

**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 (~ 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)**

**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 @3
- Weight: 0.0014 grams (Approximate)

SOD523



Top View

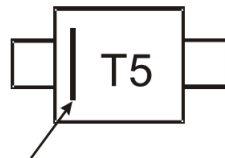
**Ordering Information** (Note 4)

Part Number	Compliance	Case	Packaging
DLLFSD01T-7	Standard	SOD523	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](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. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

**Marking Information**

SOD523



Cathode Band

T5 = Product Type Marking Code

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage	V <sub>RM</sub>	85	V
Peak Repetitive Reverse Voltage	V <sub>R(RM)</sub>	80	V
Working Peak Reverse Voltage	V <sub>R(WM)</sub>		
DC Blocking Voltage	V <sub>R</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	57	V
Forward Continuous Current	I <sub>FM</sub>	300	mA
Average Rectified Output Current	I <sub>O</sub>	100	mA
Non-Repetitive Peak Forward Surge Current @ t = 1.0μs	I <sub>FSM</sub>	2.0	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P <sub>D</sub>	150	mW
Thermal Resistance Junction to Ambient Air (Note 5)	R <sub>θJA</sub>	833	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V <sub>(BR)R</sub>	80	—	—	V	I <sub>R</sub> = 100μA
Forward Voltage	V <sub>F</sub>	—	0.62 0.74 0.94	0.7 0.82 1.20	V	I <sub>F</sub> = 1.0mA I <sub>F</sub> = 10mA I <sub>F</sub> = 100mA
Leakage Current (Note 6)	I <sub>R</sub>	—	5	10.0	nA μA μA μA μA	V <sub>R</sub> = 5V V <sub>R</sub> = 5V, T <sub>J</sub> = +85°C V <sub>R</sub> = 30V V <sub>R</sub> = 30V, T <sub>J</sub> = +85°C V <sub>R</sub> = 80V V <sub>R</sub> = 80V, T <sub>J</sub> = +85°C
Total Capacitance	C <sub>T</sub>	—	0.5	2.5	pF	V <sub>R</sub> = 0, f = 1.0MHz
Reverse Recovery Time	t <sub>rr</sub>	—	—	4.0 4.0	ns ns	I <sub>F</sub> = 10mA, V <sub>R</sub> = 6V I <sub>F</sub> = I <sub>R</sub> = 10mA, I <sub>rr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 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>.  
6. Short duration pulse test used to minimize self-heating effect.

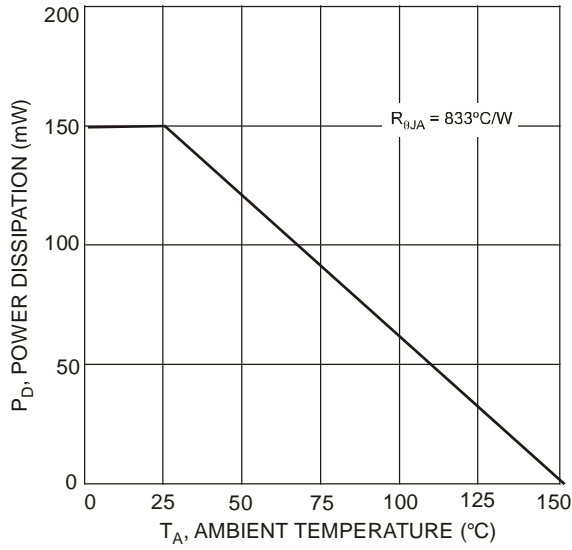


Fig. 1 Power Derating Curve

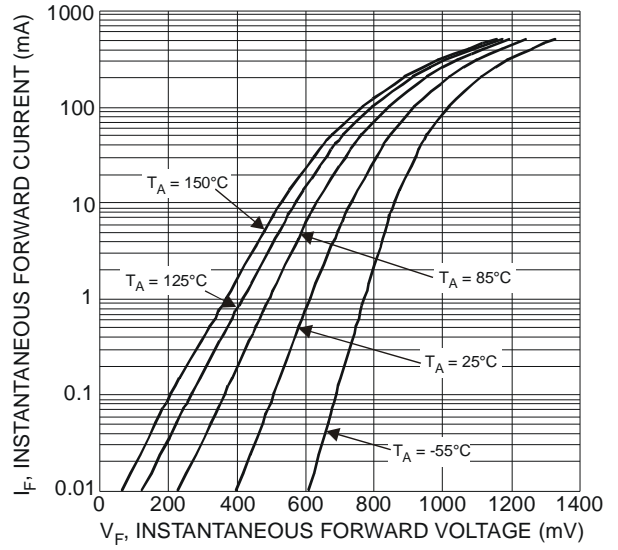


Figure 2 Typical Forward Characteristics

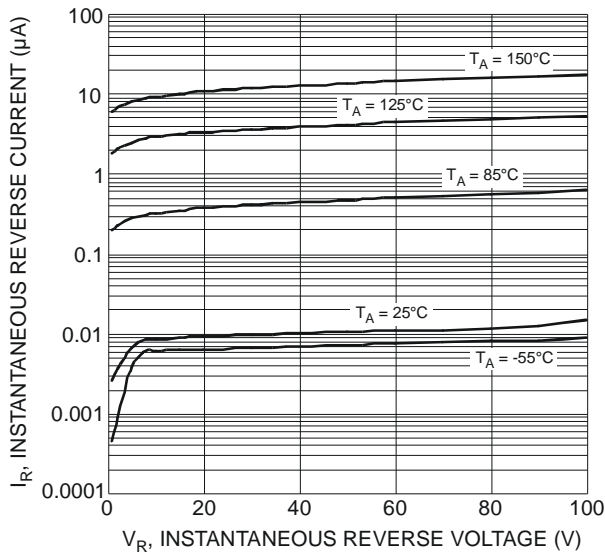


Figure 3 Typical Reverse Characteristics

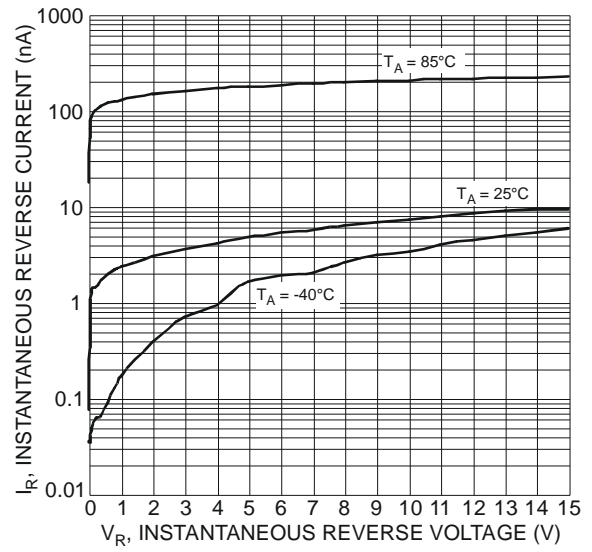


Figure 4 Typical Reverse Characteristics

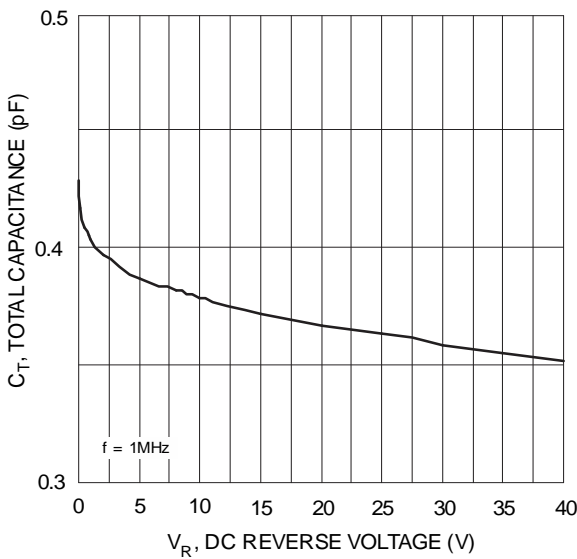
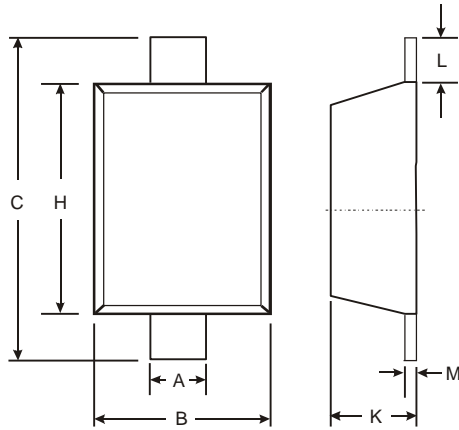


Figure 5 Total Capacitance vs. Reverse Voltage

## Package Outline Dimensions

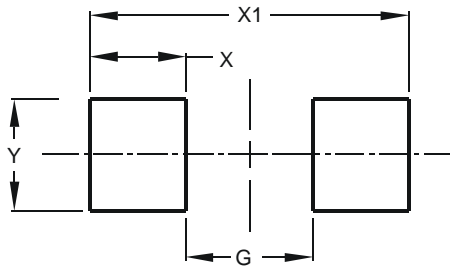
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



SOD523		
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

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



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

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