

## 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

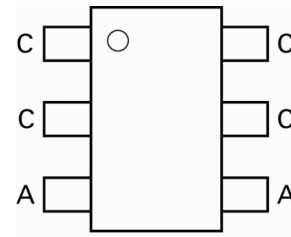
- DC – DC converters
- Strokes
- Mobile phones
- Charging circuits
- Motor control



SOT23-6



Device symbol



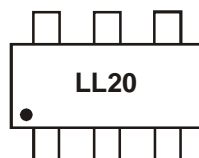
Top View  
Pin Out

## 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** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

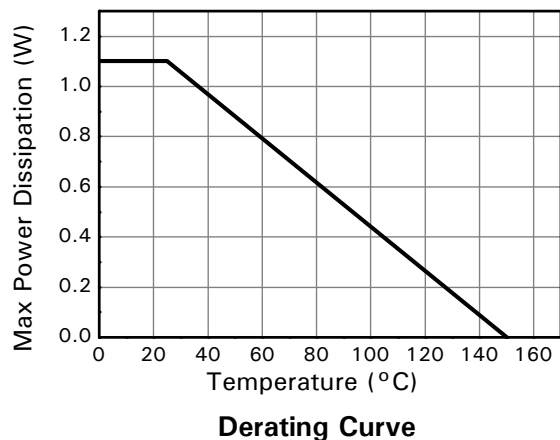
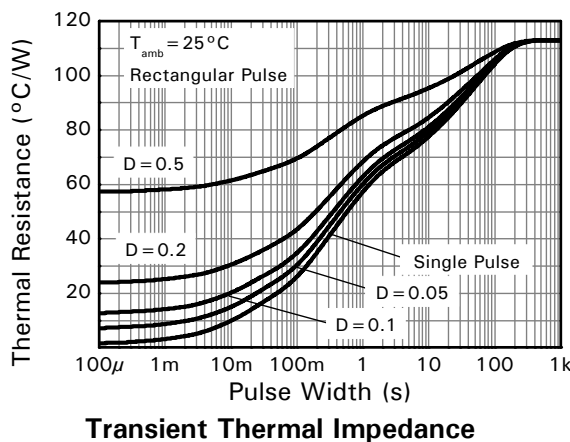
Characteristic	Symbol	Value	Unit
Continuous Reverse Voltage	$V_R$	40	V
Forward Current	$I_F$	2.2	A
Peak Repetitive Forward Current Rectangular Pulse Duty Cycle	$I_{FPK}$	3.55	A
Non Repetitive Forward Current	$I_{FSM}$	36	A
		12	A

$t \leq 100\mu\text{s}$   
 $t \leq 10\text{ms}$

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation @ $T_A = 25^\circ\text{C}$ Single Die Continuous	$P_D$	1.1	W
Single Die Measured at $t < 5$ secs		1.71	W
Junction to Ambient (Note 3)	$R_{\theta JA}$	113	$^\circ\text{C/W}$
Junction to Ambient (Note 4)	$R_{\theta JA}$	73	$^\circ\text{C/W}$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^\circ\text{C}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$

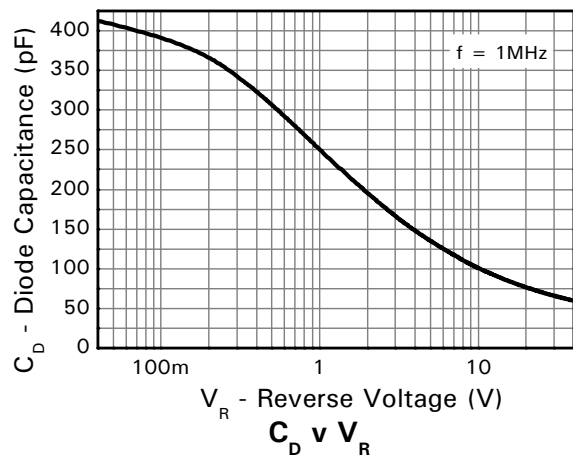
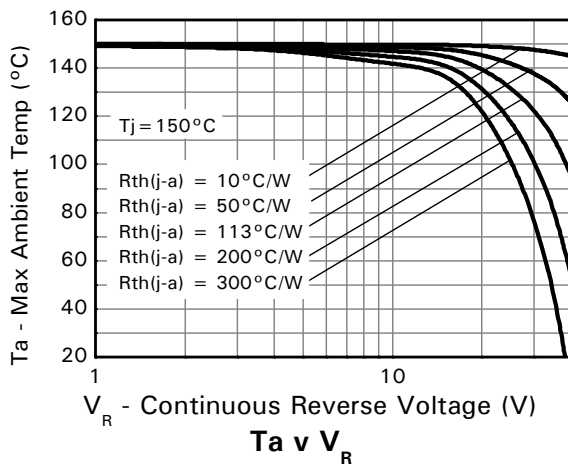
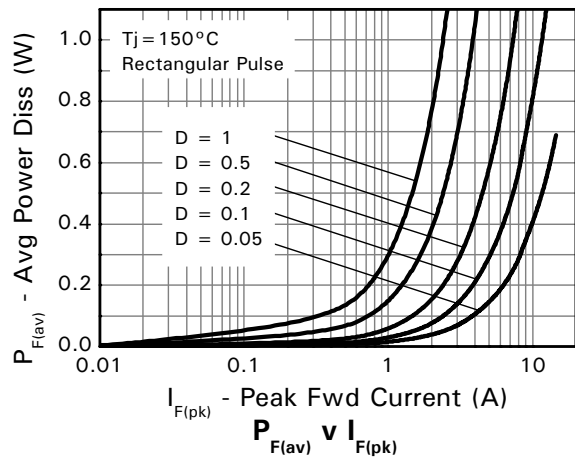
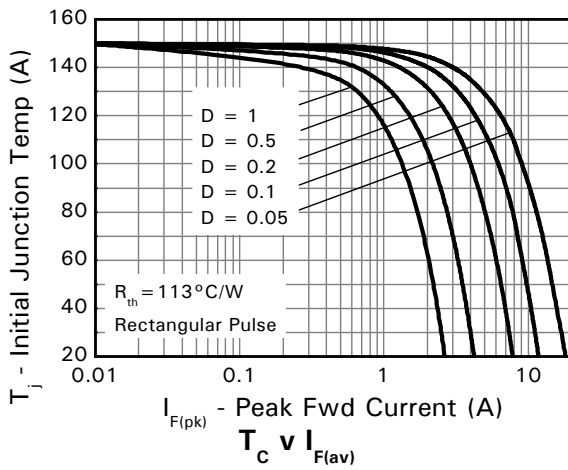
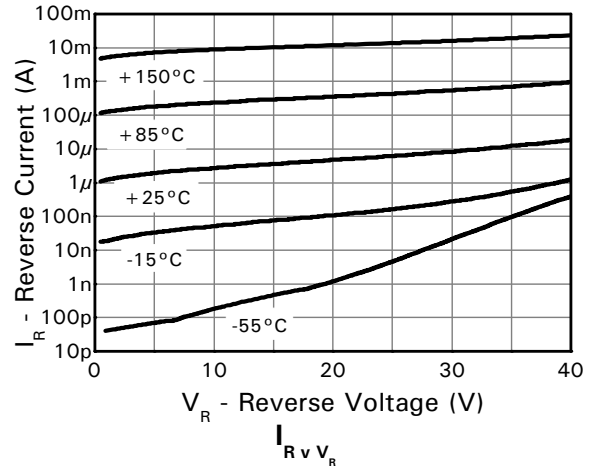
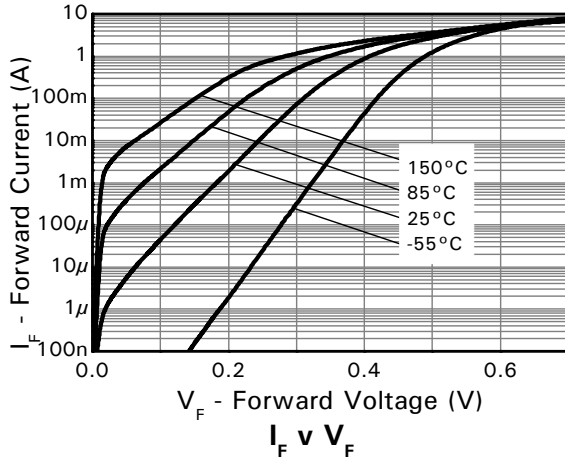
Notes: 3. For a device surface mounted on 25mm x 25mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.  
4. For a device mounted on FRB PCB measured at  $t < 5$ secs.



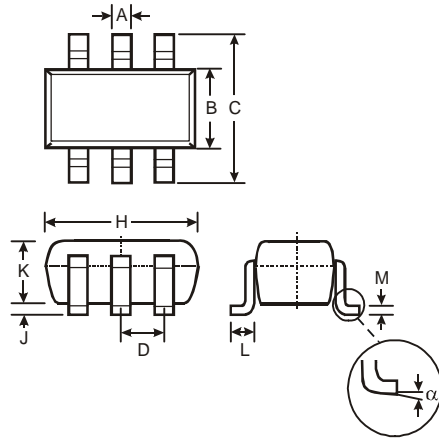
**Electrical Characteristics** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage	$V_{(BR)R}$	40	-	-	V	$I_R = 1\text{mA}$
Forward Voltage (Note 5)	$V_F$	-	285	-	mV	$I_F = 50\text{mA}$
		-	305	-		$I_F = 100\text{mA}$
		-	335	-		$I_F = 250\text{mA}$
		-	365	390		$I_F = 500\text{mA}$
		-	403	430		$I_F = 1\text{A}$
		-	433	490		$I_F = 1.5\text{A}$
		-	461	540		$I_F = 2\text{A}$
		-	509	600		$I_F = 3\text{A}$
		-	450	-		$I_F = 2\text{A}, T_A = 100^\circ\text{C}$
Reverse Current	$I_R$	-	10	40	$\mu\text{A}$ mA	$V_R = 30\text{V}$ $V_R = 30\text{V}, T_A = 85^\circ\text{C}$
Diode Capacitance	$C_D$	-	65	-	pF	$f = 1\text{MHz}, V_R = 30\text{V}$
Reverse Recovery Time	$t_{rr}$	-	6	-	ns	Switched from $I_F = 500\text{mA}$ to $V_R = 5.5\text{V}$
Reverse Recovery Charge	$Q_{rr}$	-	685	-	nC	Measured @ $I_R = 50\text{mA}$ . $di/dt = 500\text{mA}/\text{ns}$ . $R_{source} = 6\Omega; R_{load} = 10\Omega$

Notes: 5. Measured under pulsed conditions. Pulse width = 300 $\mu\text{s}$ . Duty cycle < 2%

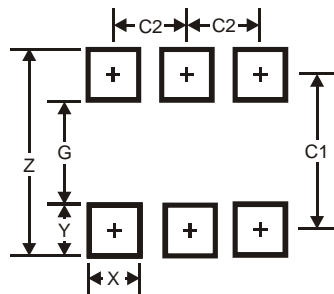


**Package Outline Dimensions**



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
α	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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