

## 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 telecomm
- 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)**
- **An Automotive-Compliant Part is Available Under Separate Datasheet ([ZHCS350Q](#))**

## 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 Leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 **Ⓜ3**
- Polarity: Cathode Band
- Weight: 0.004 grams (Approximate)

SOD523



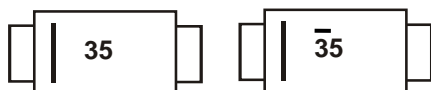
Top View

## Ordering Information (Note 4)

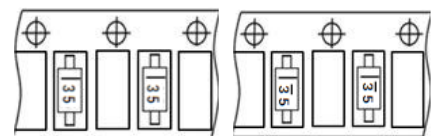
| Part Number | Package | Packing |             |
|-------------|---------|---------|-------------|
|             |         | Qty.    | Carrier     |
| ZHCS350TA   | SOD523  | 3000    | Tape & Reel |

- 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 &  $\bar{3}5$  = Product Type Marking Code



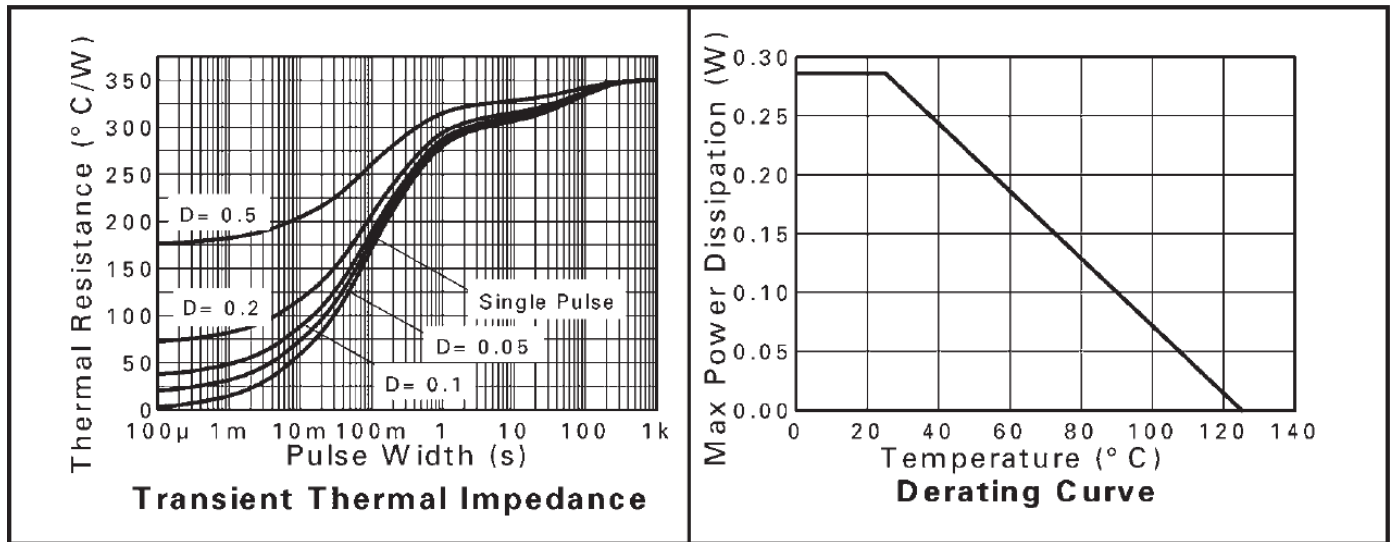
**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic                           | Symbol           | Value     | Unit |
|--|------------------|-----------|------|
| Continuous Reverse Voltage               | V <sub>R</sub>   | 40        | V    |
| Continuous Forward Current               | I <sub>F</sub>   | 350       | mA   |
| Average Peak Forward Current; D.C. = 50% | I <sub>FAV</sub> | 510       | mA   |
| Non Repetitive Forward Current           | I <sub>FSM</sub> | t ≤ 100μs | A    |
|  |                  | t ≤ 10ms  | mA   |

**Thermal Characteristics**

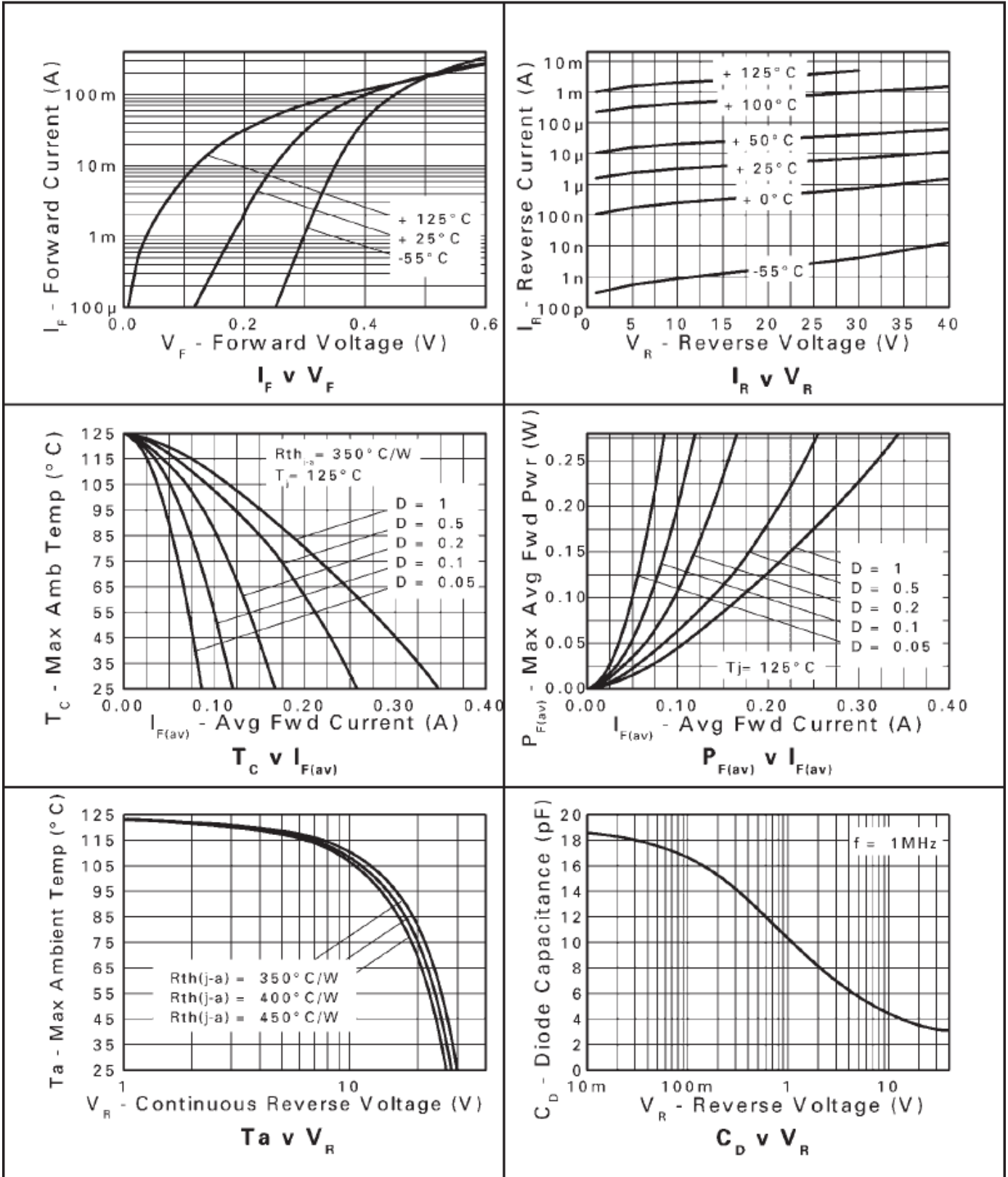
| Characteristic                            | Symbol           | Value       | Unit |
|---|------------------|-------------|------|
| Power Dissipation, T <sub>A</sub> = +25°C | P <sub>D</sub>   | (Note 5)    | 210  |
|   |                  | (Note 6)    | 330  |
| Thermal Resistance, Junction to Ambient   | R <sub>θJA</sub> | (Note 5)    | 470  |
|   |                  | (Note 6)    | 300  |
| Junction Temperature                      | T <sub>J</sub>   | 125         | °C   |
| Storage Temperature Range                 | T <sub>STG</sub> | -55 to +150 | °C   |

Notes: 5. For a device surface mounted on 1\*MRP FR-4 PC board, 2oz. in still air conditions.  
6. For a device surface mounted on 1inch sq. copper pad, 2oz. in still air conditions.


**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic            | Symbol             | Min | Typ | Max | Unit | Test Condition   |
|---------------------------|--------------------|-----|-----|-----|------|--|
| Reverse Breakdown Voltage | V <sub>(BR)R</sub> | 40  | 60  | —   | V    | I <sub>R</sub> = 100μA   |
| Forward Voltage (Note 7)  | V <sub>F</sub>     | —   | 300 | 325 | mV   | I <sub>F</sub> = 30mA  |
|                           |                    | —   | 335 | 370 |      | I <sub>F</sub> = 50mA  |
|                           |                    | —   | 405 | 460 |      | I <sub>F</sub> = 100mA   |
|                           |                    | —   | 730 | 810 |      | I <sub>F</sub> = 350mA   |
| Reverse Current           | I <sub>R</sub>     | —   | 7   | 12  | μA   | V <sub>R</sub> = 30V   |
| Diode Capacitance         | C <sub>D</sub>     | —   | 3.3 | 6   | pF   | f = 1MHz, V <sub>R</sub> = 25V   |
| Reverse Recovery Time     | t <sub>RR</sub>    | —   | 1.6 | —   | ns   | Switched from I <sub>F</sub> = 100mA to I <sub>R</sub> = 100mA<br>Measured @ I <sub>R</sub> = 10mA |

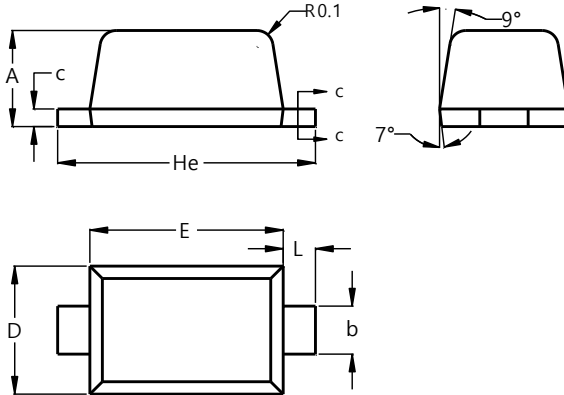
Note: 7. Measured under pulsed conditions. Pulse width = 300μs. Duty cycle ≤ 2%.



## Package Outline Dimensions

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

### SOD523

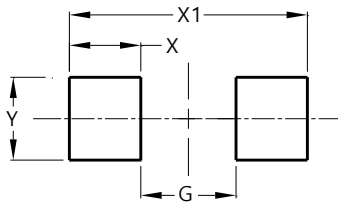


| SOD523               |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 0.55 | 0.65 |
| b                    | 0.26 | 0.34 |
| c                    | 0.11 | 0.17 |
| D                    | 0.75 | 0.85 |
| E                    | 1.15 | 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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