40V SURFACE MOUNT SCHOTTKY BARRIER DIODE

Product Summary

- V_R = 40V
- I_{FAV} = 510mA
- V_F = 405mV typ @ 100mA
- I_R = 7µA 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 e3
- 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

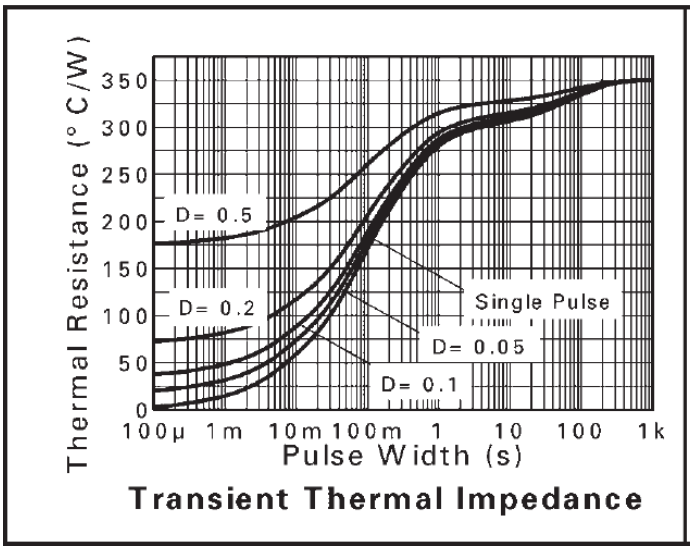
Maximum Ratings @T_A = 25°C unless otherwise specified

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	t ≤ 100µs	I_{FSM}	4.2	A
	t ≤ 10ms		910	mA

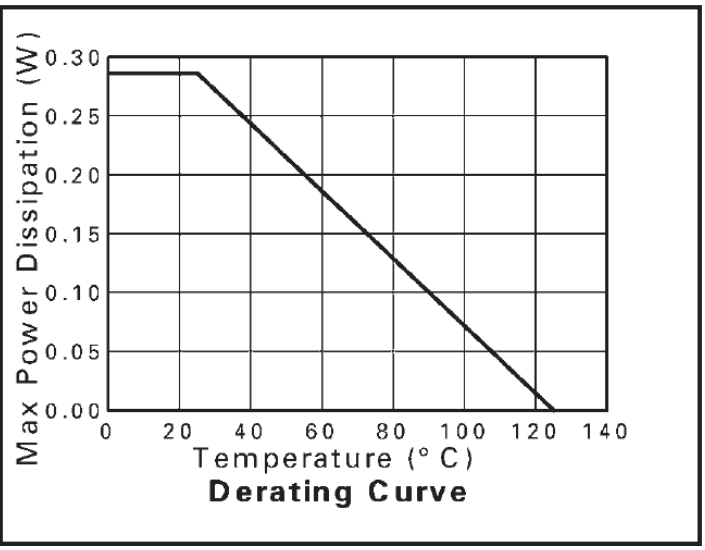
Thermal Characteristics

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



Transient Thermal Impedance

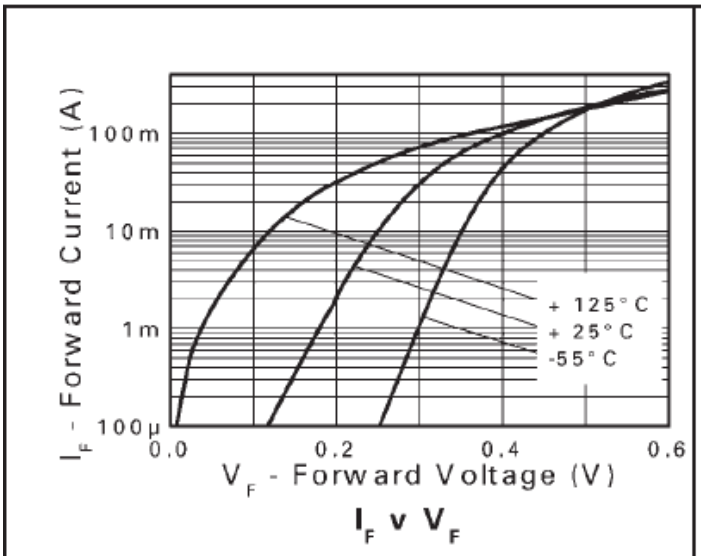


Derating Curve

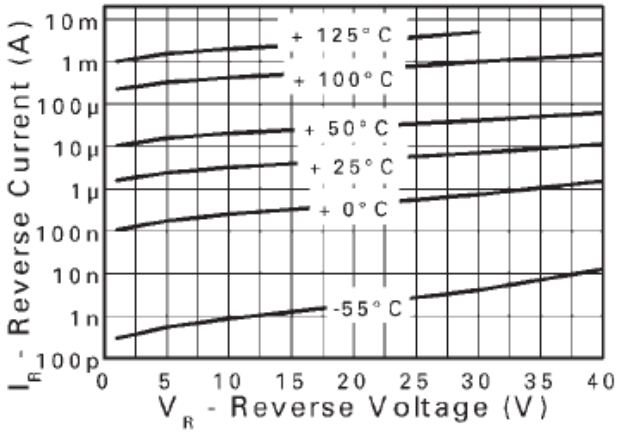
Electrical Characteristics @T_A = 25°C unless otherwise specified

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

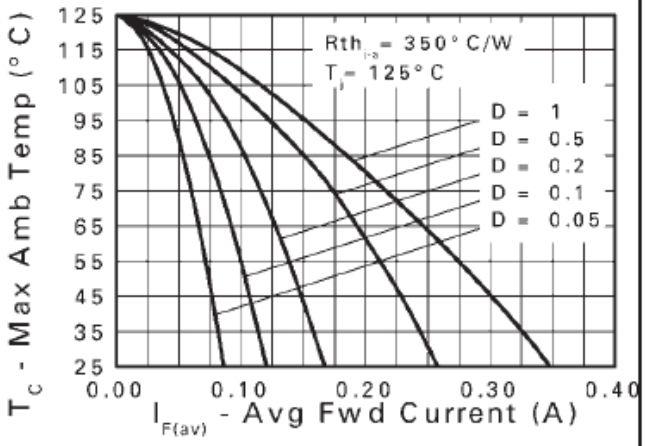
Notes: 7. Measured under pulsed conditions. Pulse width = 300µS. Duty cycle ≤ 2%.



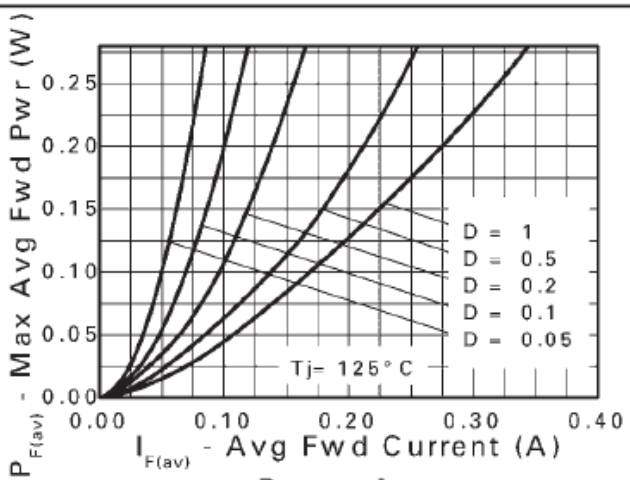
I_F v V_F



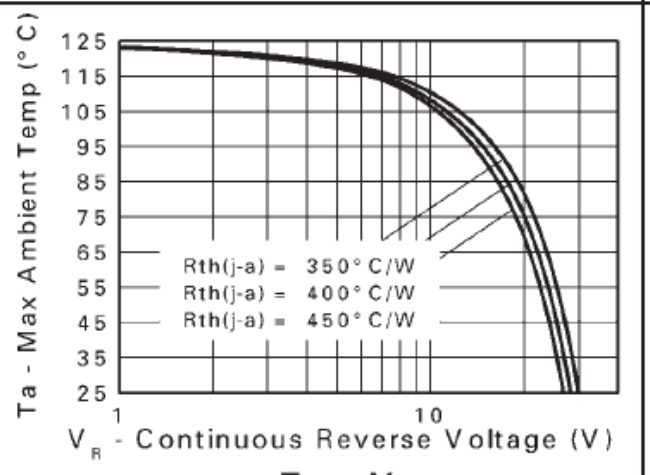
I_R v V_R



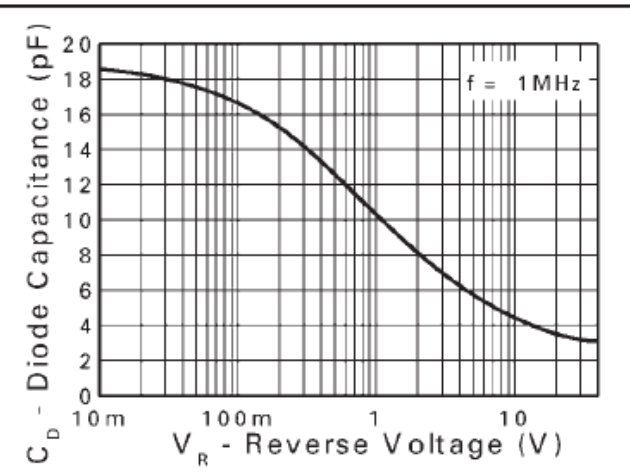
T_C v $I_{F(av)}$



$P_{F(av)}$ v $I_{F(av)}$

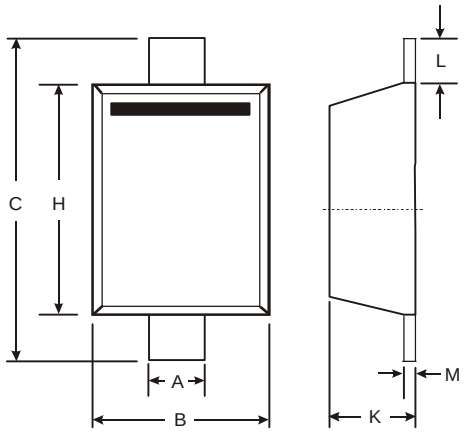


Ta v V_R



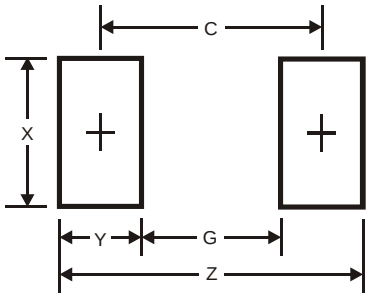
C_D v V_R

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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