

Features

- Low equivalent on resistance
- Extremely low leakage (typically 40µA @30V)
- High current capability ($I_F = 2.2\text{ A}$)
- 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

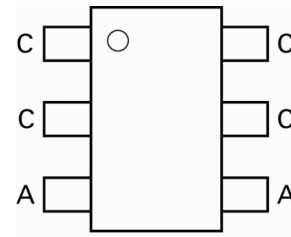
- DC – DC converters
- Strokes
- Mobile phones
- Charging circuits
- Motor control



SOT23-6



Device symbol



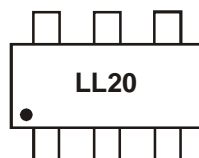
Top View
Pin Out

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

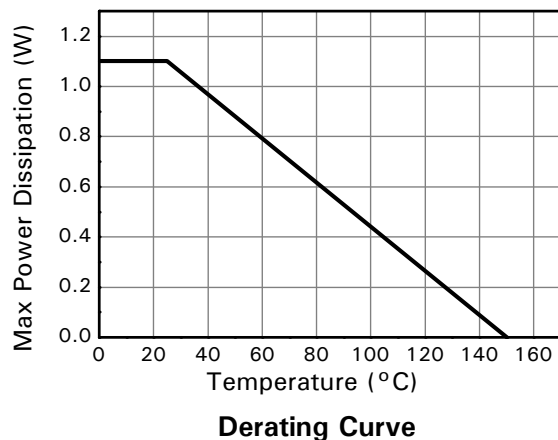
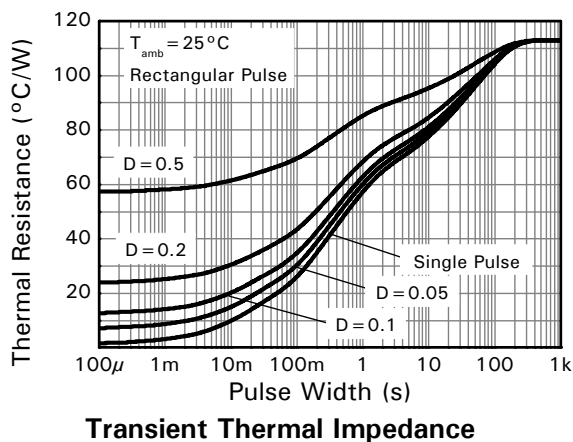
Characteristic	Symbol	Value	Unit
Continuous Reverse Voltage	V_R	40	V
Forward Current	I_F	2.2	A
Peak Repetitive Forward Current Rectangular Pulse Duty Cycle	I_{FPK}	3.55	A
Non Repetitive Forward Current	I_{FSM}	36	A
		12	A

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

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	$^\circ\text{C}$

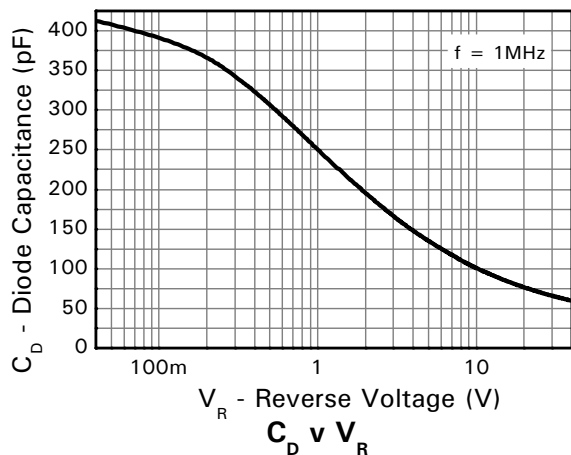
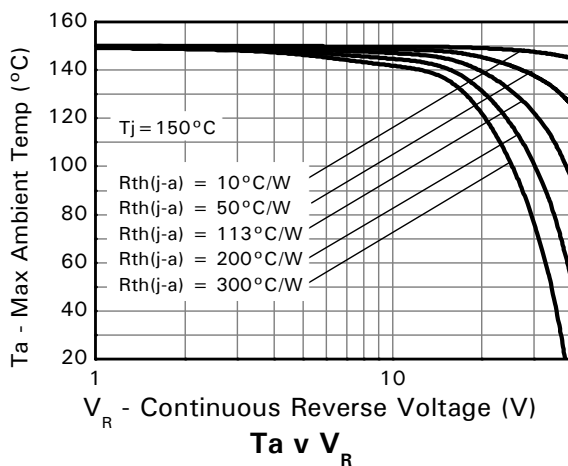
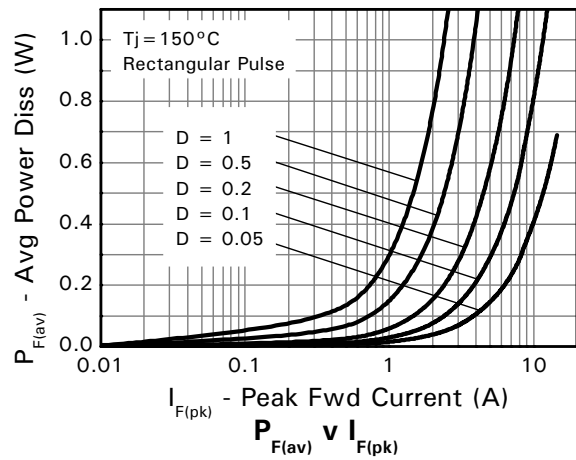
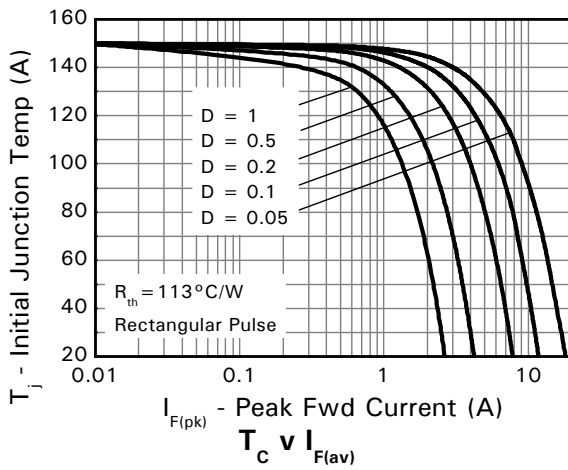
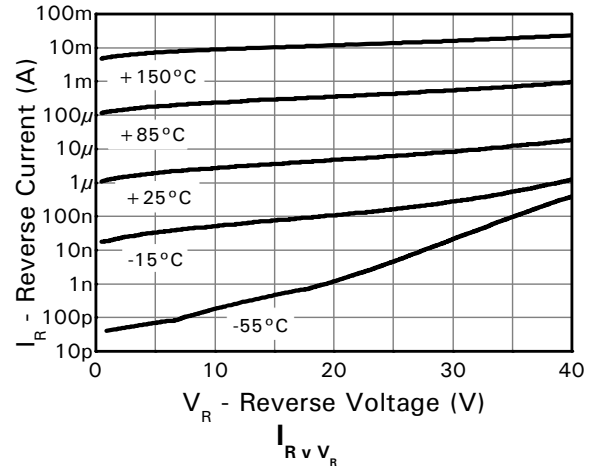
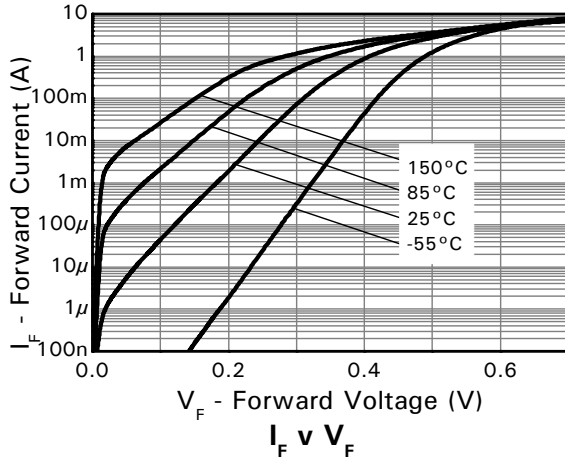
Notes: 3. For a device surface mounted on 25mm x 25mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.
4. For a device mounted on FRB PCB measured at $t < 5$ secs.



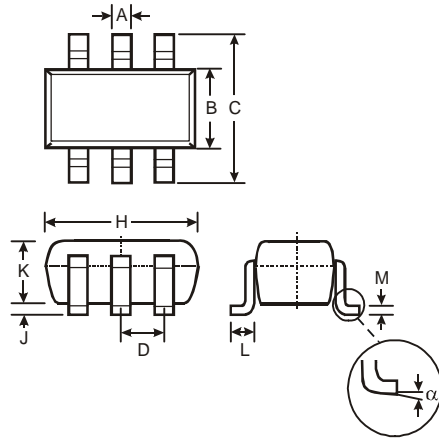
Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

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	μA	$V_R = 30\text{V}$
		-	0.6	-	mA	$V_R = 30\text{V}, T_A = 85^\circ\text{C}$
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 μs . Duty cycle < 2%

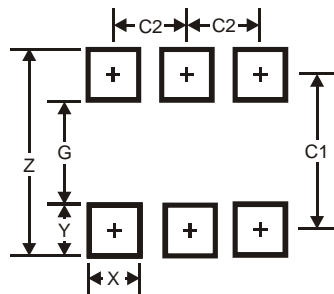


Package Outline Dimensions



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

IMPORTANT NOTICE

DIODES INCORPORATED MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. Diodes Incorporated does not assume any liability arising out of the application or use of this document or any product described herein; neither does Diodes Incorporated convey any license under its patent or trademark rights, nor the rights of others. Any Customer or user of this document or products described herein in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on Diodes Incorporated website, harmless against all damages.

Diodes Incorporated does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel. Should Customers purchase or use Diodes Incorporated products for any unintended or unauthorized application, Customers shall indemnify and hold Diodes Incorporated and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.

Products described herein may be covered by one or more United States, international or foreign patents pending. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks.

LIFE SUPPORT

Diodes Incorporated products are specifically not authorized for use as critical components in life support devices or systems without the express written approval of the Chief Executive Officer of Diodes Incorporated. As used herein:

A. Life support devices or systems are devices or systems which:

1. are intended to implant into the body, or
2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.

Customers represent that they have all necessary expertise in the safety and regulatory ramifications of their life support devices or systems, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of Diodes Incorporated products in such safety-critical, life support devices or systems, notwithstanding any devices- or systems-related information or support that may be provided by Diodes Incorporated. Further, Customers must fully indemnify Diodes Incorporated and its representatives against any damages arising out of the use of Diodes Incorporated products in such safety-critical, life support devices or systems.

Copyright © 2010, Diodes Incorporated

www.diodes.com