

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

Characteristic	Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage	V_{RM}	85	V
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	80	V
RMS Reverse Voltage	$V_{R(RMS)}$	57	V
Forward Continuous Current	I_{FM}	300	mA
Non-Repetitive Peak Forward Surge Current @ t = 1.0µs	I_{FSM}	2.0	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	150	mW
Thermal Resistance Junction to Ambient Air (Note 5)	$R_{\theta JA}$	833	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	80	—	—	V	I_R = 100µA
Forward Voltage	V_F	— — —	0.62 0.74 0.94	0.7 0.82 1.20	V	I_F = 1.0mA I_F = 10mA I_F = 100mA
Leakage Current (Note 6)	I_R	— — — — — —	5 — — — — —	10.0 0.4 0.1 0.6 0.2 0.8	nA µA µA µA µA µA	V_R = 5V V_R = 5V, T_J = +85°C V_R = 30V V_R = 30V, T_J = +85°C V_R = 80V V_R = 80V, T_J = +85°C
Total Capacitance	C_T	—	0.5	2.5	pF	V_R = 0, f = 1.0MHz
Reverse Recovery Time	t_{rr}	— —	— —	4.0 4.0	ns ns	I_F = 10mA, V_R = 6V I_F = I_R = 10mA I_{rr} = 0.1 x I_R, R_L = 100Ω

Notes: 5. Part mounted on FR-4 PC 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.

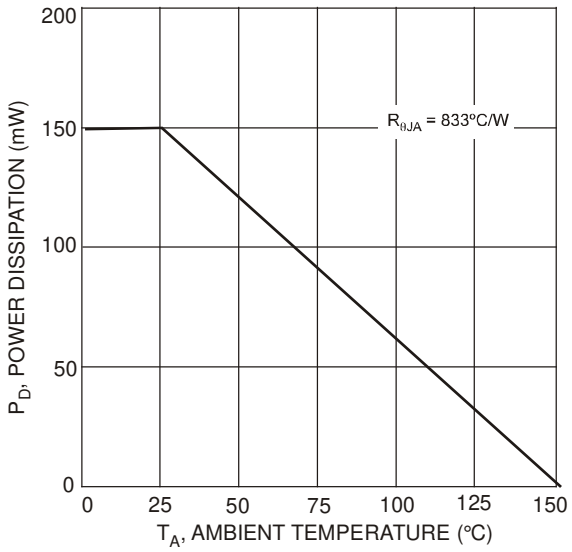


Figure 1 Power Derating Curve

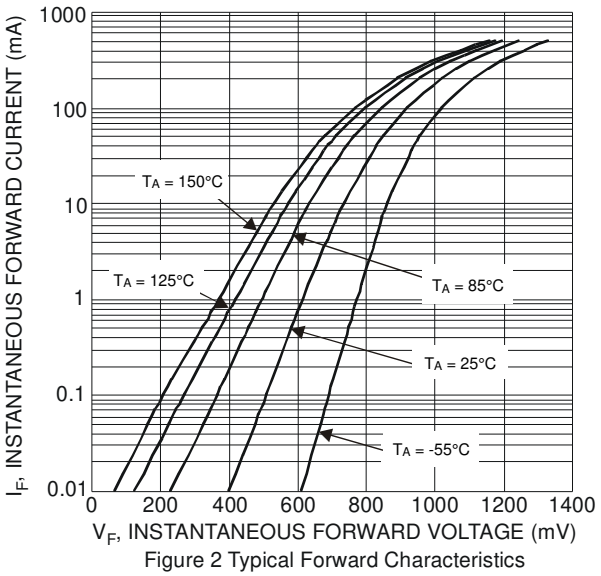


Figure 2 Typical Forward Characteristics

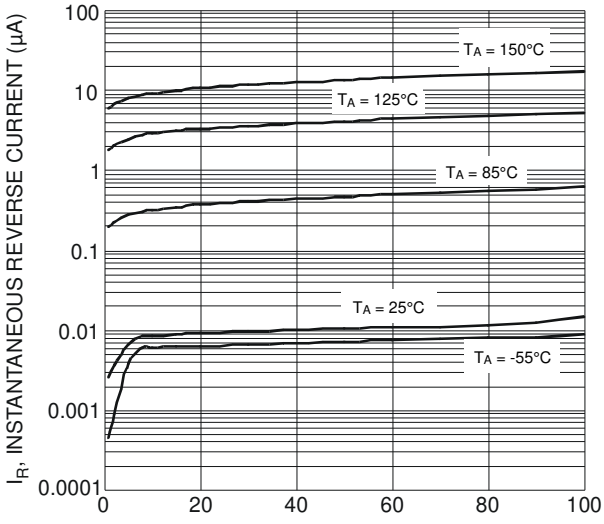


Figure 3 Typical Reverse Characteristics

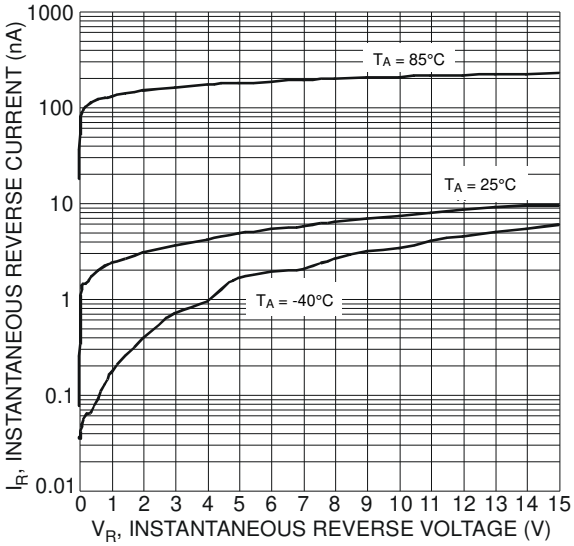


Figure 4 Typical Reverse Characteristics

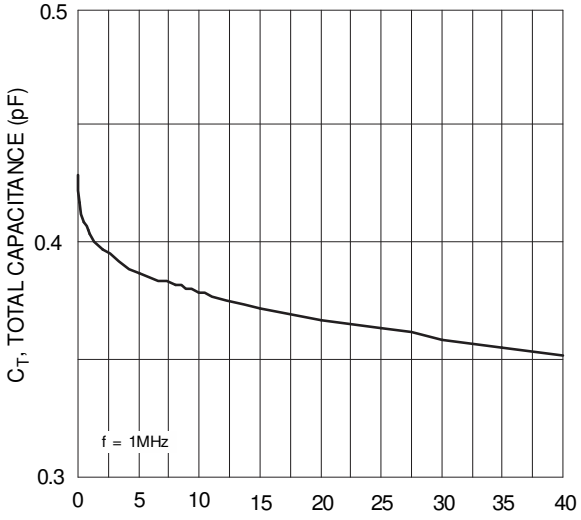
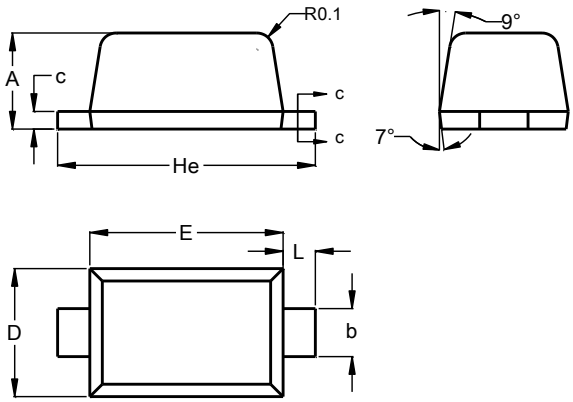


Figure 5 Total Capacitance vs. Reverse Voltage

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

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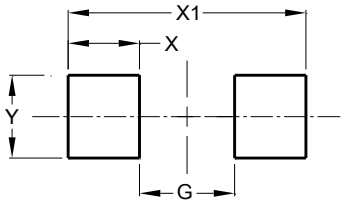
SOD523



Dimensions	Value (in mm)
G	0.80
X	0.60
X1	2.00
Y	0.70

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