

## Features

- Low Equivalent on Resistance
- Extremely Low Leakage (Typically 6µA @30V)
- High Current Capability ( $I_F = 1.16A$ )
- Low  $V_F$ , Fast Switching Schottky
- SOT23 Package
- ZLLS1000 Complements Low Temperature Equivalent ZHCS1000
- Package Thermally Rated to +150°C
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **An Automotive-Compliant Part is Available Under Separate Datasheet ([ZLLS1000QTA](#))**

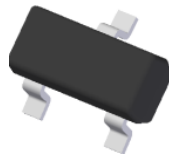
## Mechanical Data

- Case: SOT23
- UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Alloy 42 Leadframe. Solderable per MIL-STD-202, Method 208 **e3**
- Weight: 0.008 grams (Approximate)

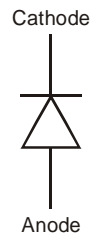
## Applications

- DC-DC Converters
- Strobes
- Mobile Phones
- Charging Circuits
- Motor Control

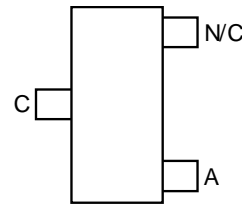
SOT23



Top View



Device Symbol



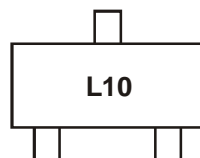
Pinout – Top View

## Ordering Information (Note 4)

Part Number	Marking	Reel Size (inches)	Tape Width (mm)	Quantity Per Reel
ZLLS1000TA	L10	7	8	3,000 Units

- 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



L10 = Product Type Marking Code

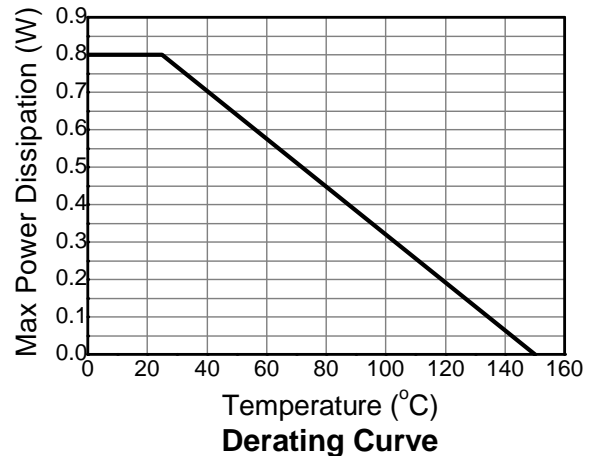
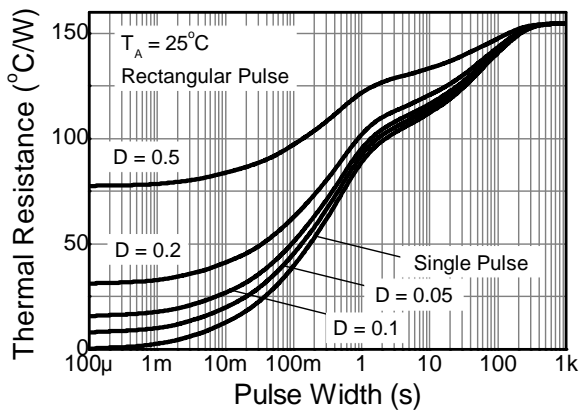
**Maximum Ratings** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Continuous Reverse Voltage	$V_R$	40	V
Forward Current	$I_F$	1.16	A
Peak Repetitive Forward Current Rectangular Pulse Duty Cycle 50% 100 $\mu\text{s}$ Pulse Width	$I_{FPK}$	2.6	A
Non Repetitive Forward Current	$I_{FSM}$	22	A
$t \leq 100\mu\text{s}$ $t \leq 10\text{ms}$		6.4	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation @ $T_A = +25^\circ\text{C}$ Single Die Continuous Single Die Measured at $t < 5\text{s}$	$P_D$	0.8	W
		1.18	
Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	155	$^\circ\text{C/W}$
Thermal Resistance Junction to Ambient (Note 6)	$R_{\theta JA}$	106	$^\circ\text{C/W}$
Thermal Resistance Junction to Lead (Solder Point)	$R_{\theta JL}$	80	$^\circ\text{C/W}$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^\circ\text{C}$
Junction Temperature	$T_J$	+150	$^\circ\text{C}$

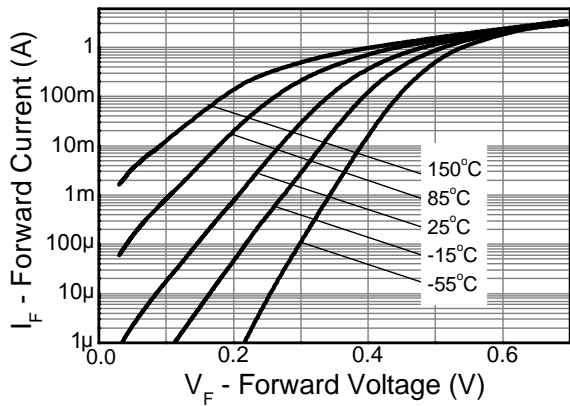
Notes: 5. For a device surface mounted on 25mm x 25mm FR-4 PCB with high coverage of single sided 1oz copper, in still air conditions.  
6. For a device mounted on FRB PCB measured at  $t < 5\text{s}$ .

**Thermal Characteristics and Derating information**


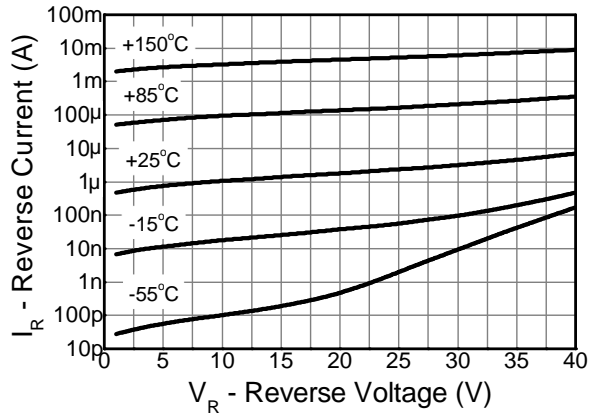
**Electrical Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage	$V_{(BR)R}$	40	—	—	V	$I_R = 500\mu\text{A}$
Forward Voltage (Note 7)	$V_F$	—	320	355	mV	$I_F = 50\text{mA}$
			335	380		$I_F = 100\text{mA}$
			380	425		$I_F = 250\text{mA}$
			410	460		$I_F = 500\text{mA}$
			440	510		$I_F = 750\text{mA}$
			470	560		$I_F = 1\text{A}$
			530	660		$I_F = 1.5\text{A}$
			430	—		$I_F = 1000\text{mA}, T_A = +100^\circ\text{C}$
Reverse Current	$I_R$	—	5 500	20 —	$\mu\text{A}$ $\mu\text{A}$	$V_R = 30\text{V}$ $V_R = 30\text{V}, T_A = +85^\circ\text{C}$
Diode Capacitance	$C_D$	—	28	—	pF	$f = 1\text{MHz}, V_R = 30\text{V}$
Reverse Recovery Time	$t_{RR}$	—	5	—	ns	Switched from $I_F = 500\text{mA}$ to $V_R = 5.5\text{V}$
Reverse Recovery Charge	$Q_{RR}$	—	350	—	nC	Measured @ $I_R 50\text{mA}, di/dt = 500\text{mA/ns}$ $R_{SOURCE} = 6\Omega; R_{LOAD} = 10\Omega$

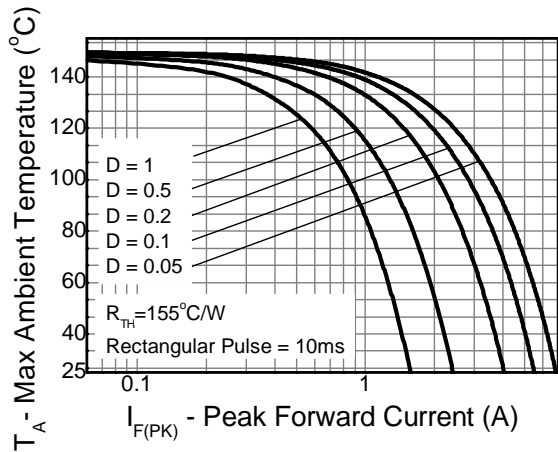
Note: 7. Measured under pulsed conditions. Pulse width = 300 $\mu\text{s}$ . Duty cycle < 2%.



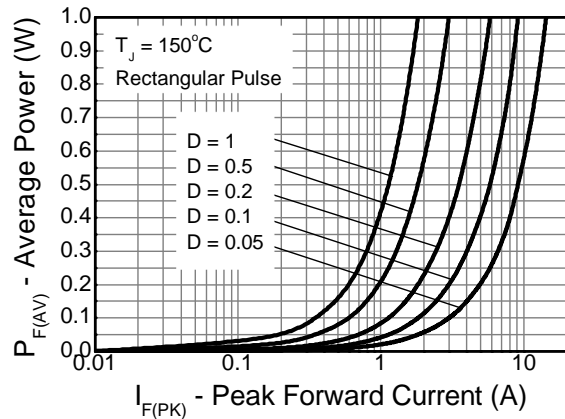
**Typical Forward Characteristics**



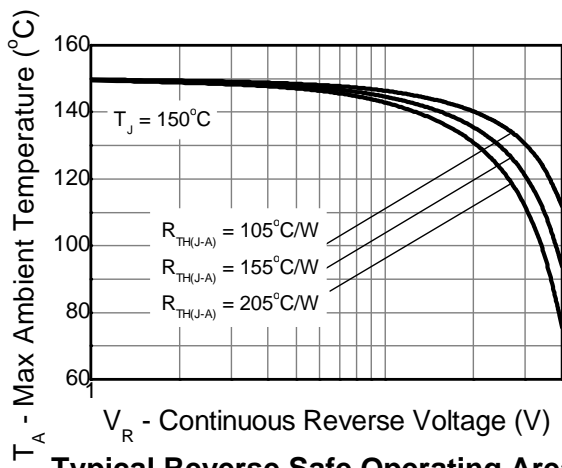
**Typical Reverse Characteristics**



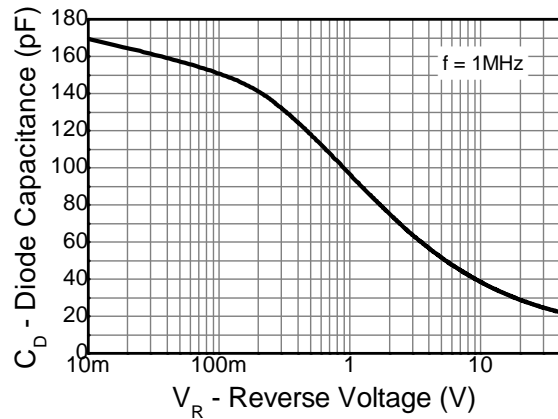
**Typical Forward Safe Operating Area**



**Forward Power vs Peak Current**



**Typical Reverse Safe Operating Area**

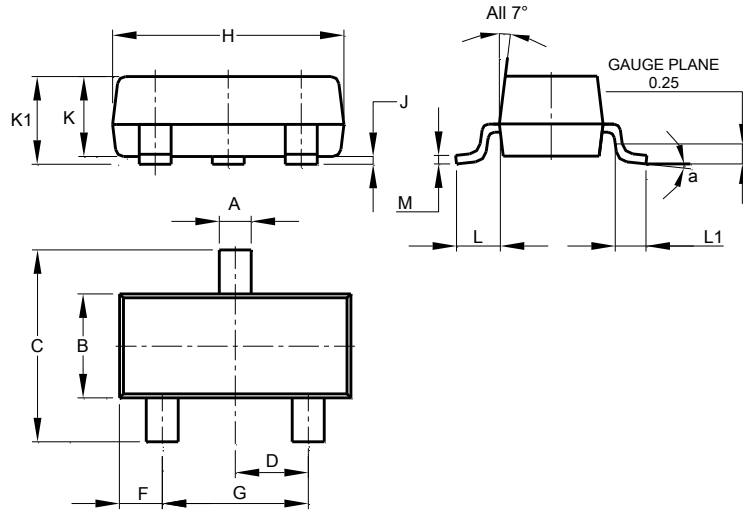


**Capacitance vs Reverse Voltage**

**Package Outline Dimensions**

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

**SOT23**

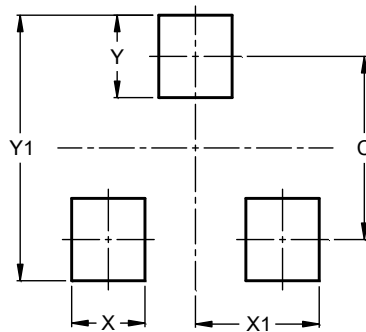


SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	0°	8°	--
All Dimensions in mm			

**Suggested Pad Layout**

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

**SOT23**



Dimensions	Value (in mm)
C	2.0
X	0.8
X1	1.35
Y	0.9
Y1	2.9

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