10V LOW LEAKAGE SCHOTTKY DIODE IN SOD323

Product Summary

V_{RRM} (V)	I_O (mA)	$V_{F\ (MAX)}$ (mV)@1A	$I_{R\ (MAX)}$ (µA)@10V
10	750	580	6

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/**

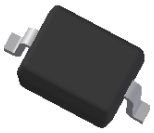
Description and Applications

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

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 e3
- Weight: 0.0049 grams (Approximate)



SOD323

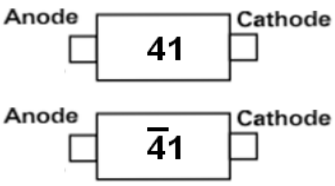
Device symbol

Ordering Information (Note 4)

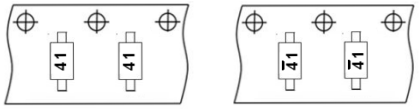
Part Number	Package	Packing	
		Qty.	Carrier
ZLLS410TA	SOD323	3,000	Tape & Reel

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



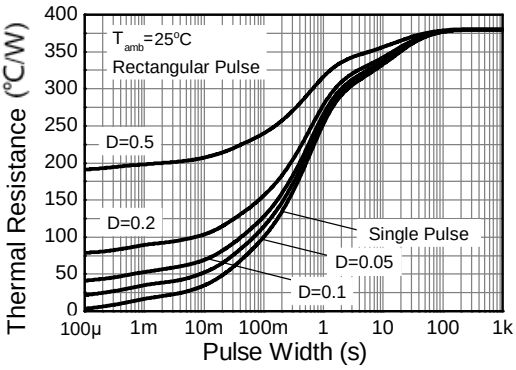
Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

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	t ≤ 100µs t ≤ 10ms	I_{FSM}	17 4	A A

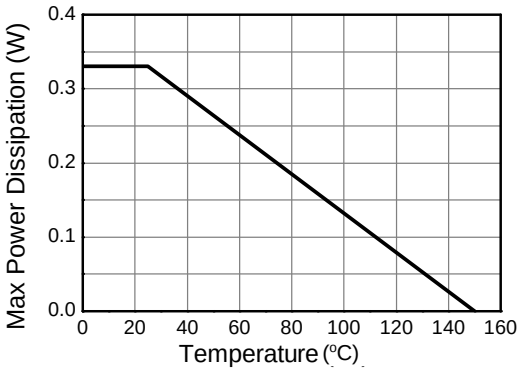
Thermal Characteristics

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)	$R_{\theta JA}$	410	°C/W
Junction to Ambient (Note 6)	$R_{\theta JA}$	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



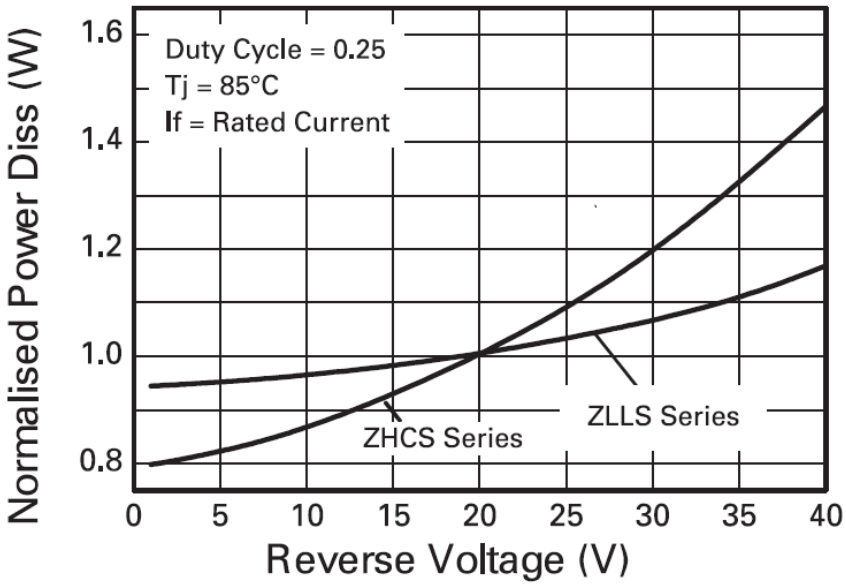
Derating Curve

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	— — —	285 350 500	300 380 580	mV mV mV	I_F = 10mA I_F = 100mA I_F = 1A
Reverse Current	I_R	— — — —	0.5 0.7 1 —	4 5 6 200	µA µA µA µA	V_R = 5V V_R = 8V V_R = 10V V_R = 8V, T_A = +85°C
Diode Capacitance	C_D	—	37	—	pF	f = 1MHz, V_R = 10V
Reverse Recovery Time Reverse Recovery Charge	t_{RR} Q_{RR}	— —	3 210	— —	ns pC	Switched from I_F = 500mA to V_R = 5.5V Measured @ I_R = 50mA. di/dt = 500mA/ns, R_{SOURCE} = 6Ω; R_{LOAD} = 10Ω

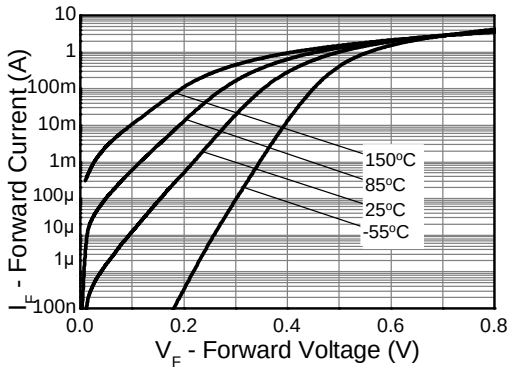
Note: 7. Measured under pulsed conditions. Pulse width ≤ 300µs. Duty cycle < 2%

Operational Efficiency Chart

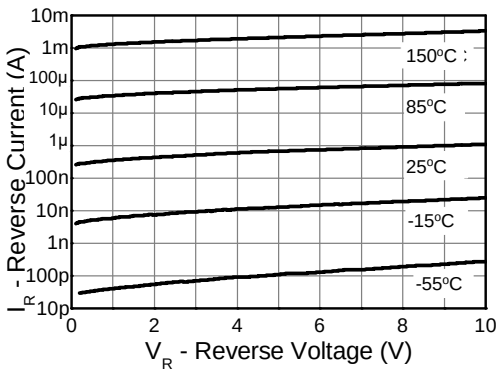


Operational Efficiency Example

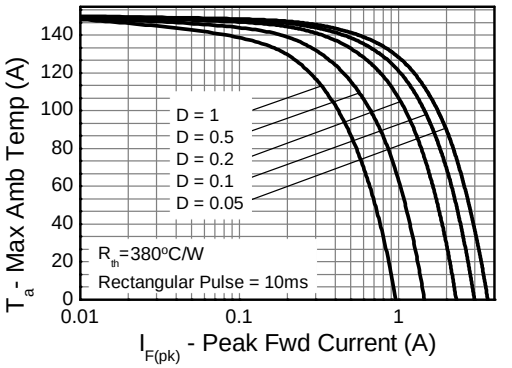
The operational efficiency chart indicates the beneficial use of the ZLLS series diodes in applications requiring higher voltage, higher temperature operation. Circuits requiring low voltage low temperature operation will benefit from using Zetex low V_F ZHCS series diodes.



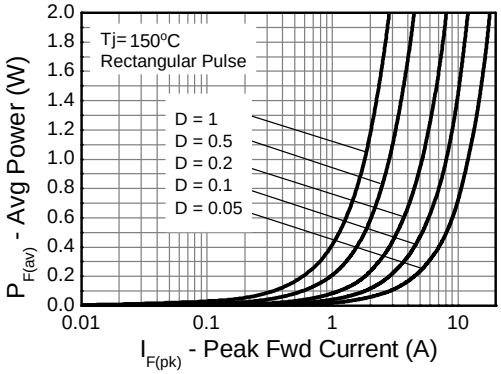
Typical Forward Characteristics



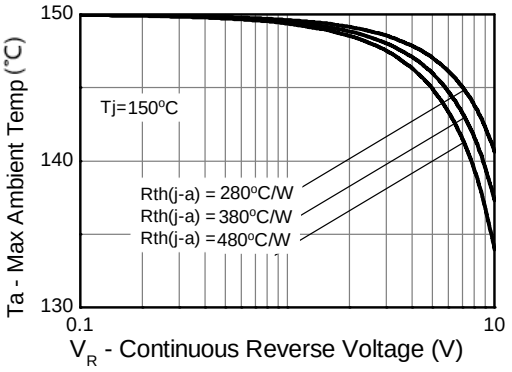
Typical Reverse Characteristics



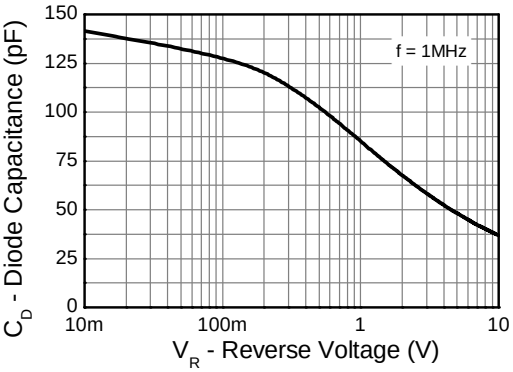
Typical Forward Safe Operating Area



Forward Power vs Peak Current



Typical Reverse Safe Operating Area

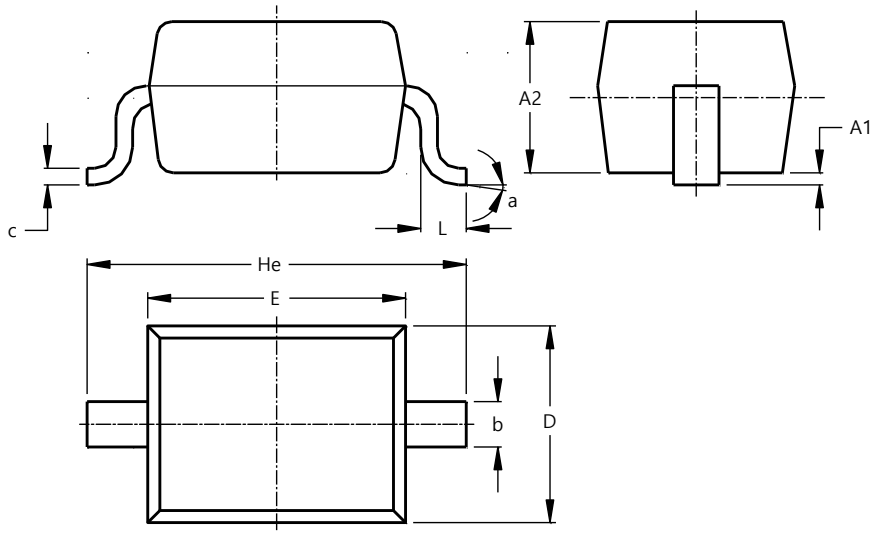


Capacitance vs Reverse Voltage

Package Outline Dimensions

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

SOD323

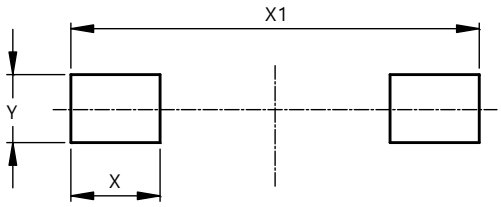


SOD323			
Dim	**Min**	**Max**	**Typ**
A1	--	0.10	0.05
A2	1.00	1.10	1.05
b	0.25	0.35	0.30
c	0.10	0.15	0.11
D	1.20	1.40	1.30
E	1.60	1.80	1.70
He	2.30	2.70	2.50
L	0.20	0.40	0.30
a	0º	8º	--
All Dimensions in mm			

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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