

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, this addition to the Diodes Incorporated's 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 converters, chargers, and LED driver circuits.

Applications

- DC-DC converters
- Mobile telecoms
- Charger circuits
- LED driver circuits
- MOSFET voltage protection circuits
- High-frequency rectifications

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)**
- **The ZHCS350Q is suitable for automotive applications requiring specific change control; this part is AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.**

<https://www.diodes.com/quality/product-definitions/>

Mechanical Data

- Package: SOD523
- Package 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: 0.002 grams (Approximate)

SOD523



Top View

Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
ZHCS350QTA	SOD523	3000	Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 2. See <https://www.diodes.com/quality/lead-free/> 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



35 = Product Type Marking Code

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit	
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 ≤ 100μs	4.2	A
		t ≤ 10ms	910	mA
Electrostatic Discharge	HBM	4000	V	
Electrostatic Discharge	MM	400	V	
Electrostatic Discharge	CDM	1000	V	

Thermal Characteristics

Characteristic	Symbol	Value	Unit	
Power Dissipation, T _A = +25°C	P _D	(Note 5)	230	mW
		(Note 6)	370	
Typical Thermal Resistance, Junction to Ambient	R _{θJA}	(Note 5)	450	°C/W
		(Note 6)	270	
Junction Temperature	T _J	+125	°C	
Storage Temperature Range	T _{STG}	-55 to +150	°C	

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	t _{RR}	—	1.6	—	ns	Switched from I _F = 100mA to I _R = 100mA Measured @ I _R = 10mA

- Notes:
5. For a single device surface mounted on 1*MRP FR-4 PCB with 2oz copper pad.
 6. For a single device surface mounted on 1 inch square with 2oz copper pad.
 7. Measured under pulsed conditions. Pulse width = 300μs. Duty cycle ≤ 2%.

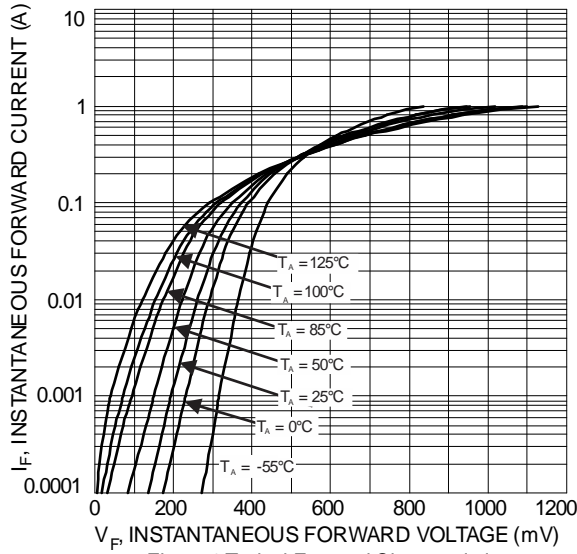


Figure 1 Typical Forward Characteristics

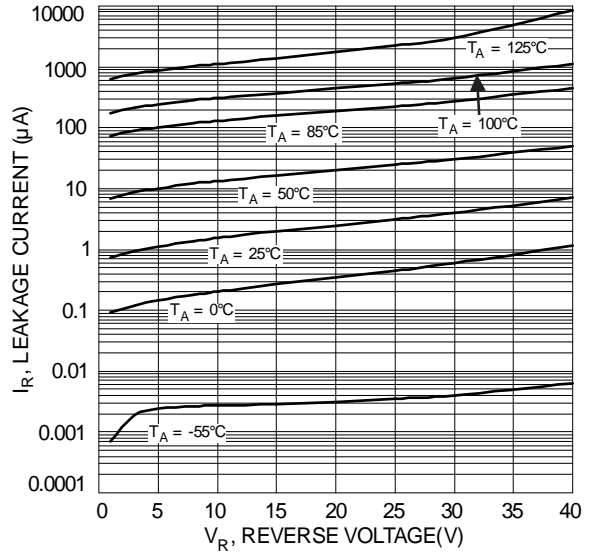


Figure 2 Typical Reverse Characteristics

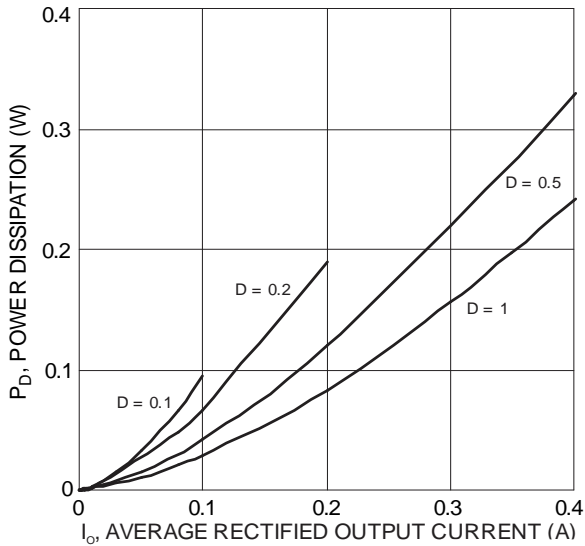


Figure 3 Forward Power Dissipation, $T_J = 125^\circ\text{C}$

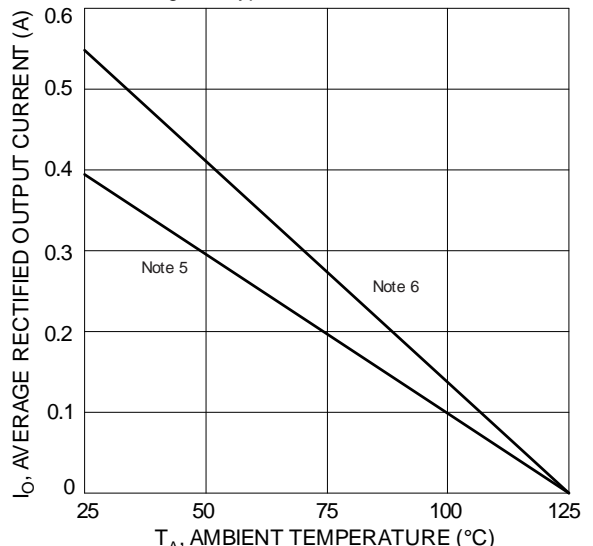


Figure 4 DC Forward Current Derating Curve

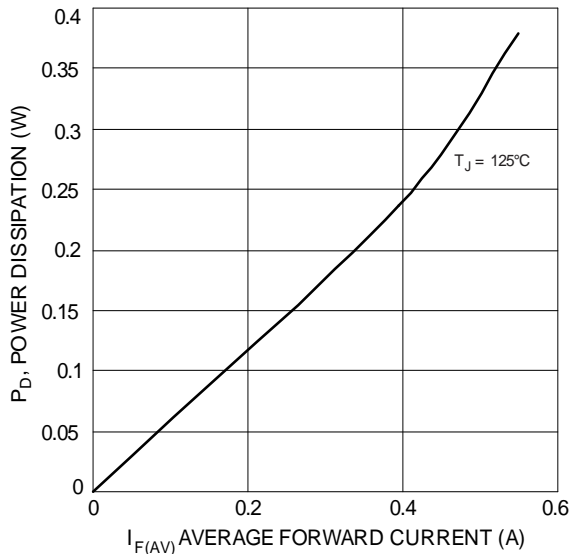


Figure 5 Forward Power Dissipation

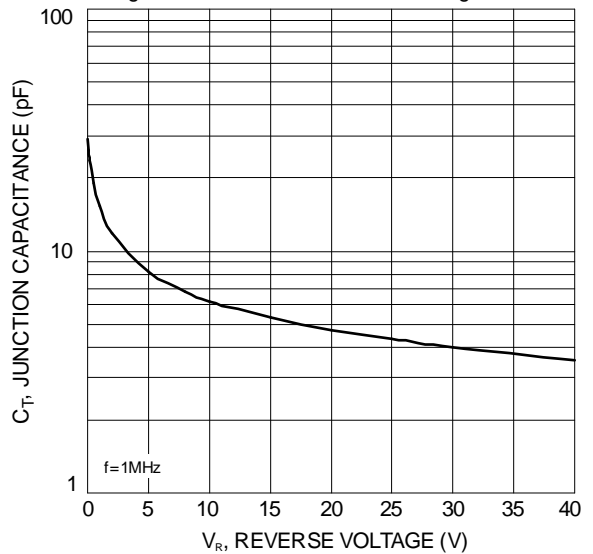


Figure 6 Typical Junction Capacitance

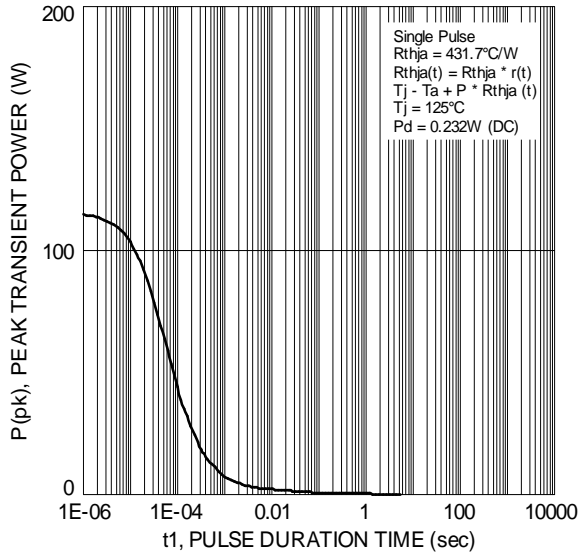


Figure 7 Single Pulse Maximum Power Dissipation

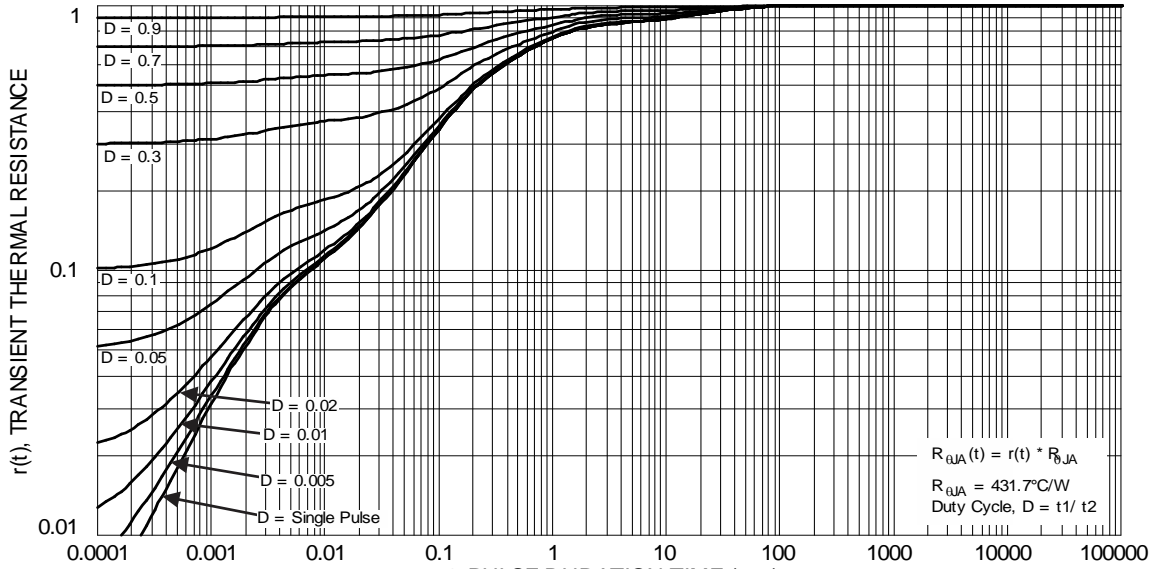
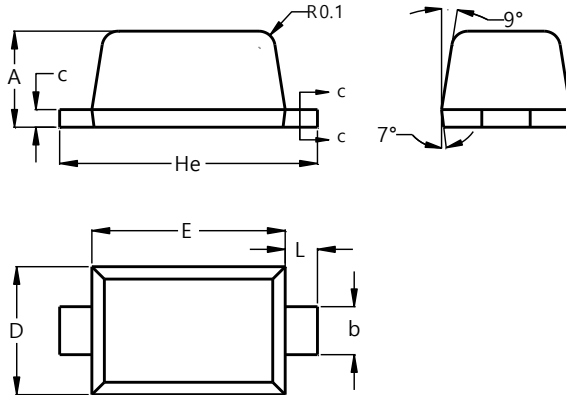


Figure 8 Transient Thermal Resistance

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOD523

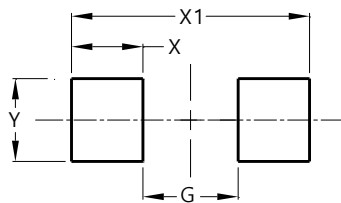


SOD523		
Dim	Min	Max
A	0.55	0.65
b	0.26	0.34
c	0.11	0.17
D	0.75	0.85
E	1.15	1.25
He	1.55	1.65
L	0.10	0.30
All Dimensions in mm		

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOD523



Dimensions	Value (in mm)
G	0.80
X	0.60
X1	2.00
Y	0.70

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