

40V SURFACE MOUNT SCHOTTKY BARRIER DIODE
Product Summary

- $V_R = 40V$
- $I_{FAV} = 510mA$
- $V_F = 405mV$ typ @ 100mA
- $I_R = 7\mu A$ typ @ 30V

Description

Packaged in the SOD523 package this addition to the Zetex Schottky diode range offers an ideal low V_F/I_R performance combined with a low package height of 0.9mm making the device suitable for various converter, charger, and LED driver circuits.

Applications

- DC – DC Converters
- Mobile Telecomms
- Charger Circuits
- LED Driver Circuits
- MOSFET Voltage Protection Circuits
- High Frequency Rectification

Features

- 350mA continuous current rating
- Low profile SOD523 package (0.9mm)
- 100% matte tin plated external leads
- **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
- Leads: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.004 grams (approximate)

SOD523



Top View

Ordering Information (Note 4)

Device	Packaging	Shipping
ZHCS350TA	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> 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>.

Marking Information


35 = Product Type Marking Code

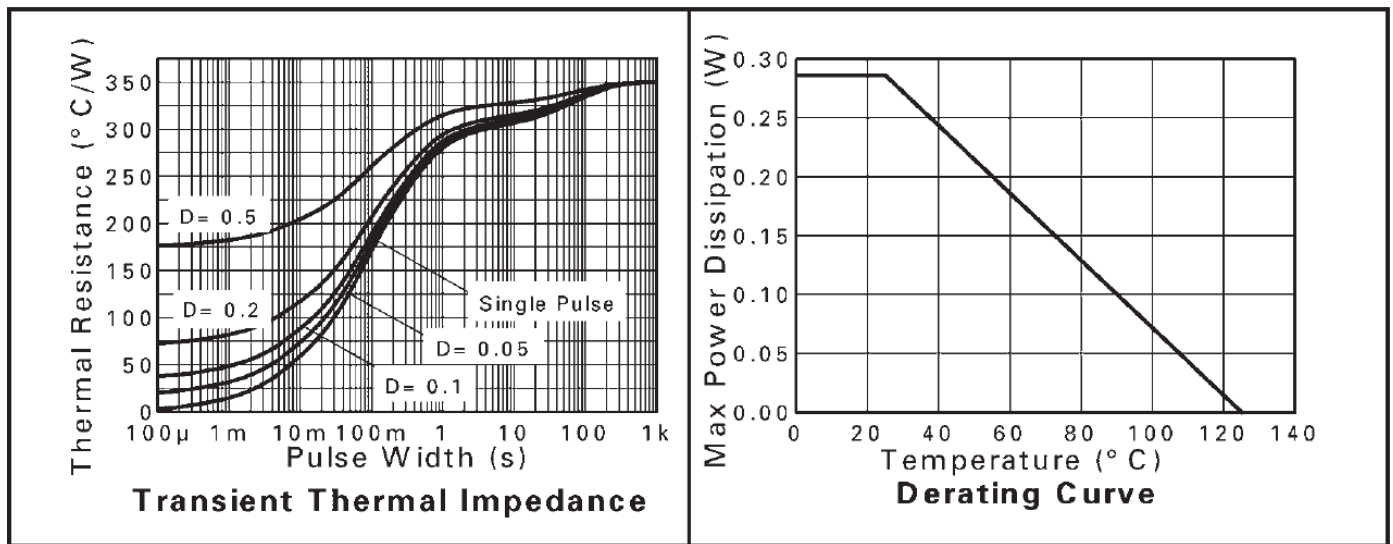
Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Units	
Continuous Reverse Voltage	V_R	40	V	
Continuous Forward Current	I_F	350	mA	
Average Peak Forward Current; D.C. = 50%	I_{FAV}	510	mA	
Non Repetitive Forward Current	I_{FSM}	$t \leq 100\mu\text{s}$	4.2	A
		$t \leq 10\text{ms}$	910	mA

Thermal Characteristics

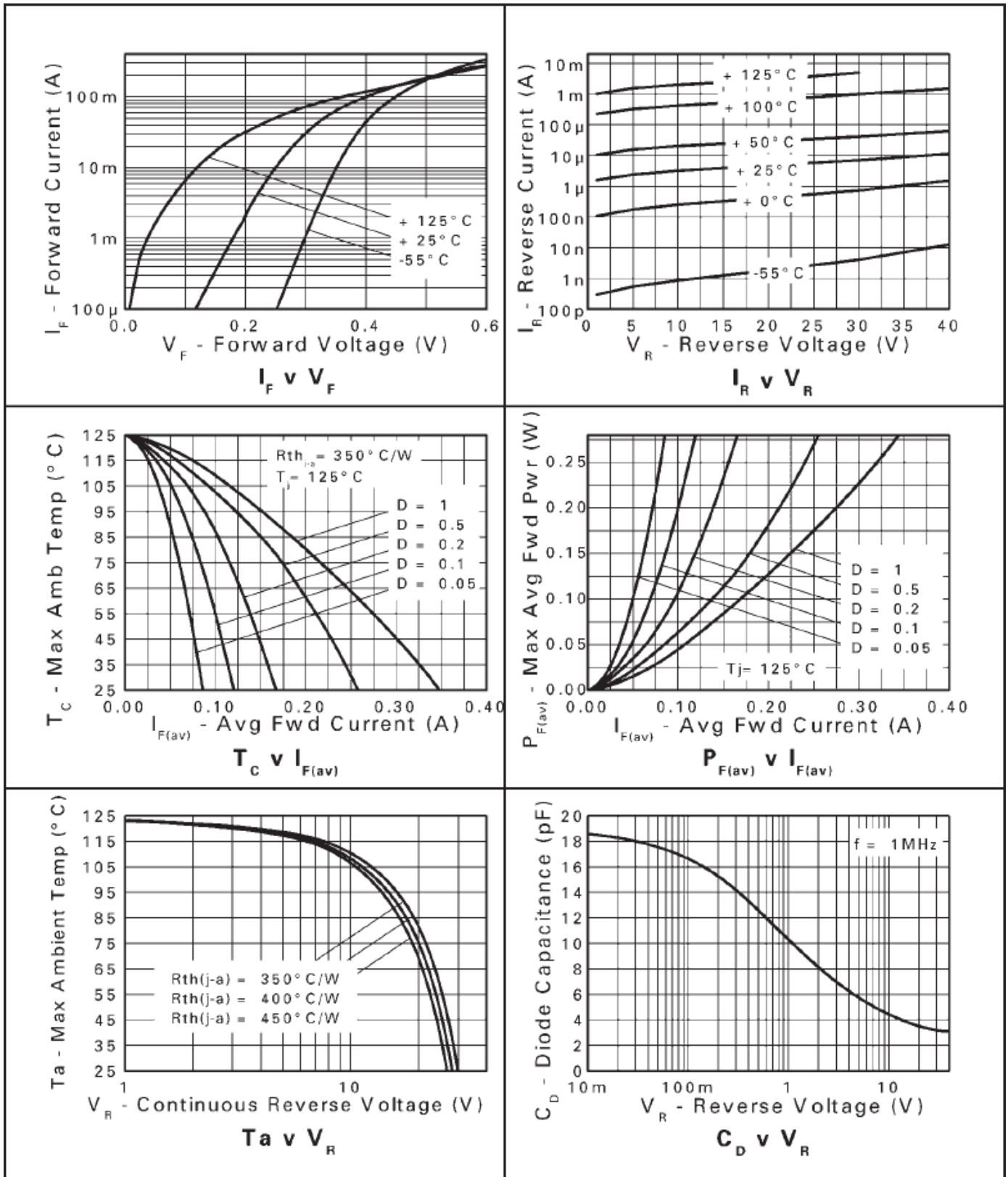
Characteristic	Symbol	Value	Unit	
Power Dissipation, $T_A = 25^\circ\text{C}$	P_D	(Note 5)	285	mW
		(Note 6)	330	
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	(Note 5)	350	
		(Note 6)	303	
Junction Temperature	T_J	125	$^\circ\text{C}$	
Storage Temperature Range	T_{STG}	-55 to +150	$^\circ\text{C}$	

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 Note 5, measured at $t \leq 5$ secs.

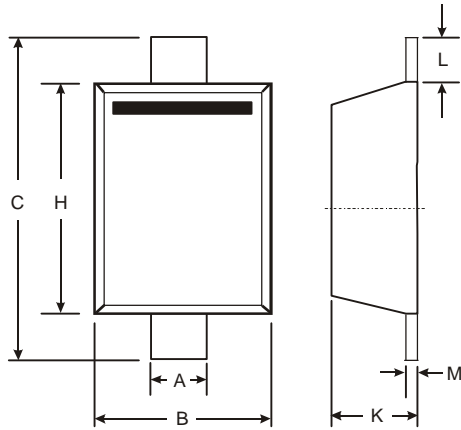

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage	$V_{(BR)R}$	40	60	-	V	$I_R = 100\mu\text{A}$
Forward Voltage (Note 7)	V_F	-	300	325	mV	$I_F = 30\text{mA}$
		-	335	370		$I_F = 50\text{mA}$
		-	405	460		$I_F = 100\text{mA}$
		-	730	810		$I_F = 350\text{mA}$
Reverse Current	I_R	-	7	12	μA	$V_R = 30\text{V}$
Diode Capacitance	C_D	-	3.3	6	pF	$f = 1\text{MHz}$, $V_R = 25\text{V}$
Reverse Recovery Time	t_{rr}	-	1.6	-	ns	Switched from $I_F = 100\text{mA}$ to $I_R = 100\text{mA}$ Measured @ $I_R = 10\text{mA}$

Notes: 7. Measured under pulsed conditions. Pulse width = 300 μs . Duty cycle $\leq 2\%$.

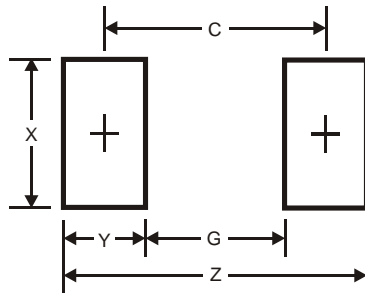


Package Outline Dimensions



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



Dimensions	Value (in mm)
Z	2.3
G	1.1
X	0.8
Y	0.6
C	1.7

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