

## Product Summary

- $V_R = 40V$
- $I_F = 0.40A$
- $I_R = 40\mu A$

## Description and Applications

This compact SOD323 packaged Schottky diode offers users an excellent performance combination comprising high current operation, extremely low leakage and low forward voltage ensuring suitability for applications requiring efficient operation at higher temperatures (above 85°C) see Operational efficiency chart on page 4.

- DC – DC Converters
- Mobile Telecomms
- PCMCIA

## Features and Benefits

- Low  $V_F$
- High Current Capability ( $I_F = 0.40A$ )
- Miniature Surface Mount Package
- Low  $V_F$ , fast switching Schottky
- Package thermally rated to 150°C
- **Qualified to AEC-Q101 Standards for High Reliability**

## Mechanical Data

- Case: SOD323
- Case Material: UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Band
- Terminals: Finish - Matte Tin annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Weight: 0.004 grams (approximate)

SOD323



Top View

## Ordering Information (Note 1)

| Device    | Packaging | Shipping           |
|-----------|-----------|--------------------|
| ZHCS400TA | SOD323    | 3,000/Tape & Reel  |
| ZHCS400TC | SOD323    | 10,000/Tape & Reel |

Notes: 1. For Packaging Details, go to our website at <http://www.diodes.com>.

## Marking Information



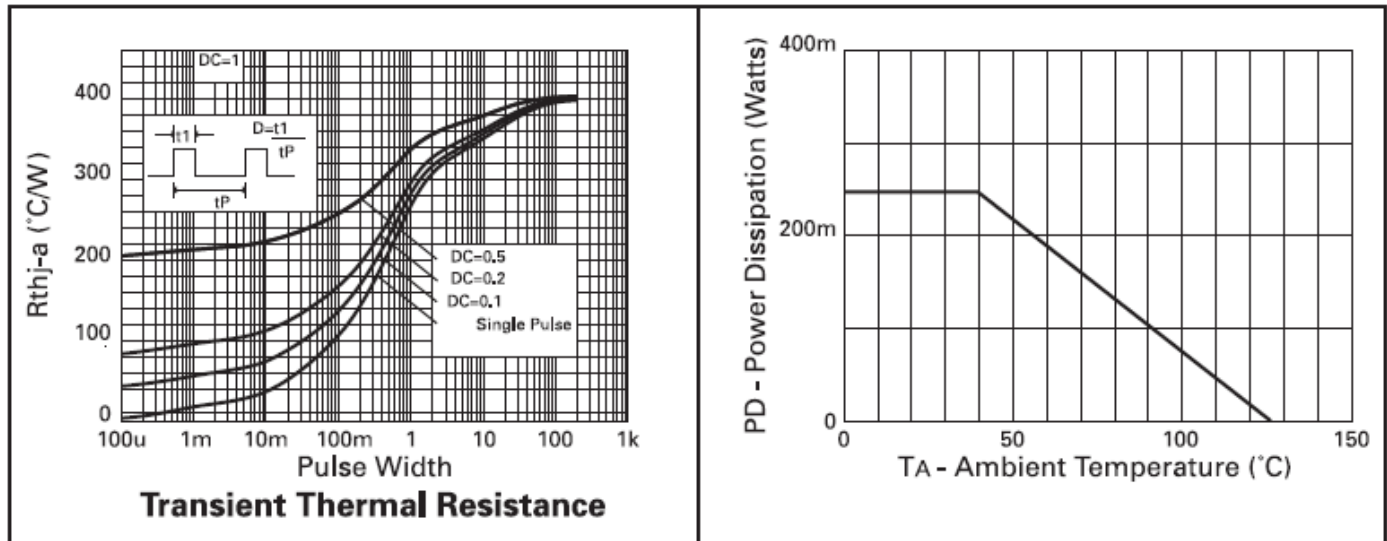
BD = Product Type Marking Code

**Maximum Ratings** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

| Characteristic                           | Symbol    | Value                   | Units |   |
|--|-----------|-------------------------|-------|---|
| Continuous Reverse Voltage               | $V_R$     | 40                      | V     |   |
| Continuous Forward Current               | $I_F$     | 400                     | mA    |   |
| Forward Voltage @ $I_F = 400\text{mA}$   | $V_F$     | 500                     | mV    |   |
| Average Peak Forward Current; D.C. = 50% | $I_{FAV}$ | 1000                    | mA    |   |
| Continuous Drain Current (Note x)        | $I_{FSM}$ | $t \leq 100\mu\text{s}$ | 6.75  | A |
|  |           | $t \leq 10\text{ms}$    | 3     | A |

**Thermal Characteristics**

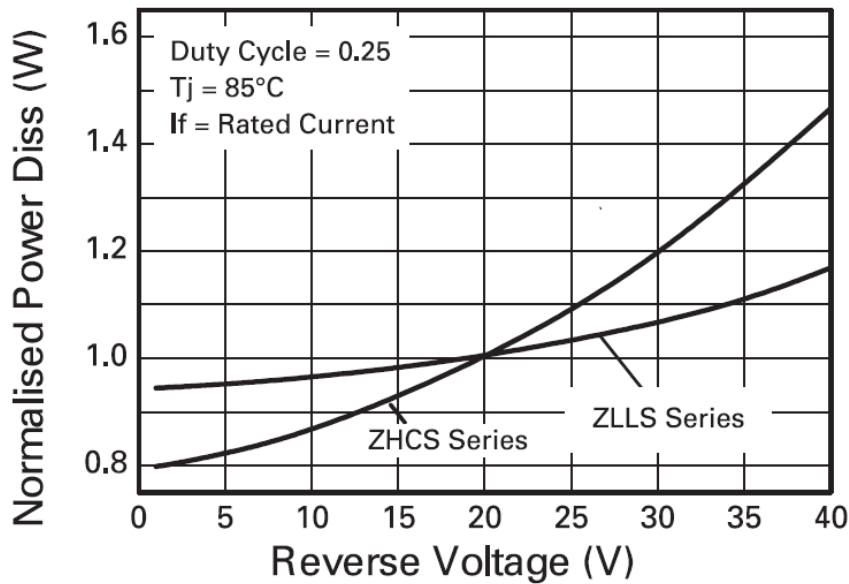
| Characteristic                              | Symbol    | Value       | Unit             |
|---|-----------|-------------|------------------|
| Power Dissipation, $T_A = 25^\circ\text{C}$ | $P_D$     | 250         | mW               |
| Storage Temperature Range                   | $T_{STG}$ | -55 to +150 | $^\circ\text{C}$ |



**Electrical Characteristics** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

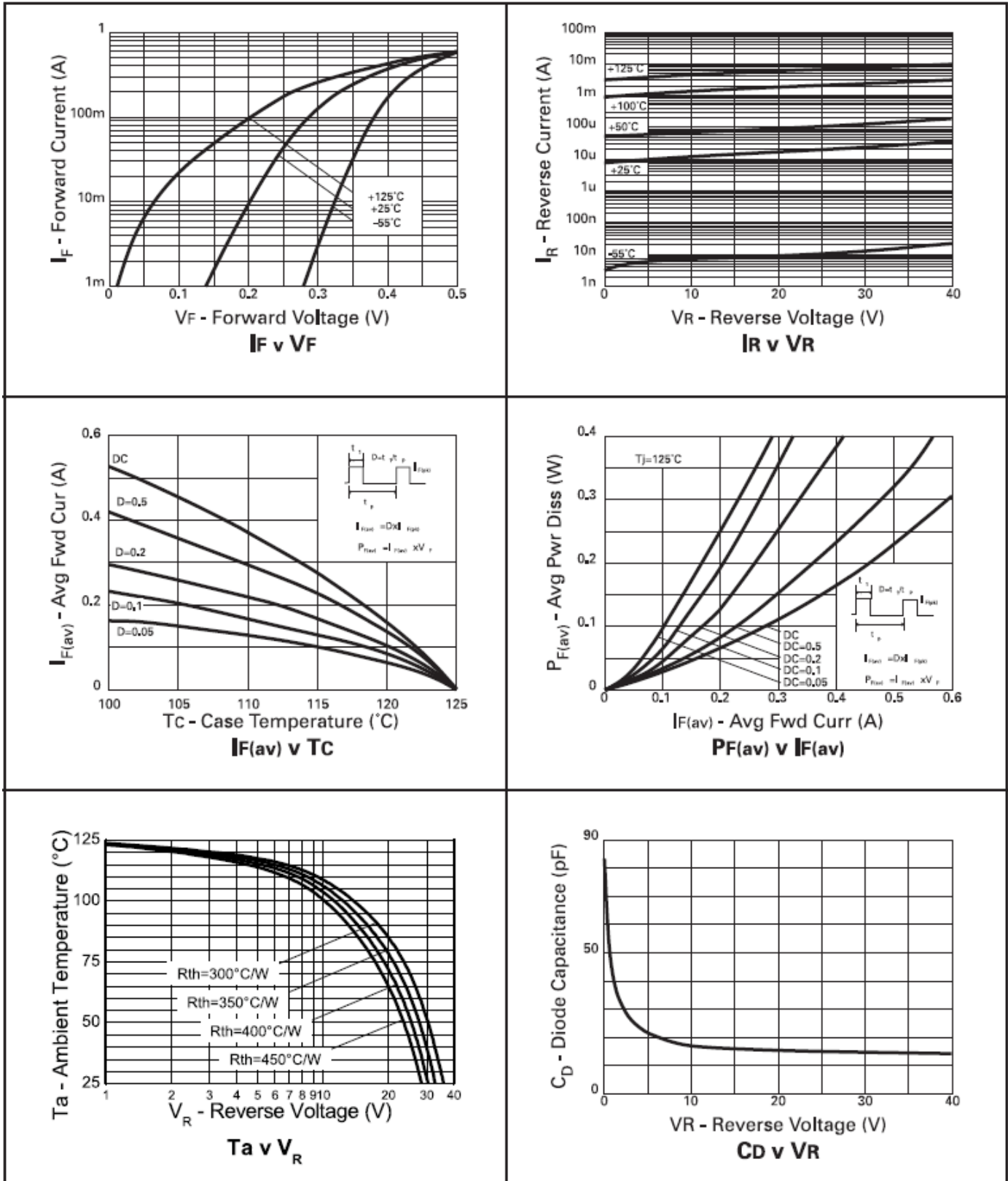
| Characteristic            | Symbol      | Min | Typ | Max  | Unit          | Test Condition                                |
|---------------------------|-------------|-----|-----|------|---------------|---|
| Reverse Breakdown Voltage | $V_{(BR)R}$ | 40  | 60  | -    | V             | $I_R = 200\mu\text{A}$                        |
| Forward Voltage           | $V_F$       | -   | 270 | 300  | mV            | $I_F = 50\text{mA}$                           |
|                           |             | -   | 300 | 350  |               | $I_F = 100\text{mA}$                          |
|                           |             | -   | 370 | 460  |               | $I_F = 250\text{mA}$                          |
|                           |             | -   | 425 | 500  |               | $I_F = 400\text{mA}$                          |
|                           |             | -   | 550 | 670  |               | $I_F = 750\text{mA}$                          |
|                           |             | -   | 640 | 780  |               | $I_F = 1,000\text{mA}$                        |
|                           |             | -   | 810 | 1050 |               | $I_F = 1,500\text{mA}$                        |
|                           |             | -   | 440 | -    |               | $I_F = 500\text{mA}, T_A = 100^\circ\text{C}$ |
| Reverse Current           | $I_R$       | -   | 15  | 40   | $\mu\text{A}$ | $V_R = 30\text{V}$                            |
| Diode Capacitance         | $C_D$       | -   | 20  | -    | pF            | $f = 1\text{MHz}, V_R = 25\text{V}$           |

**Operational efficiency chart**

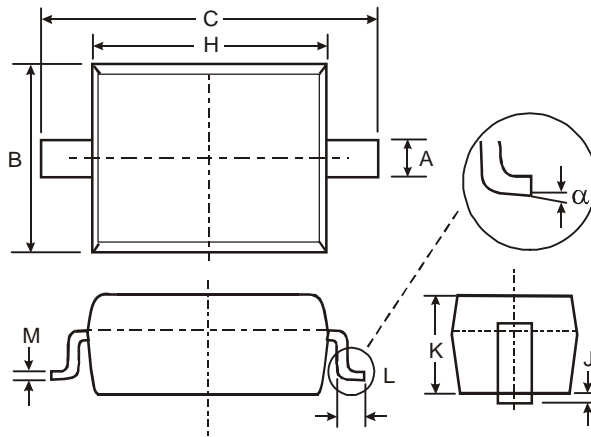


**Operational Efficiency Example**

The operational efficiency chart indicates the beneficial use of the ZLLS series diodes in applications requiring higher voltage, higher temperature operation. Circuits requiring low voltage low temperature operation will benefit from using Zetex low  $V_F$  ZHCS series diodes.

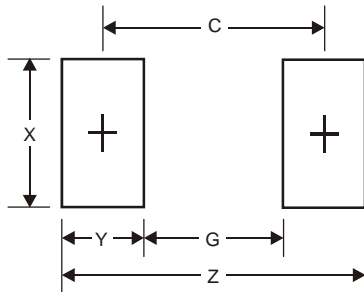


**Package Outline Dimensions**



| SOD323               |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 0.25 | 0.35 |
| B                    | 1.20 | 1.40 |
| C                    | 2.30 | 2.70 |
| H                    | 1.60 | 1.80 |
| J                    | 0.00 | 0.10 |
| K                    | 1.0  | 1.1  |
| L                    | 0.20 | 0.40 |
| M                    | 0.10 | 0.15 |
| α                    | 0°   | 8°   |
| All Dimensions in mm |      |      |

**Suggested Pad Layout**



| Dimensions | Value (in mm) |
|------------|---------------|
| Z          | 3.75          |
| G          | 1.05          |
| X          | 0.65          |
| Y          | 1.35          |
| C          | 2.40          |

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