

## Description

Packaged in the SOD523 package offering an ideal low  $V_F/I_R$  performance combined with a low package height making the device suitable for various converter, charger and LED driver circuits.

## Features

- Low  $V_F$
- 380mA continuous current rating
- Low profile SOD523 package
- **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**

## 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
- Weight: 0.001 grams (approximate)

SOD523



Top View

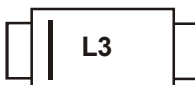

 Top View  
Pin-Out

## Ordering Information (Note 4)

Part Number	Case	Packaging
ZLLS350TA	SOD523	3000/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



L3 = Product Type Marking Code

## Maximum Ratings @T<sub>A</sub> = 25°C unless otherwise specified

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

Characteristic	Symbol	Value	Unit
DC Blocking Voltage	V <sub>RM</sub>	40	V
Continuous Forward current	I <sub>F</sub>	380	mA
Average Peak Forward Current; duty cycle = 50%	I <sub>FAV</sub>	650	mA
Non-Repetitive Forward Current	I <sub>FSM</sub>	6.0	A
		1.3	
Power Dissipation at T <sub>A</sub> = +25°C (Note 5)	P <sub>D</sub>	357	mW
Power Dissipation at T <sub>A</sub> = +25°C (Note 6)	P <sub>D</sub>	413	mW
Operating and storage temperature range	T <sub>STG</sub>	-55 to +150	°C
Junction Temperature	T <sub>J</sub>	+150	°C

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance Junction to Ambient (Note 5)	R <sub>θJA</sub>	350	°C/W
Thermal Resistance Junction to Ambient (Note 6)	R <sub>θJA</sub>	303	

## Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage	V <sub>(BR)R</sub>	40	53	—	V	I <sub>R</sub> = 100 μA
Forward Voltage Drop (Note 7)	V <sub>F</sub>	—	395	450	mV	I <sub>F</sub> = 30mA
		—	430	520		I <sub>F</sub> = 50mA
		—	490	635		I <sub>F</sub> = 100mA
		—	650	1000		I <sub>F</sub> = 275mA
Leakage Current	I <sub>R</sub>	—	0.15	4	μA	V <sub>R</sub> = 30V
Total Capacitance	C <sub>T</sub>	—	2.5	6	—	f = 1MHz; V <sub>R</sub> = 30V
Reverse Recovery Time	t <sub>rr</sub>	—	1	—	nS	Switch from I <sub>F</sub> = 100mA to I <sub>R</sub> = 100mA. Measured at I <sub>R</sub> = 10mA

Notes: 5. For a single device surface mounted on 25mm x 25mm x 1.6mm FR4 PCB with high coverage of 1oz copper in still air conditions  
6. As above measured @ t < 5 seconds  
7. Measured under pulsed conditions. Pulse width ≤ 300μs; duty cycle ≤ 2%

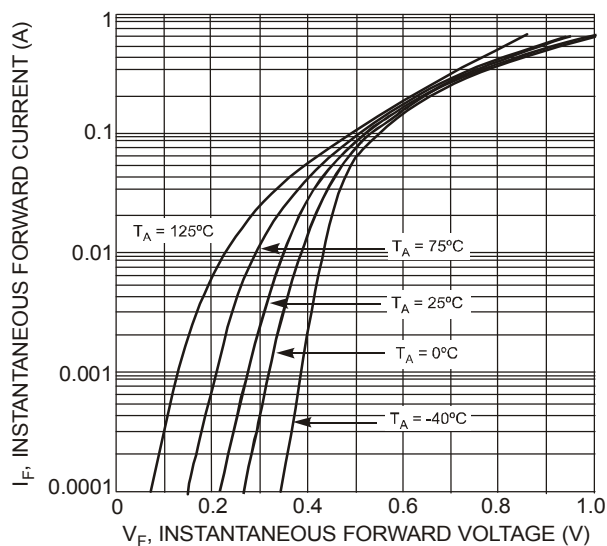


Fig. 1 Forward Characteristics

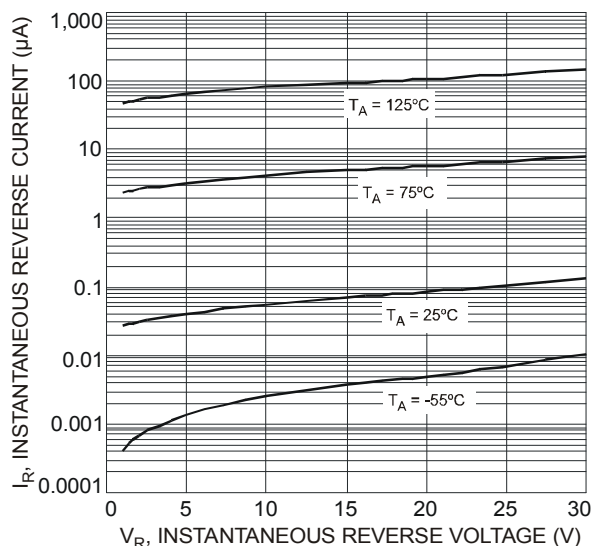


Fig. 2 Typical Reverse Characteristics

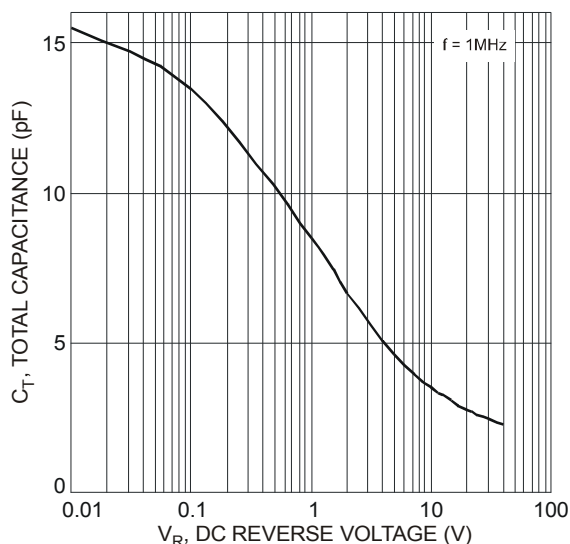


Fig. 3 Total Capacitance vs. Reverse Voltage

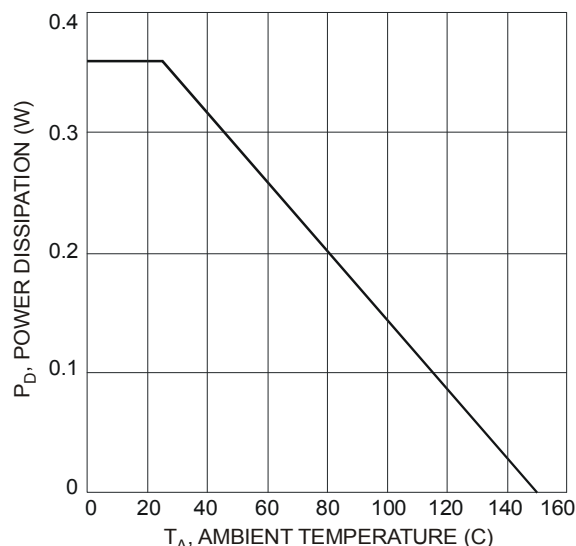
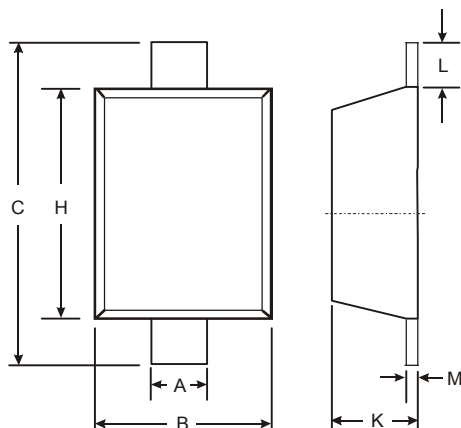


Fig. 4 Power Dissipation vs. Ambient Temperature

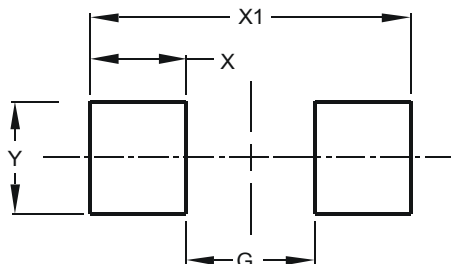
## Package Outline Dimensions

 Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for 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)
<b>G</b>	0.80
<b>X</b>	0.60
<b>X1</b>	2.00
<b>Y</b>	0.70

### IMPORTANT NOTICE

DIODES INCORPORATED MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. Diodes Incorporated does not assume any liability arising out of the application or use of this document or any product described herein; neither does Diodes Incorporated convey any license under its patent or trademark rights, nor the rights of others. Any Customer or user of this document or products described herein in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on Diodes Incorporated website, harmless against all damages.

Diodes Incorporated does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel. Should Customers purchase or use Diodes Incorporated products for any unintended or unauthorized application, Customers shall indemnify and hold Diodes Incorporated and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.

Products described herein may be covered by one or more United States, international or foreign patents pending. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks.

This document is written in English but may be translated into multiple languages for reference. Only the English version of this document is the final and determinative format released by Diodes Incorporated.

### LIFE SUPPORT

Diodes Incorporated products are specifically not authorized for use as critical components in life support devices or systems without the express written approval of the Chief Executive Officer of Diodes Incorporated. As used herein:

A. Life support devices or systems are devices or systems which:

1. are intended to implant into the body, or
2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.

Customers represent that they have all necessary expertise in the safety and regulatory ramifications of their life support devices or systems, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of Diodes Incorporated products in such safety-critical, life support devices or systems, notwithstanding any devices- or systems-related information or support that may be provided by Diodes Incorporated. Further, Customers must fully indemnify Diodes Incorporated and its representatives against any damages arising out of the use of Diodes Incorporated products in such safety-critical, life support devices or systems.

Copyright © 2013, Diodes Incorporated

[www.diodes.com](http://www.diodes.com)

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Diodes Inc.:](#)

[ZLLS350TA](#)