



#### **40V SURFACE MOUNT SCHOTTKY BARRIER DIODE**

### **Product Summary**

- V<sub>R</sub> = 40V
- I<sub>FAV</sub> = 510mA
- $V_F = 405 \text{mV typ} @ 100 \text{mA}$
- $I_R = 7\mu A \text{ typ } @ 30V$

#### **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 (3)
- 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

35 = Product Type Marking Code



#### Maximum Ratings @TA = 25°C unless otherwise specified

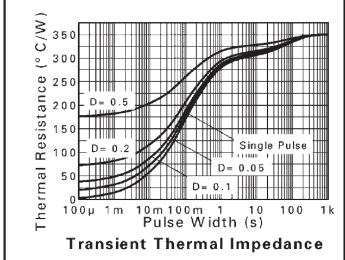
Characteristic		Symbol	Value	Units
Continuous Reverse Voltage		$V_R$	40	V
Continuous Forward Current		l <sub>F</sub>	350	mA
Average Peak Forward Current; D.C. = 50%		I <sub>FAV</sub>	510	mA
Non Repetitive Forward Current	t ≤ 100μs	_	4.2	А
	t ≤ 10ms	IFSM	910	mA

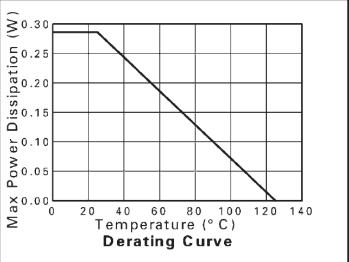
### **Thermal Characteristics**

Characteristic		Symbol	Value	Unit	
Dower Discinction T 25°C	(Note 5)	J	285	mW	
Power Dissipation, T <sub>A</sub> = 25°C	(Note 6)	P <sub>D</sub>	330	] ""	
Thermal Resistance, Junction to Ambient	(Note 5)	)	350		
	(Note 6)	R <sub>0JA</sub>	303		
Junction Temperature	$T_J$	125	°C		
Storage Temperature Range		T <sub>STG</sub>	-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.





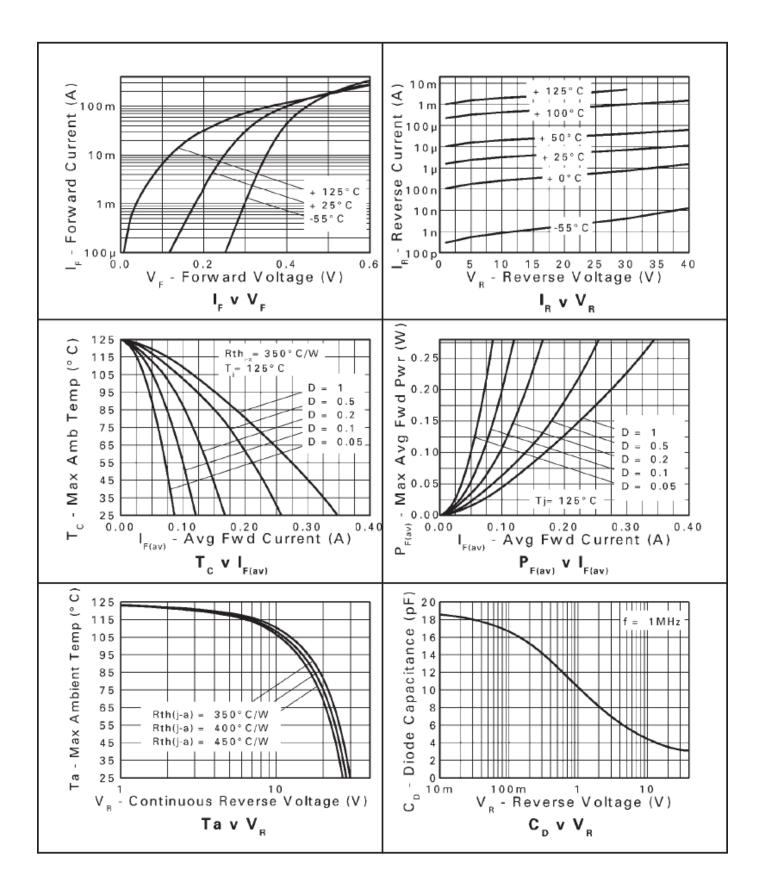


## Electrical Characteristics @TA = 25°C unless otherwise specified

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

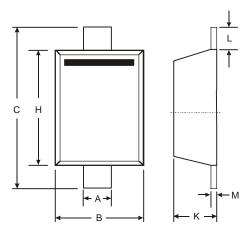
Notes: 7. Measured under pulsed conditions. Pulse width =  $300\mu$ S. Duty cycle  $\leq 2\%$ .





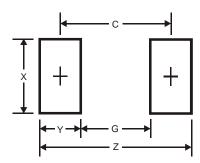


## **Package Outline Dimensions**



SOD523				
Dim	Min	Max		
Α	0.25	0.35		
В	0.70 0.90			
С	1.50 1.7			
Н	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
Х	0.8
Y	0.6
С	1.7



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