

**40V HIGH CURRENT LOW LEAKAGE SCHOTTKY DIODE**

**Features**

- Low Equivalent on Resistance
- Extremely Low Leakage (typically 6 $\mu$ A @30V)
- High current capability ( $I_F = 1.16A$ )
- Low  $V_F$ , Fast Switching Schottky
- SOT-23 Package
- ZLLS1000 Complements Low Temperature Equivalent ZHCS1000
- Package Thermally Rated to 150°C
- **Lead, Halogen, and Antimony Free/RoHS Compliant (Note 1)**
- **“Green” Device (Note 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**

**Mechanical Data**

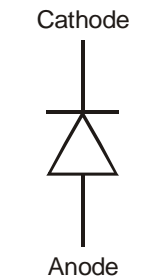
- Case: SOT-23
- UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish
- Weight: 0.008 grams (Approximate)

**Applications**

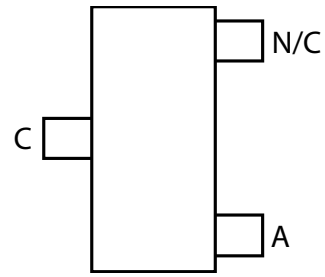
- DC – DC converters
- Strokes
- Mobile phones
- Charging circuits
- Motor control



SOT-23



Device symbol



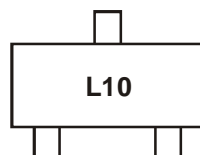
Pinout – top view

**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 purposefully added lead. Halogen and Antimony Free.  
2. Diodes Inc's "Green" Policy can be found on our website at <http://www.diodes.com>

**Marking Information**



L10 = Product type Marking Code

**Maximum Ratings** @T<sub>A</sub> = 25°C unless otherwise specified

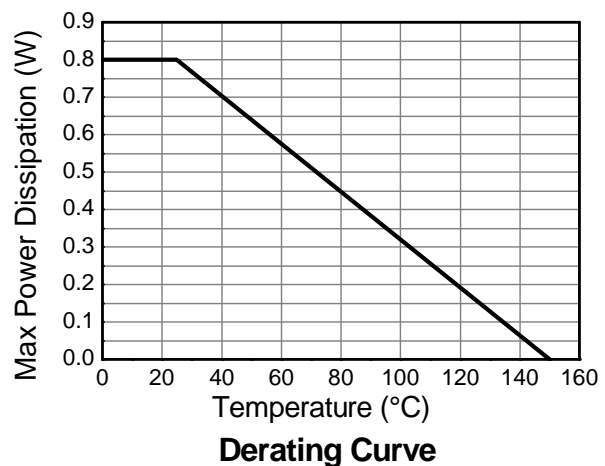
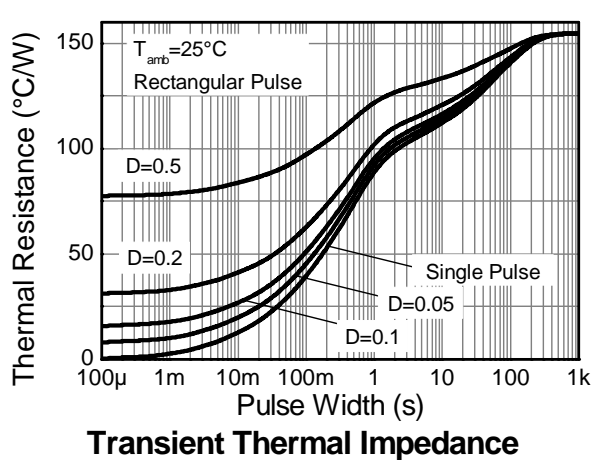
Characteristic	Symbol	Value	Unit
Continuous Reverse Voltage	V <sub>R</sub>	40	V
Forward Current	I <sub>F</sub>	1.16	A
Peak Repetitive Forward Current Rectangular Pulse Duty Cycle 50% 100µs pulse width	I <sub>FPK</sub>	2.6	A
Non Repetitive Forward Current	I <sub>FSM</sub>	22	A
	t≤100µs	6.4	A
	t≤10ms		A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation @T <sub>A</sub> = 25°C	P <sub>D</sub>	0.8	W
Single Die Continuous		1.18	
Single Die Measured at t<5 secs			
Thermal Resistance Junction to Ambient (Note 3)	R <sub>θJA</sub>	155	°C/W
Thermal Resistance Junction to Ambient (Note 4)	R <sub>θJA</sub>	106	°C/W
Thermal Resistance Junction to Lead (Solder Point)	R <sub>θJL</sub>	80	°C/W
Storage temperature range	T <sub>STG</sub>	-55 to +150	°C
Junction temperature	T <sub>J</sub>	150	°C

Notes: 3. For a device surface mounted on 25mm x 25mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.  
4. For a device mounted on FRB PCB measured at t<5secs.

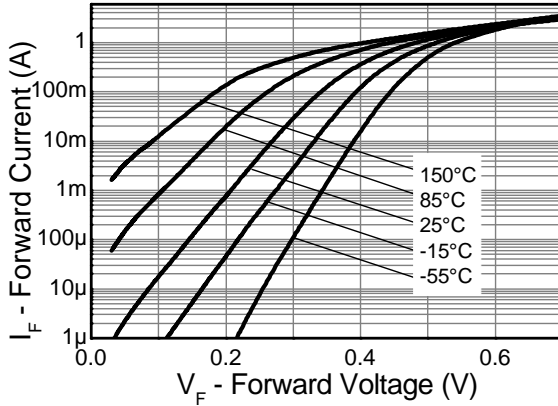
**Thermal Characteristics and Derating information**



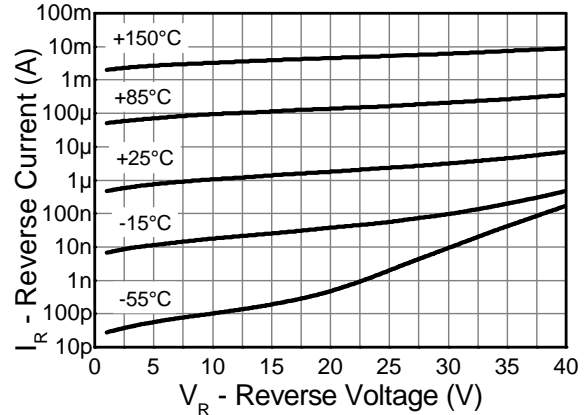
**Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

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

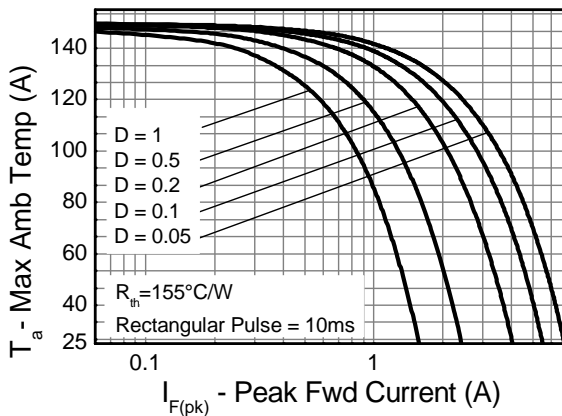
Notes: 5. Measured under pulsed conditions. Pulse width = 300μs. Duty cycle < 2%



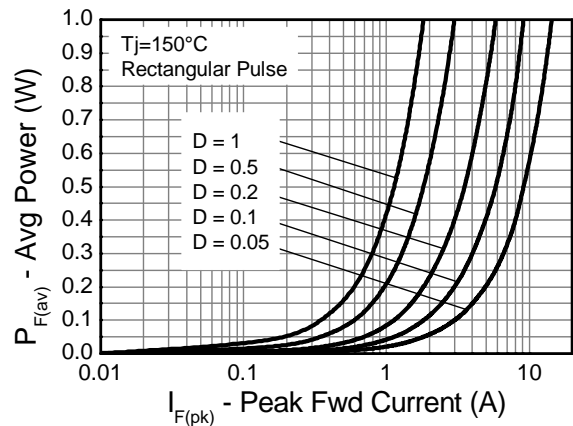
**Typical Forward Characteristics**



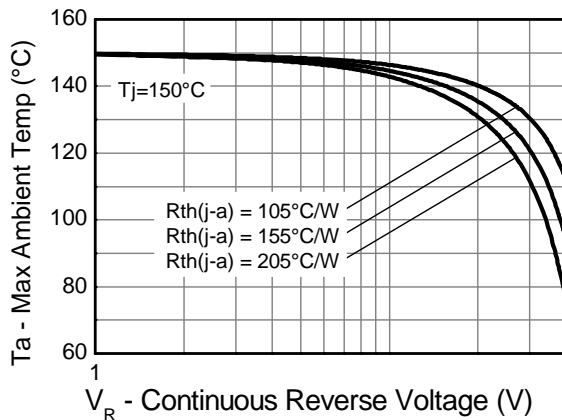
**Typical Reverse Characteristics**



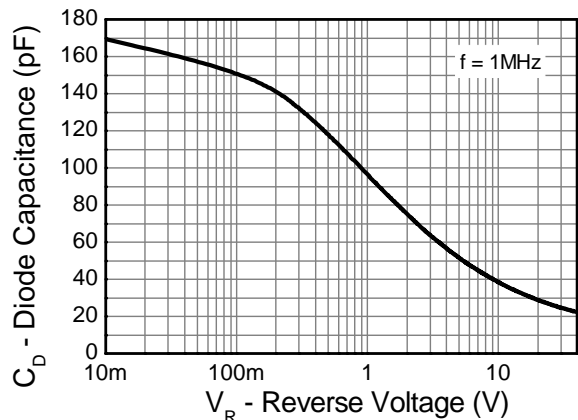
**Typical Forward Safe Operating Area**



**Forward Power vs Peak Current**

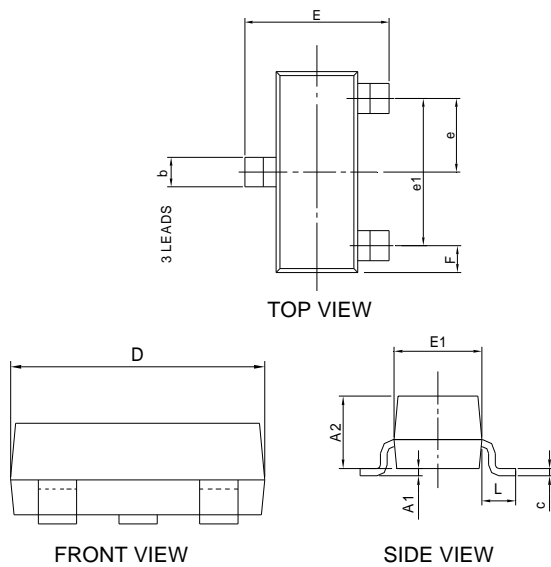


**Typical Reverse Safe Operating Area**



**Capacitance vs Reverse Voltage**

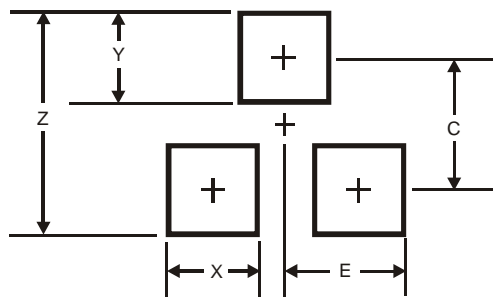
**Package Outline Dimensions**



SOT-23			
Dim	Min	Max	Typ
A1	0.013	0.100	0.05
A2	0.903	1.100	1.00
b	0.37	0.51	0.40
c	0.85	0.180	0.110
D	2.80	3.00	2.90
E	2.30	2.50	2.40
E1	1.20	1.40	1.30
e	0.89	1.03	0.915
e1	1.78	2.05	1.83
F	0.45	0.60	0.535
L	0.45	0.60	0.535

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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