Product Summary

- V_R = 40V
- I_{FAV} = 510mA
- V_F = 405mV Typ. @ 100mA
- I_R = 7µA 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 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)**
- **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

- 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)

Part Number	Compliance	Packaging	Shipping
ZHCS350QTA	Automotive	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	t ≤ 100µs	I_{FSM}	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	(Note 5)	P_D	230	mW
	(Note 6)		370	
Typical Thermal Resistance, Junction to Ambient	(Note 5)	$R_{\theta JA}$	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%.

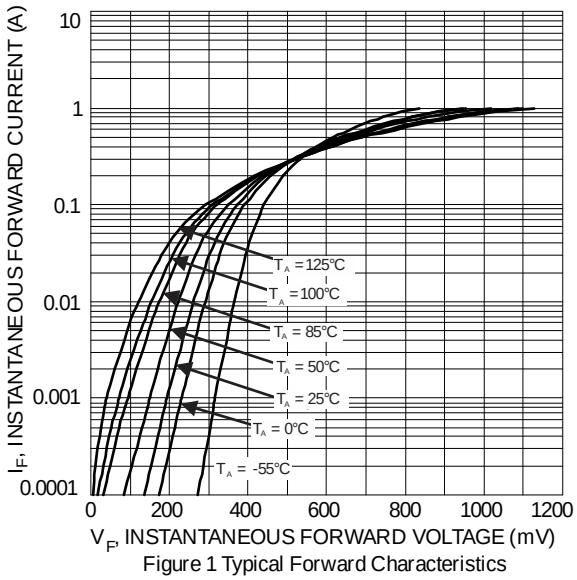


Figure 1 Typical Forward Characteristics

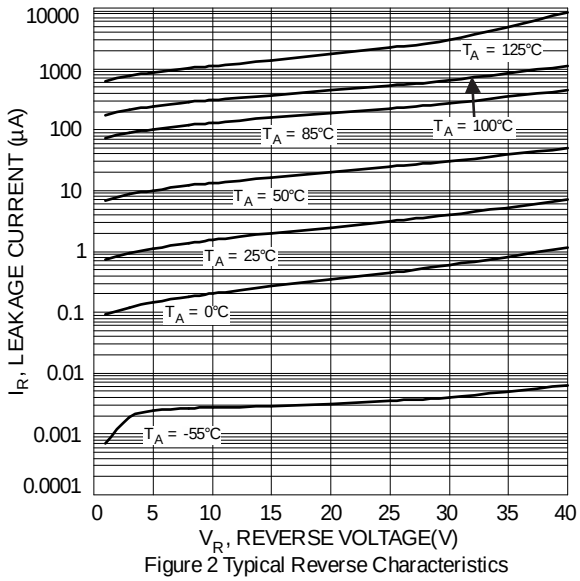


Figure 2 Typical Reverse Characteristics

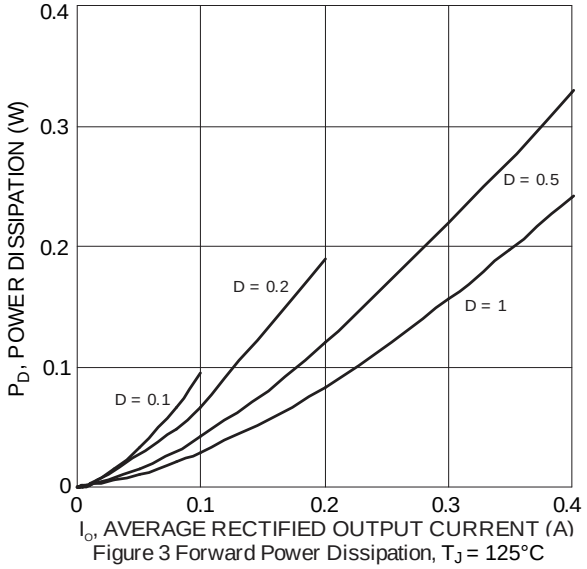


Figure 3 Forward Power Dissipation, T_J = 125°C

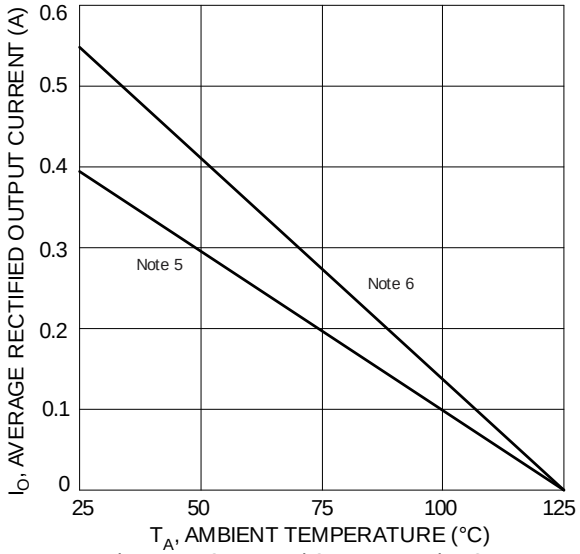


Figure 4 DC Forward Current Derating Curve

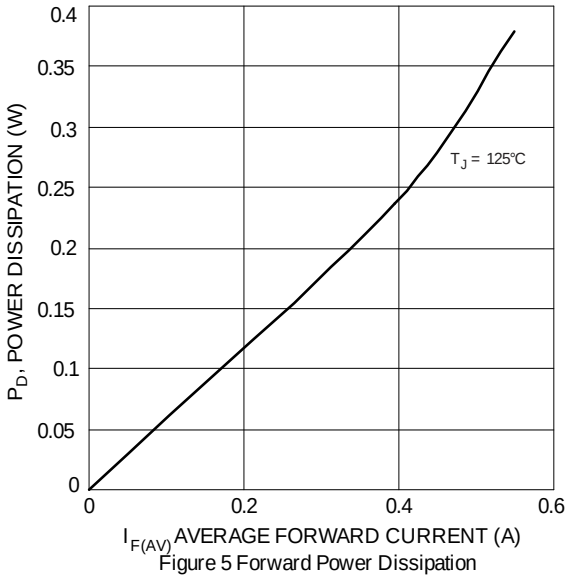


Figure 5 Forward Power Dissipation

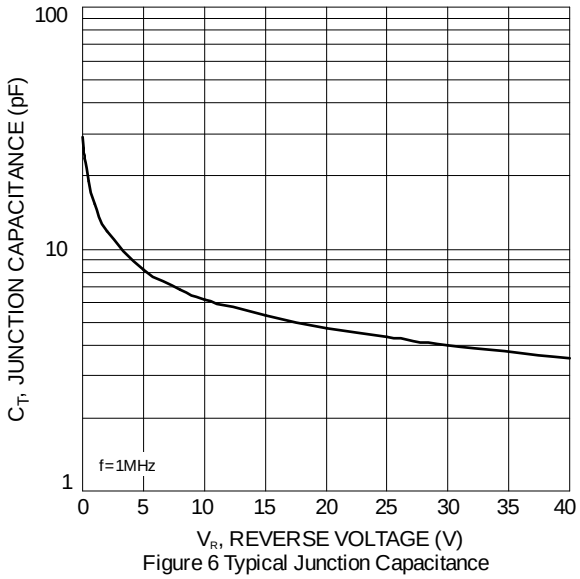


Figure 6 Typical Junction Capacitance

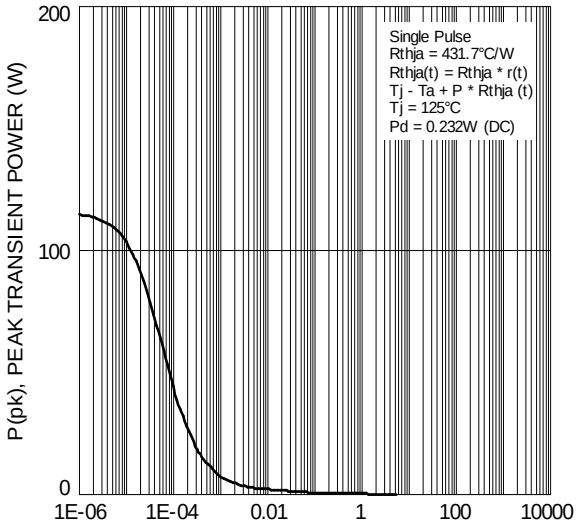


Figure 7 Single Pulse Maximum Power Dissipation

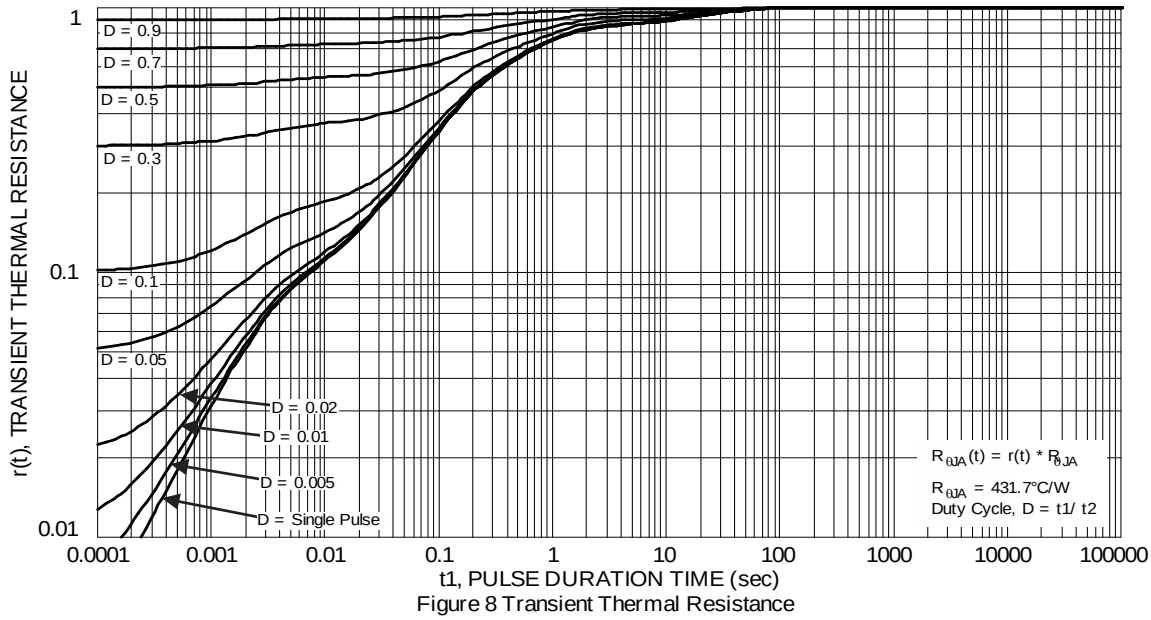
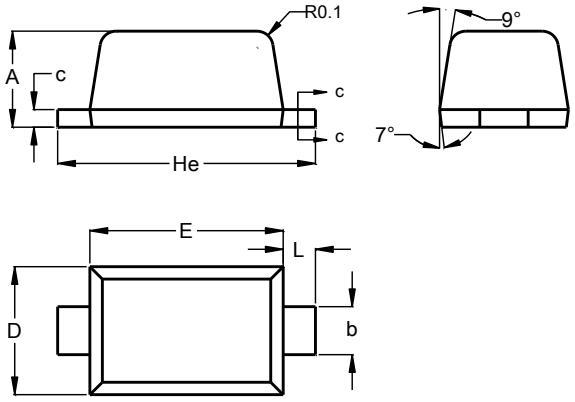


Figure 8 Transient Thermal Resistance

Package Outline Dimensions

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

SOD523

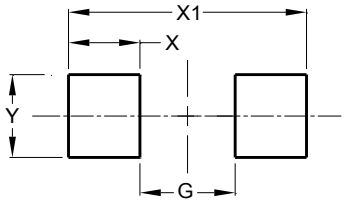


SOD523		
Dim	**Min**	**Max**
A	0.55	0.65
b	0.26	0.34
c	0.11	0.17
D	0.75	0.85
E	1.15	1.25
He	1.55	1.65
L	0.10	0.30
All Dimensions in mm		

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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