



**THE DATASHEET OF
ZLLS410TA**



Product Summary

| V_{RRM} (V) | I_o (mA) | V_F (MAX) (mV)@1A | I_R (MAX) (μ A)@10V |
|---------------|------------|---------------------|----------------------------|
| 10 | 750 | 580 | 6 |

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.

- Low power DC-DC conversions
- Level shifting
- Reverse blocking



SOD323

Features and Benefits

- Extremely Low Leakage
- High Current Capability
- Low V_F , Fast Switching Schottky
- SOD323 Package
- Package Thermally Rated to +150°C
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e.: parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please refer to the related automotive grade (Q-suffix) part. A listing can be found at <https://www.diodes.com/products/automotive/automotive-products/>.**
- **This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability. <https://www.diodes.com/quality/product-definitions/>**

Mechanical Data

- Package: SOD323
- Package Material: Molded Plastic. "Green" Molding Compound. UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208@3
- Weight: 0.0049 grams (Approximate)



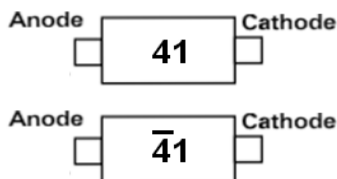
Device symbol

Ordering Information (Note 4)

| Part Number | Package | Packing | |
|-------------|---------|---------|-------------|
| | | Qty. | Carrier |
| ZLLS410TA | SOD323 | 3,000 | 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



41 & $\bar{4}1$ = Product Type Marking Code



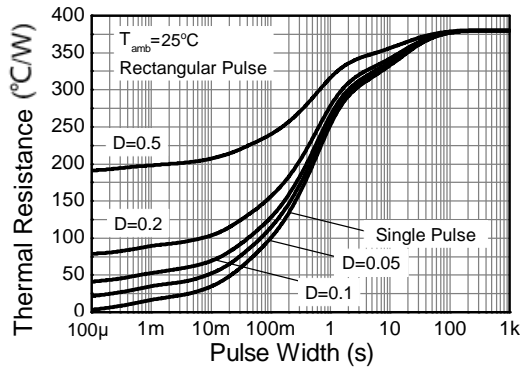
Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Value | Unit |
|---|------------------|-----------|------|
| Continuous Reverse Voltage | V _R | 10 | V |
| Continuous Forward Current | I _F | 750 | mA |
| Peak Repetitive Forward Current Rectangular Pulse Duty Cycle | I _{FPK} | 1.35 | A |
| Non Repetitive Forward Current | I _{FSM} | t ≤ 100μs | 17 |
| | | t ≤ 10ms | 4 |

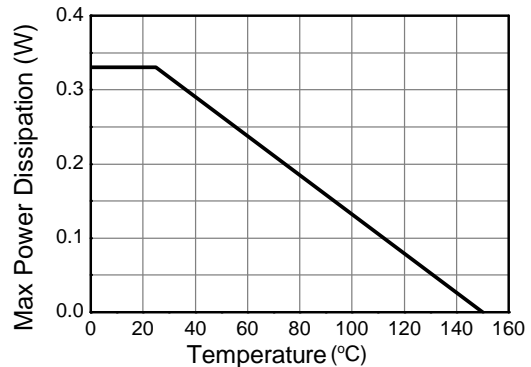
Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|------------------------------|------------------|-------------|------|
| Power Dissipation (Note 5) | P _D | 0.30 | W |
| Power Dissipation (Note 6) | P _D | 0.4 | W |
| Junction to Ambient (Note 5) | R _{θJA} | 410 | °C/W |
| Junction to Ambient (Note 6) | R _{θJA} | 310 | °C/W |
| Storage Temperature Range | T _{STG} | -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.



Transient Thermal Impedance



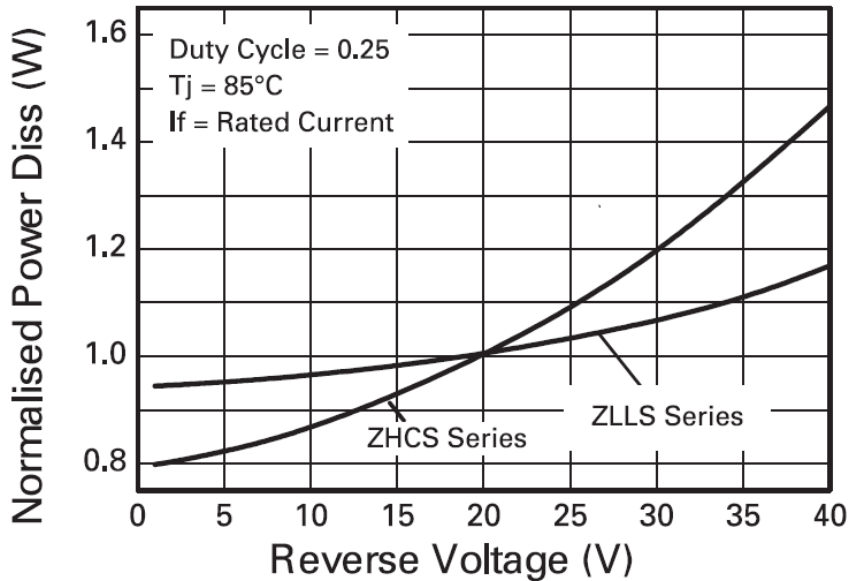
Derating Curve

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|---------------------------|--------------------|-----|-----|-----|------|--|
| Reverse Breakdown Voltage | V _{(BR)R} | 10 | — | — | V | I _R = 200μA |
| Forward Voltage (Note 7) | V _F | — | 285 | 300 | mV | I _F = 10mA |
| | | — | 350 | 380 | mV | I _F = 100mA |
| | | — | 500 | 580 | mV | I _F = 1A |
| Reverse Current | I _R | — | 0.5 | 4 | μA | V _R = 5V |
| | | — | 0.7 | 5 | μA | V _R = 8V |
| | | — | 1 | 6 | μA | V _R = 10V |
| | | — | — | 200 | μA | V _R = 8V, T _A = +85°C |
| Diode Capacitance | C _D | — | 37 | — | pF | f = 1MHz, V _R = 10V |
| Reverse Recovery Time | t _{RR} | — | 3 | — | ns | Switched from I _F = 500mA to V _R = 5.5V Measured @ I _R = 50mA. di/dt = 500mA/ns, R _{SOURCE} = 6Ω; R _{LOAD} = 10Ω |
| Reverse Recovery Charge | Q _{RR} | — | 210 | — | pC | |

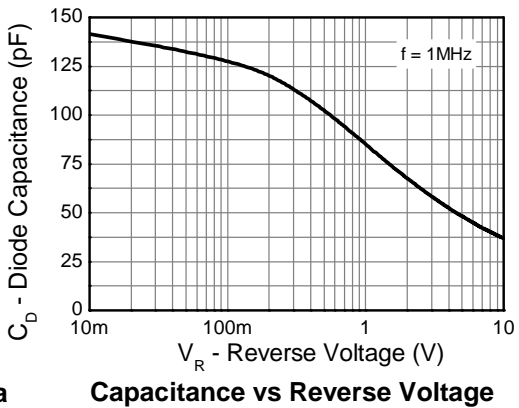
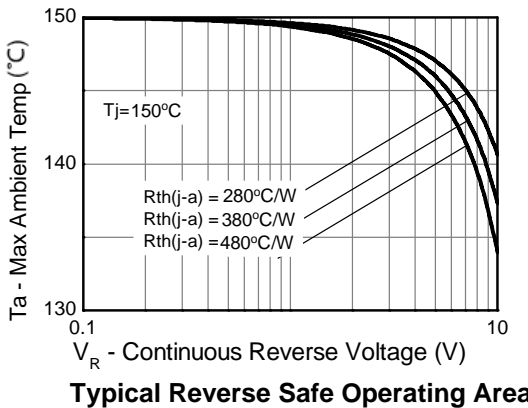
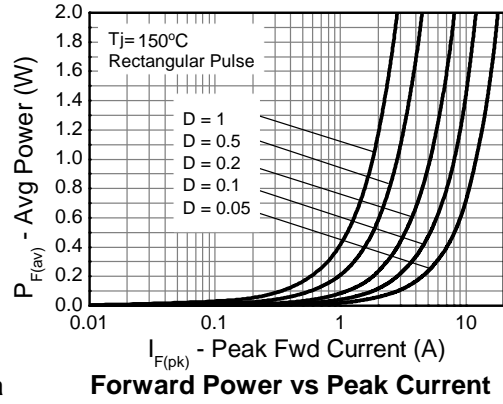
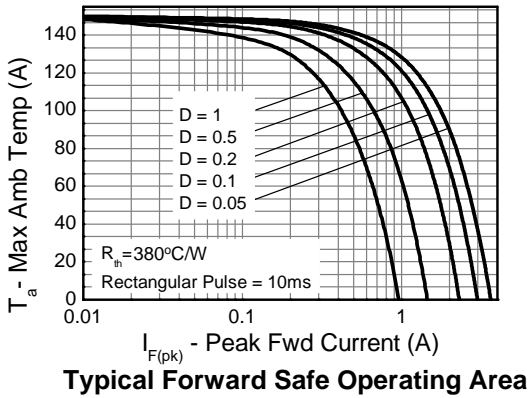
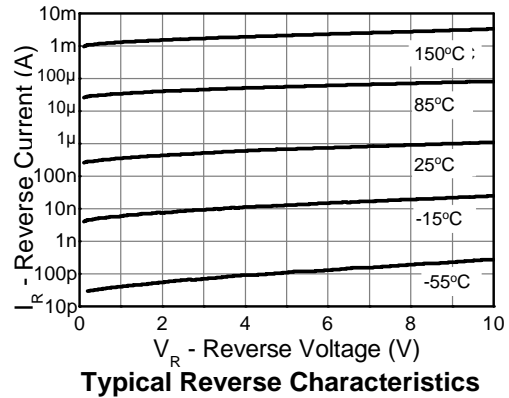
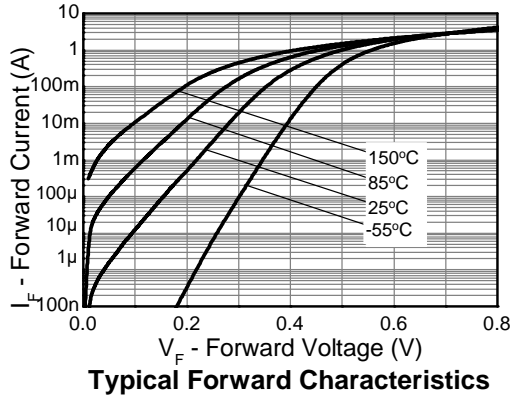
Note: 7. Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle < 2%

Operational Efficiency Chart



Operational Efficiency Example

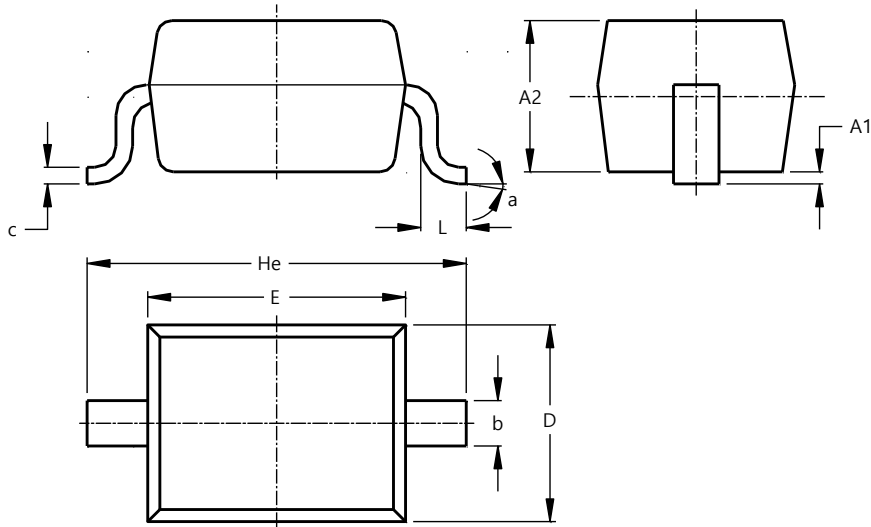
The operational efficiency chart indicates the beneficial use of the ZLLS series diodes in applications requiring higher voltage, higher temperature operation. Circuits requiring low voltage low temperature operation will benefit from using Zetex low V_F ZHCS series diodes.



Package Outline Dimensions

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

SOD323

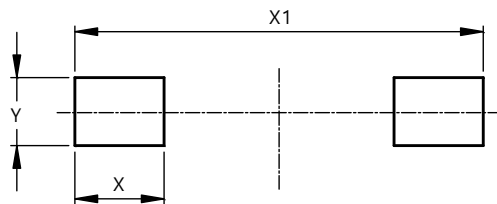


| SOD323 | | | |
|----------------------|------|------|------|
| Dim | Min | Max | Typ |
| A1 | -- | 0.10 | 0.05 |
| A2 | 1.00 | 1.10 | 1.05 |
| b | 0.25 | 0.35 | 0.30 |
| c | 0.10 | 0.15 | 0.11 |
| D | 1.20 | 1.40 | 1.30 |
| E | 1.60 | 1.80 | 1.70 |
| He | 2.30 | 2.70 | 2.50 |
| L | 0.20 | 0.40 | 0.30 |
| a | 0° | 8° | -- |
| All Dimensions in mm | | | |

Suggested Pad Layout

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

SOD323



| Dimensions | Value (in mm) |
|------------|---------------|
| X | 0.590 |
| X1 | 2.700 |
| Y | 0.450 |

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