



ZLLS2000

40V HIGH CURRENT LOW LEAKAGE SCHOTTKY DIODE

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

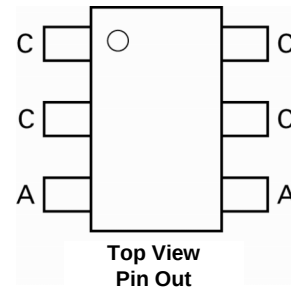
- DC – DC converters
- Strokes
- Mobile phones
- Charging circuits
- Motor control



SOT23-6



Device symbol



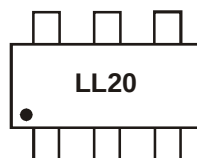
Top View
Pin Out

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

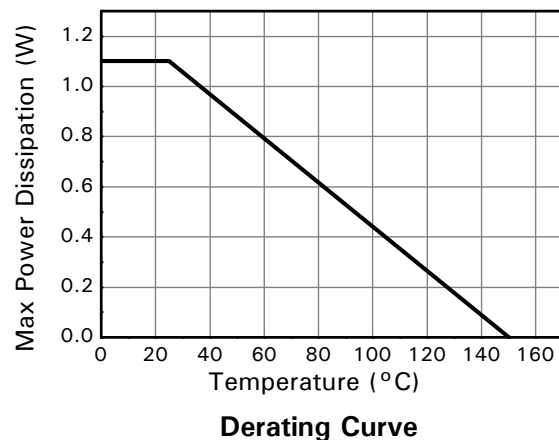
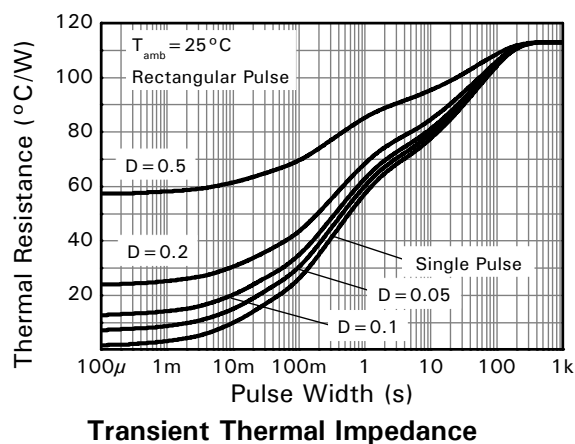
Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

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
$t \leq 100\mu\text{s}$		12	A
$t \leq 10\text{ms}$			A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation @ $T_A = 25^\circ\text{C}$	P_D	1.1	W
Single Die Continuous		1.71	W
Single Die Measured at $t < 5$ secs			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	$^\circ\text{C}$

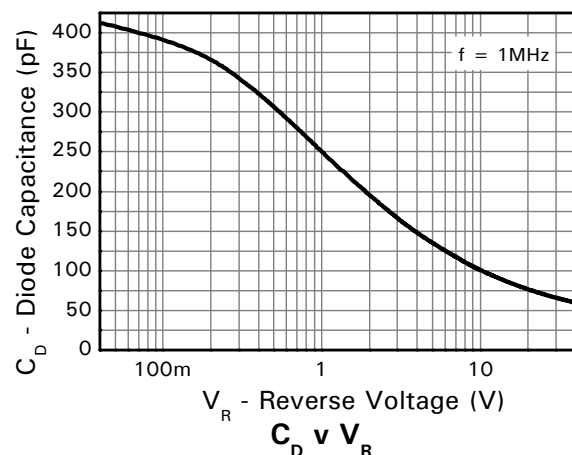
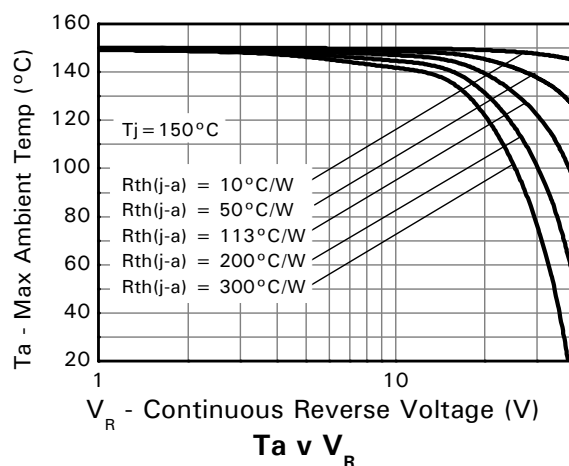
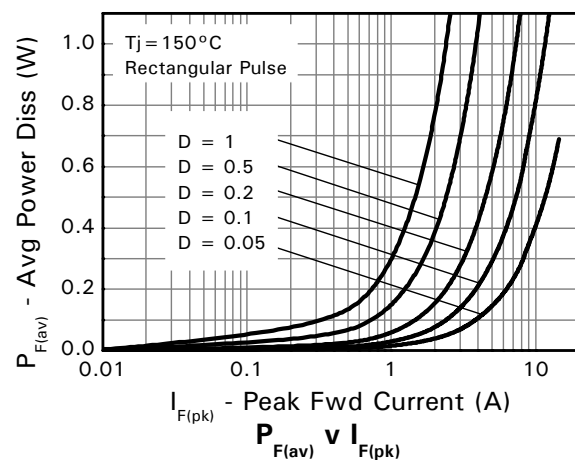
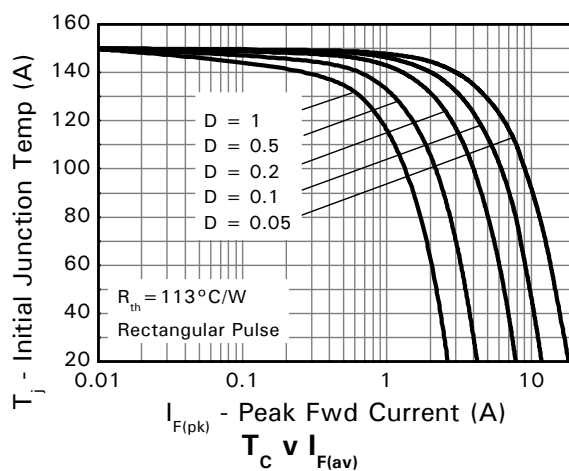
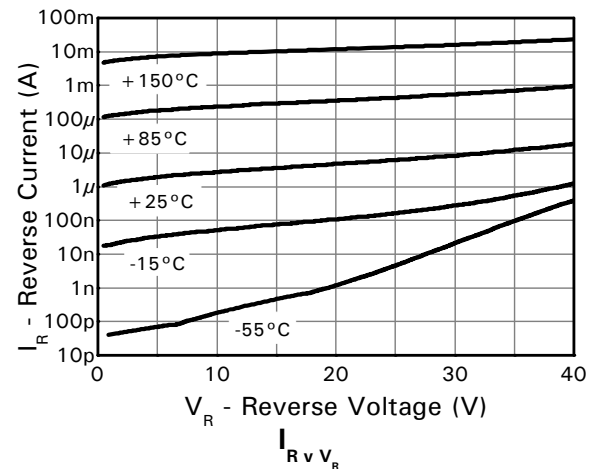
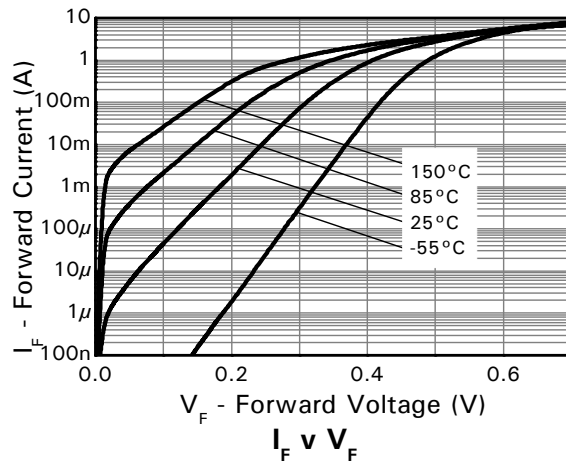
Notes: 3. For a device surface mounted on 25mm x 25mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.
 4. For a device mounted on FRB PCB measured at $t < 5$ secs.



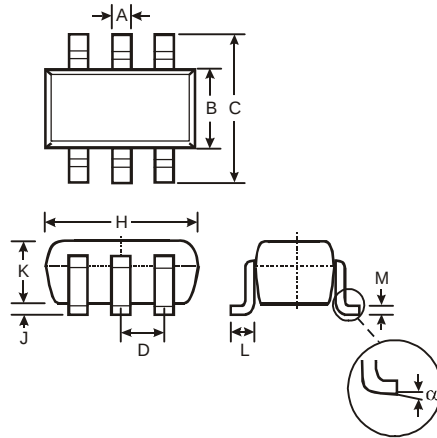
Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage	V _{(BR)R}	40	-	-	V	I _R = 1mA
Forward Voltage (Note 5)	V _F	-	285	-	mV	I _F = 50mA
		-	305	-		I _F = 100mA
		-	335	-		I _F = 250mA
		-	365	390		I _F = 500mA
		-	403	430		I _F = 1A
		-	433	490		I _F = 1.5A
		-	461	540		I _F = 2A
		-	509	600		I _F = 3A
		-	450	-		I _F = 2A, T _A = 100°C
Reverse Current	I _R	-	10	40	μA	V _R = 30V
		-	0.6	-	mA	V _R = 30V, T _A = 85°C
Diode Capacitance	C _D	-	65	-	pF	f = 1MHz, V _R = 30V
Reverse Recovery Time	t _{rr}	-	6	-	ns	Switched from I _F = 500mA to V _R = 5.5V
Reverse Recovery Charge	Q _{rr}	-	685	-	nC	Measured @ I _R 50mA. di/dt = 500mA/ ns. R _{source} = 6Ω; R _{load} = 10Ω

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

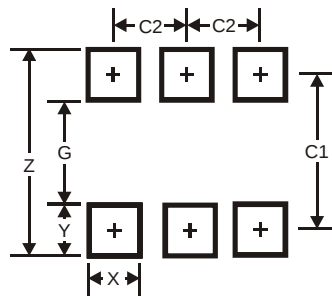


Package Outline Dimensions



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
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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