40V SURFACE MOUNT SCHOTTKY BARRIER DIODE

Product Summary

- V_R = 40V
- I_F = 0.40A
- I_R = 40μA

Description and Applications

This compact SOD323 packaged Schottky diode offers users an excellent performance combination comprising high current operation, extremely low leakage and low forward voltage ensuring suitability for applications requiring efficient operation at higher temperatures (above 85°C) see Operational efficiency chart on page 4.

- DC – DC Converters
- Mobile Telecomms
- PCMCIA

Features and Benefits

- Low V_F
- High Current Capability (I_F = 0.40A)
- Miniature Surface Mount Package
- Low V_F, fast switching Schottky
- Package thermally rated to 150°C
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: SOD323
- Case Material: 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: 0.004 grams (approximate)

SOD323



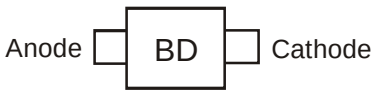
Top View

Ordering Information (Note 1)

Device	Packaging	Shipping
ZHCS400TA	SOD323	3,000/Tape & Reel
ZHCS400TC	SOD323	10,000/Tape & Reel

Notes: 1. For Packaging Details, go to our website at http://www.diodes.com.

Marking Information



BD = Product Type Marking Code

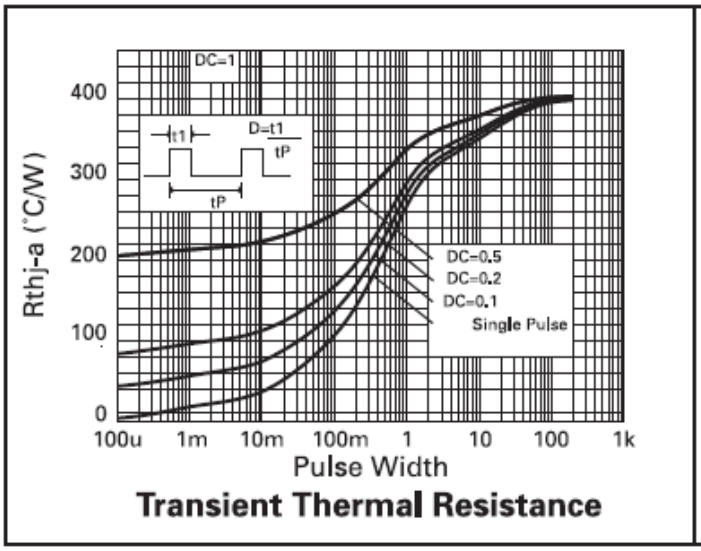
© Diodes Incorporated

Maximum Ratings @T_A = 25°C unless otherwise specified

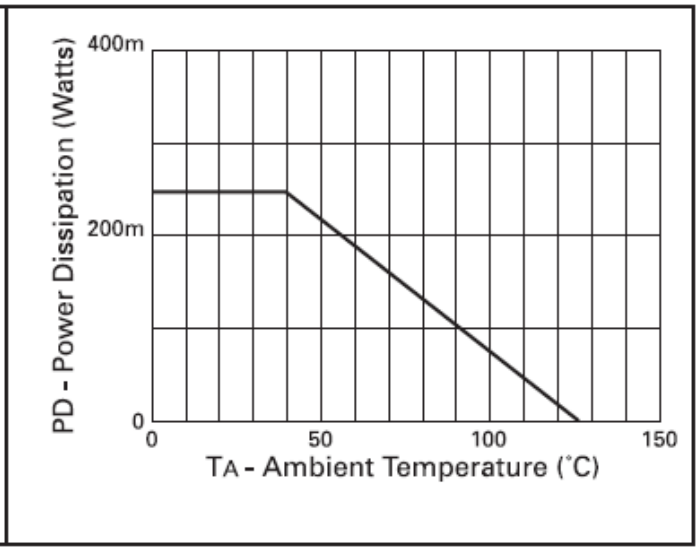
Characteristic		Symbol	Value	Units
Continuous Reverse Voltage		V_R	40	V
Continuous Forward Current		I_F	400	mA
Forward Voltage @I_F = 400mA		V_F	500	mV
Average Peak Forward Current; D.C. = 50%		I_{FAV}	1000	mA
Continuous Drain Current (Note x)	t ≤ 100µs	I_{FSM}	6.75	A
	t ≤ 10ms		3	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation, T_A = 25°C	P_D	250	mW
Storage Temperature Range	T_{STG}	-55 to +150	°C



Transient Thermal Resistance

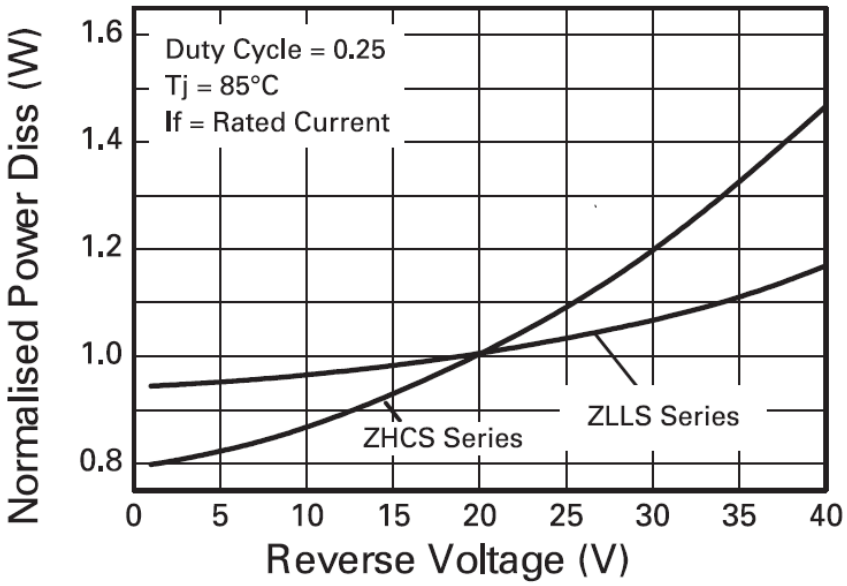


© Diodes Incorporated

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage	$V_{(BR)R}$	40	60	-	V	I_R = 200µA
Forward Voltage	V_F	-	270	300	mV	I_F = 50mA
		-	300	350		I_F = 100mA
		-	370	460		I_F = 250mA
		-	425	500		I_F = 400mA
		-	550	670		I_F = 750mA
		-	640	780		I_F = 1,000mA
		-	810	1050		I_F = 1,500mA
		-	440	-		I_F = 500mA, TA = 100°C
Reverse Current	I_R	-	15	40	µA	V_R = 30V
Diode Capacitance	C_D	-	20	-	pF	f = 1MHz, V_R = 25V

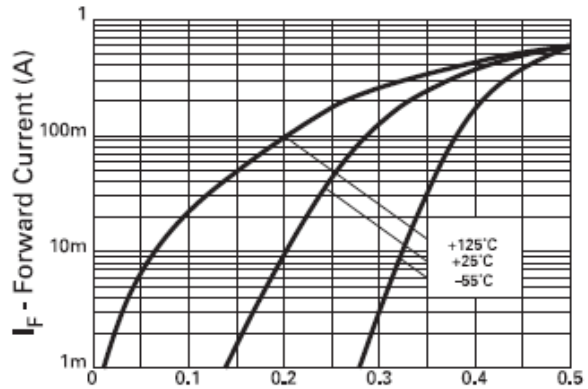
Operational efficiency chart



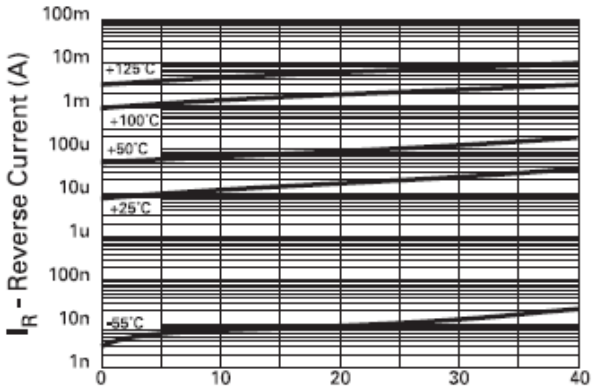
Operational Efficiency Example

The operational efficiency chart indicates the beneficial use of the ZLLS series diodes in applications requiring higher voltage, higher temperature operation. Circuits requiring low voltage low temperature operation will benefit from using Zetex low V_F ZHCS series diodes.

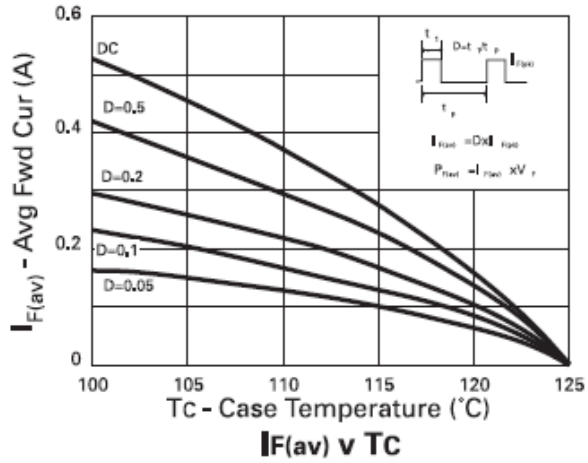
© Diodes Incorporated



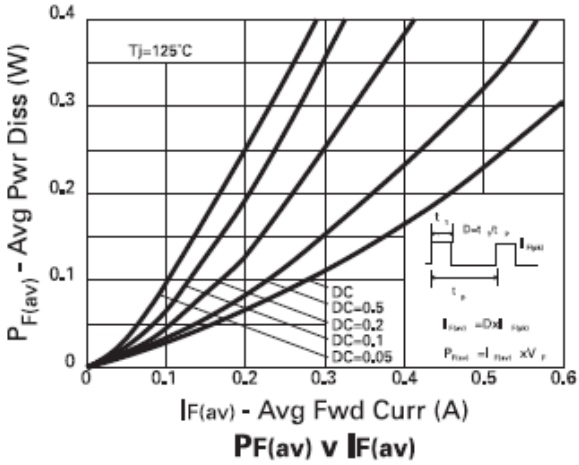
IF v VF



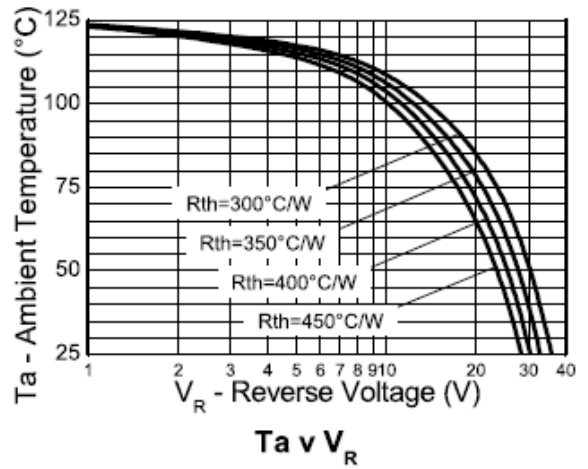
IR v VR



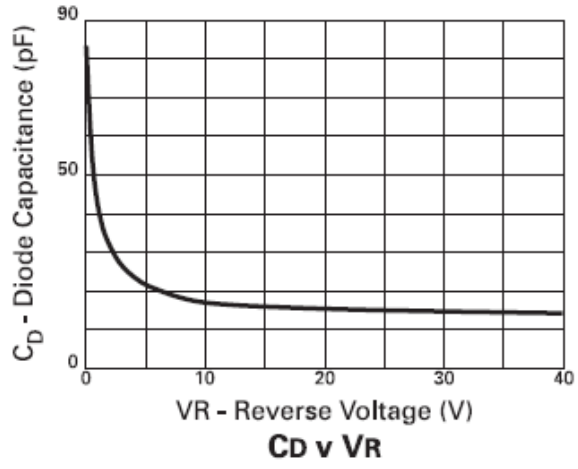
IF(av) v TC



PF(av) v IF(av)



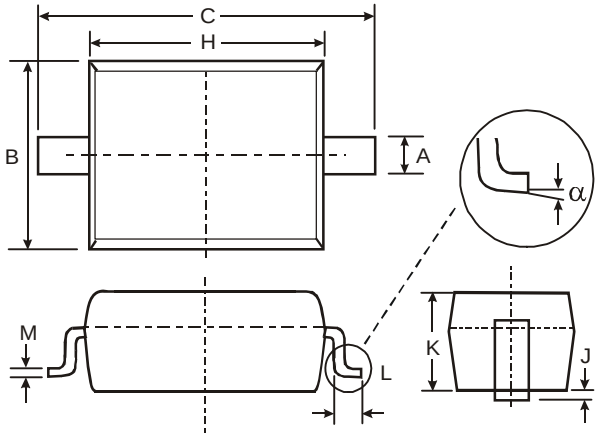
Ta v VR



CD v VR

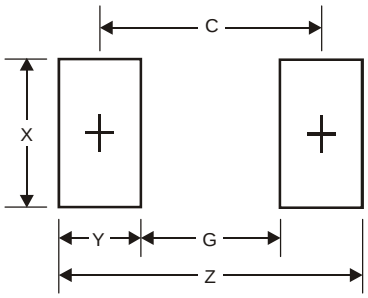
© Diodes Incorporated

Package Outline Dimensions



SOD323		
Dim	**Min**	**Max**
A	0.25	0.35
B	1.20	1.40
C	2.30	2.70
H	1.60	1.80
J	0.00	0.10
K	1.0	1.1
L	0.20	0.40
M	0.10	0.15
α	0°	8°
All Dimensions in mm		

Suggested Pad Layout



Dimensions	Value (in mm)
Z	3.75
G	1.05
X	0.65
Y	1.35
C	2.40

© Diodes Incorporated

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.

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 © 2012, Diodes Incorporated

www.diodes.com