


**ZLLS2000**
**40V HIGH CURRENT LOW LEAKAGE SCHOTTKY DIODE**
**Features**

- Low equivalent on resistance
- Extremely low leakage (typically 40 $\mu$ A @30V)
- High current capability ( $I_F = 2.2$  A)
- Low  $V_F$ , fast switching Schottky
- ZLLS2000 complements low temperature equivalent ZHCS2000
- 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**

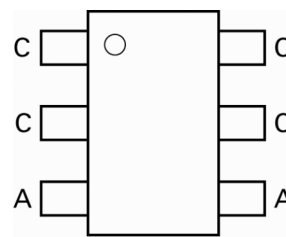
**Mechanical Data**

- Case: SOT23-6
- Case material: molded Plastic. “Green” molding Compound.
- UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish
- Weight: 0.008 grams (Approximate)

**Applications**

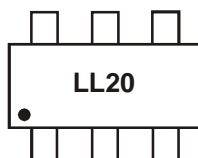
- DC – DC converters
- Strokes
- Mobile phones
- Charging circuits
- Motor control


**SOT23-6**

**Device symbol**

**Top View  
Pin Out**
**Ordering Information**

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
ZLLS2000TA	LL20	7	8mm	3000 units
ZLLS2000TC	LL20	13	8mm	10000 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**


LL20 = Product Type Marking Code

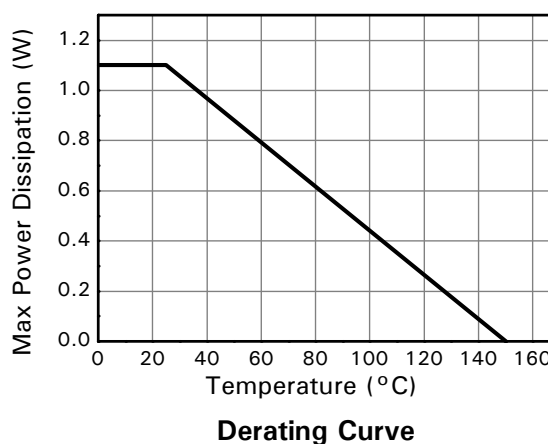
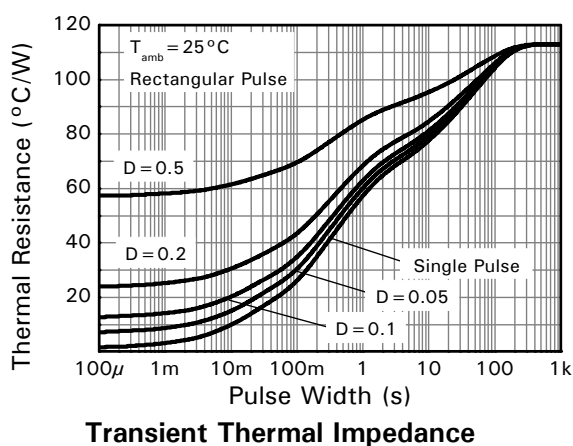
**Maximum Ratings** @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Continuous Reverse Voltage	V <sub>R</sub>	40	V
Forward Current	I <sub>F</sub>	2.2	A
Peak Repetitive Forward Current Rectangular Pulse Duty Cycle	I <sub>FPK</sub>	3.55	A
Non Repetitive Forward Current	I <sub>FSM</sub>	36	A
t ≤ 100μs		12	A
t ≤ 10ms			A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation @T <sub>A</sub> = 25°C	P <sub>D</sub>	1.1	W
Single Die Continuous		1.71	W
Single Die Measured at t < 5 secs			W
Junction to Ambient (Note 3)	R <sub>θJA</sub>	113	°C/W
Junction to Ambient (Note 4)	R <sub>θJA</sub>	73	°C/W
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C
Junction Temperature	T <sub>J</sub>	150	°C

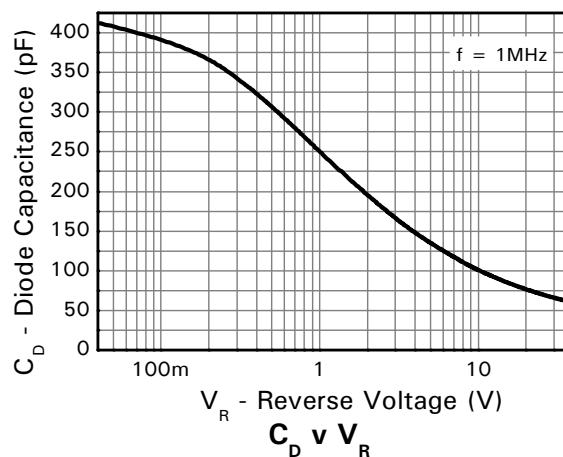
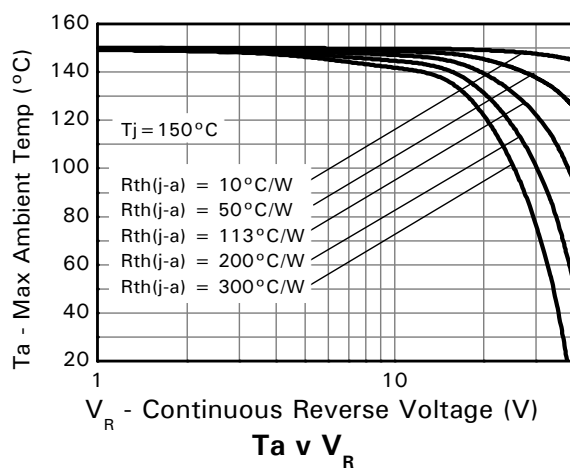
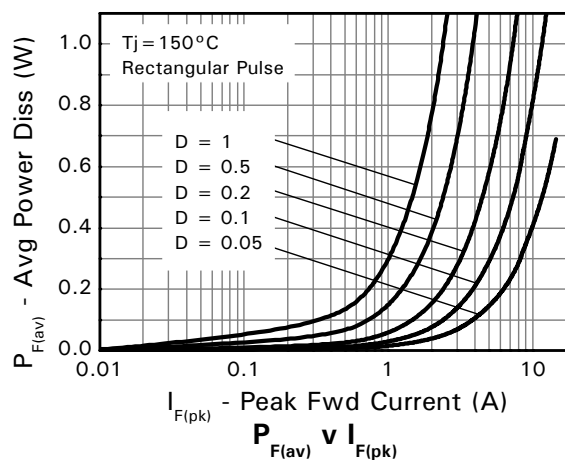
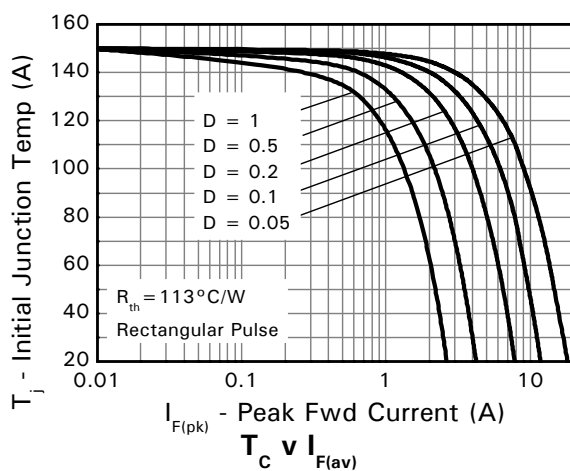
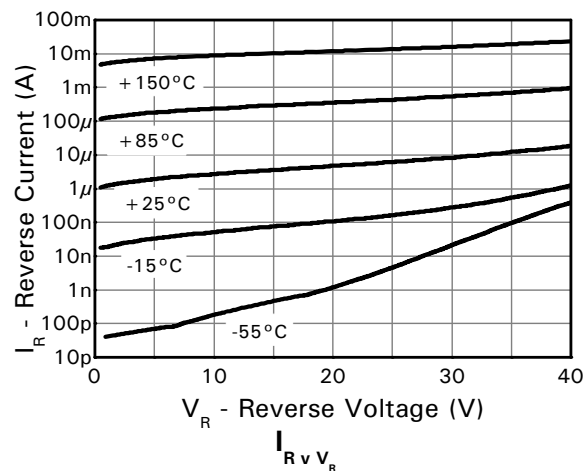
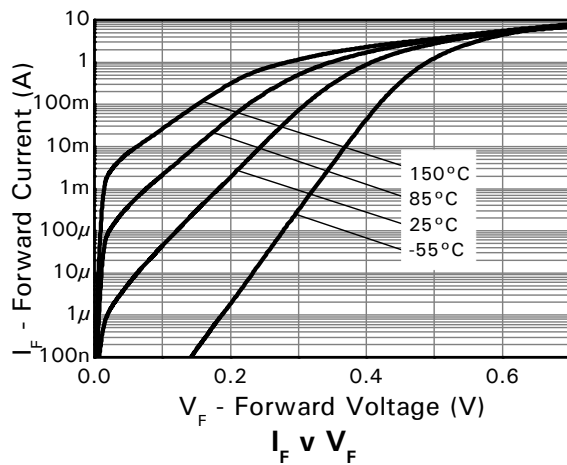
Notes: 3. For a device surface mounted on 25mm x 25mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.  
 4. For a device mounted on FRB PCB measured at t < 5secs.



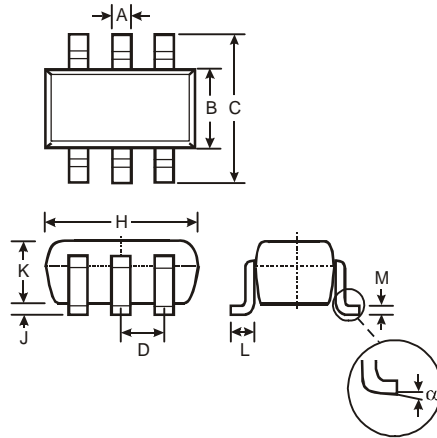
**Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage	V <sub>(BR)R</sub>	40	-	-	V	I <sub>R</sub> = 1mA
Forward Voltage (Note 5)	V <sub>F</sub>	-	285	-	mV	I <sub>F</sub> = 50mA
		-	305	-		I <sub>F</sub> = 100mA
		-	335	-		I <sub>F</sub> = 250mA
		-	365	390		I <sub>F</sub> = 500mA
		-	403	430		I <sub>F</sub> = 1A
		-	433	490		I <sub>F</sub> = 1.5A
		-	461	540		I <sub>F</sub> = 2A
		-	509	600		I <sub>F</sub> = 3A
		-	450	-		I <sub>F</sub> = 2A, T <sub>A</sub> = 100°C
Reverse Current	I <sub>R</sub>	-	10	40	μA	V <sub>R</sub> = 30V
		-	0.6	-	mA	V <sub>R</sub> = 30V, T <sub>A</sub> = 85°C
Diode Capacitance	C <sub>D</sub>	-	65	-	pF	f = 1MHz, V <sub>R</sub> = 30V
Reverse Recovery Time	t <sub>rr</sub>	-	6	-	ns	Switched from I <sub>F</sub> = 500mA to V <sub>R</sub> = 5.5V
Reverse Recovery Charge	Q <sub>rr</sub>	-	685	-	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%

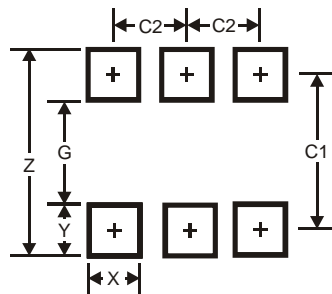


## Package Outline Dimensions



SOT-26			
Dim	Min	Max	Typ
A	0.35	0.50	0.38
B	1.50	1.70	1.60
C	2.70	3.00	2.80
D	—	—	0.95
H	2.90	3.10	3.00
J	0.013	0.10	0.05
K	1.00	1.30	1.10
L	0.35	0.55	0.40
M	0.10	0.20	0.15
$\alpha$	0°	8°	—
All Dimensions in mm			

## Suggested Pad Layout



Dimensions	Value (in mm)
Z	3.20
G	1.60
X	0.55
Y	0.80
C1	2.40
C2	0.95

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