

40V HIGH CURRENT LOW LEAKAGE SCHOTTKY DIODE

Features

- Low Equivalent on Resistance
- Extremely Low Leakage (typically 6 μ A @30V)
- High current capability ($I_F = 1.16$ A)
- 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**

Mechanical Data

- Case: SOT23
- UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish
- Weight: 0.008 grams (Approximate)

Applications

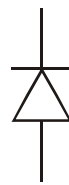
- DC – DC Converters
- Strokes
- Mobile Phones
- Charging Circuits
- Motor Control

SOT23



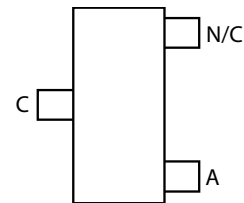
Top View

Cathode



Anode

Device Symbol



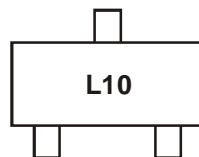
Pinout – Top View

Ordering Information

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
ZLLS1000TA	L10	7	8	3,000 units
ZLLS1000TC	L10	13	8	10,000 units

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
 2. See <http://www.diodes.com> 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.

Marking Information



L10 = Product type Marking Code

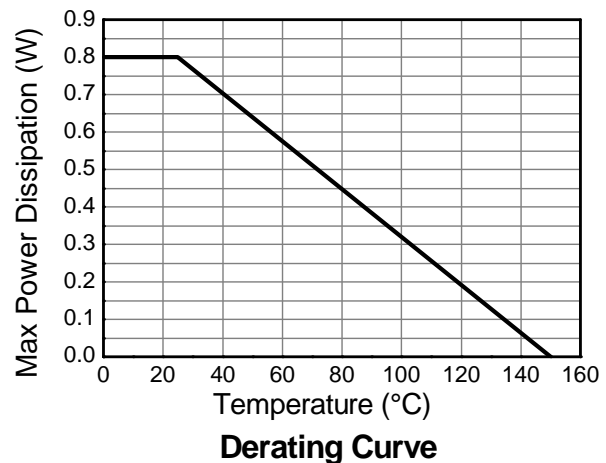
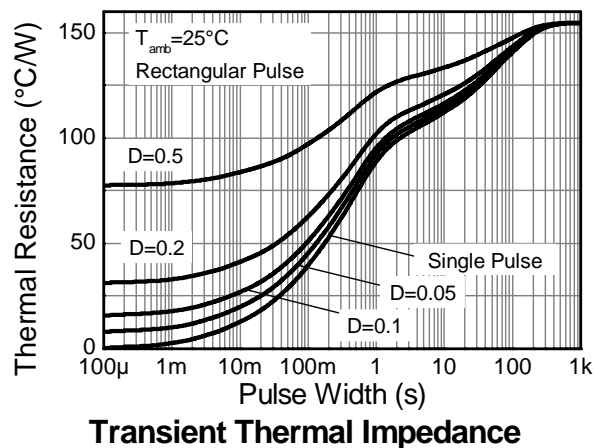
Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Continuous Reverse Voltage	V _R	40	V
Forward Current	I _F	1.16	A
Peak Repetitive Forward Current	I _{FPK}	2.6	A
Rectangular Pulse Duty Cycle 50% 100µs pulse width			
Non Repetitive Forward Current	I _{FSM}	22	A
		6.4	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation @T _A = +25°C	P _D	0.8	W
Single Die Continuous		1.18	
Single Die Measured at t<5 secs			
Thermal Resistance Junction to Ambient (Note 4)	R _{θJA}	155	°C/W
Thermal Resistance Junction to Ambient (Note 5)	R _{θJA}	106	°C/W
Thermal Resistance Junction to Lead (Solder Point)	R _{θJL}	80	°C/W
Storage temperature range	T _{STG}	-55 to +150	°C
Junction temperature	T _J	150	°C

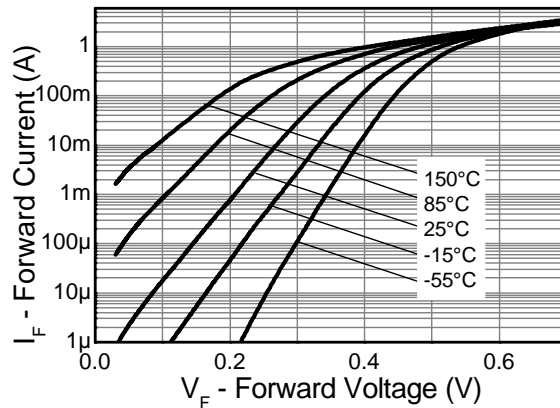
Notes: 4. For a device surface mounted on 25mm x 25mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.
 5. For a device mounted on FRB PCB measured at t<5secs.

Thermal Characteristics and Derating information


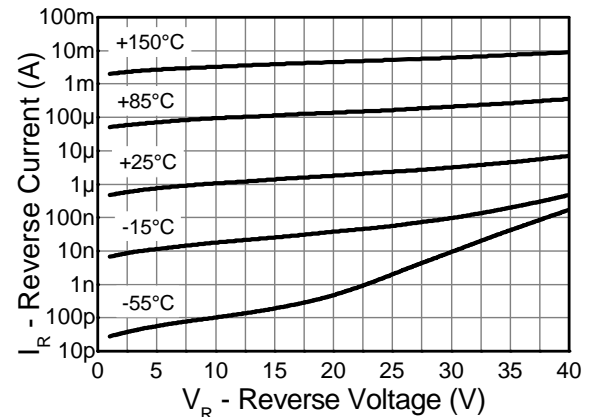
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse breakdown voltage	V _{(BR)R}	40	-	-	V	I _R = 500μA
Forward voltage (Note 6)	V _F	-	320	355	mV	I _F = 50mA
			335	380		I _F = 100mA
			380	425		I _F = 250mA
			410	460		I _F = 500mA
			440	510		I _F = 750mA
			470	560		I _F = 1A
			530	660		I _F = 1.5A
			430	-		I _F = 1000mA, T _A = +100°C
Reverse current	I _R	-	5 500	20 -	μA μA	V _R = 30V V _R = 30V, T _A = +85°C
Diode capacitance	C _D	-	28	-	pF	f = 1MHz, V _R = 30V
Reverse recovery time	t _{rr}	-	5	-	ns	Switched from I _F = 500mA to V _R = 5.5V
Reverse recovery charge	Q _{rr}	-	350	-	nC	Measured @ I _R 50mA. di/dt = 500mA/ns. R _{source} = 6Ω; R _{load} = 10Ω

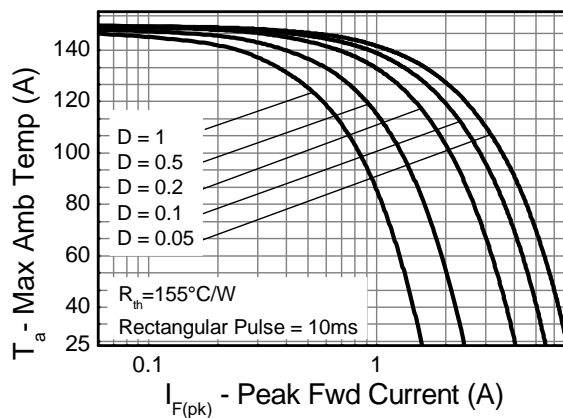
Notes: 6. Measured under pulsed conditions. Pulse width = 300μs. Duty cycle < 2%



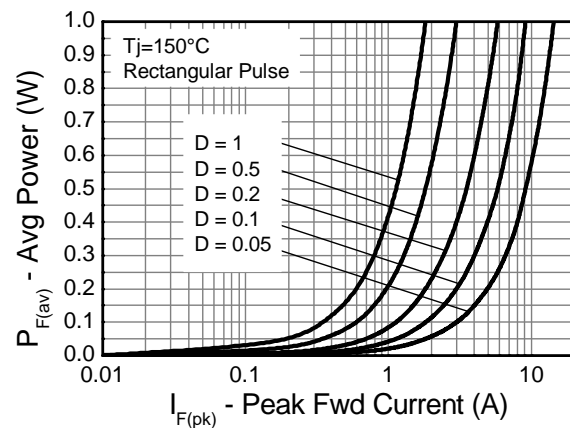
Typical Forward Characteristics



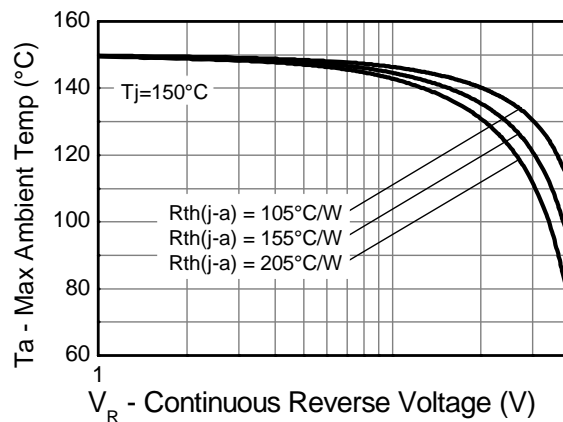
Typical Reverse Characteristics



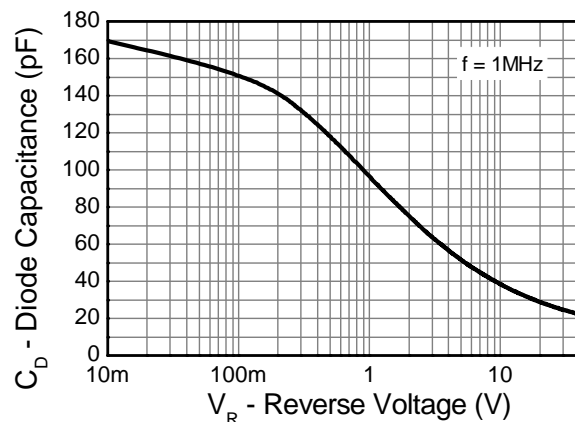
Typical Forward Safe Operating Area



Forward Power vs Peak Current

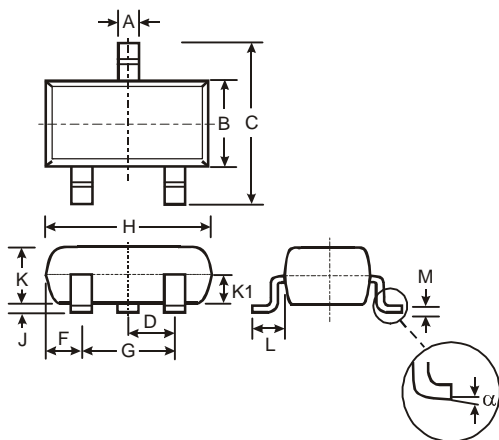


Typical Reverse Safe Operating Area



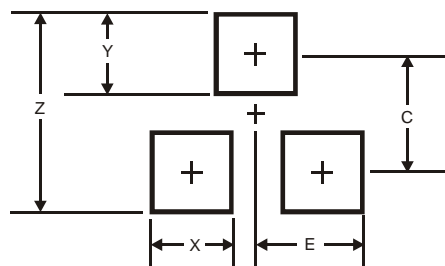
Capacitance vs Reverse Voltage

Package Outline Dimensions



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	0.903	1.10	1.00
K1	-	-	0.400
L	0.45	0.61	0.55
M	0.085	0.18	0.11
α	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

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