Lead-free Green

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 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

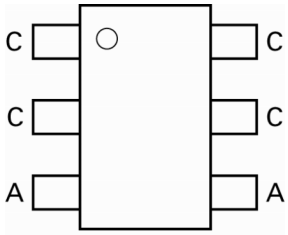
- Case: SOT23-6
- Case material: molded Plastic. "Green" molding Compound.
- UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish
- Weight: 0.008 grams (Approximate)

Applications

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

SOT23-6

Device symbol



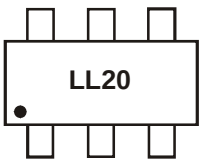
Top View
Pin Out

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

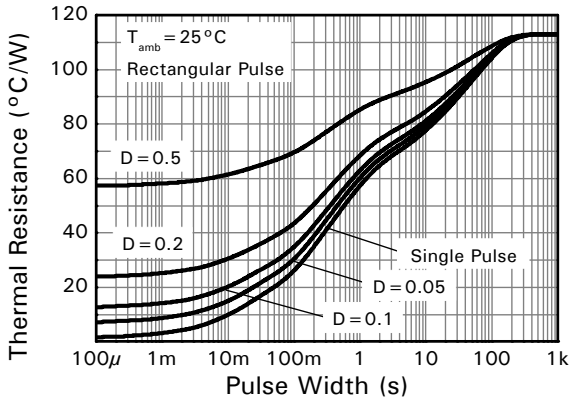
Maximum Ratings @T_A = 25°C unless otherwise specified

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	t ≤ 100µs t ≤ 10ms	I_{FSM}	36 12	A A

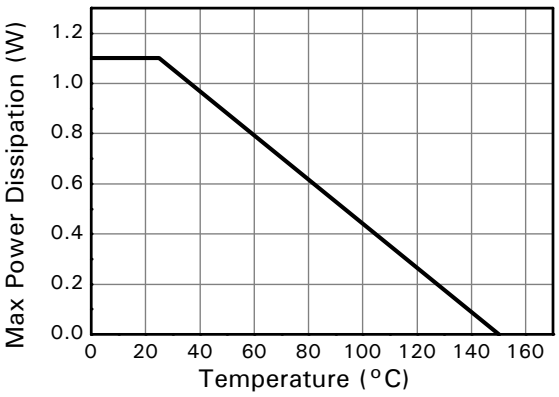
Thermal Characteristics

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



Transient Thermal Impedance

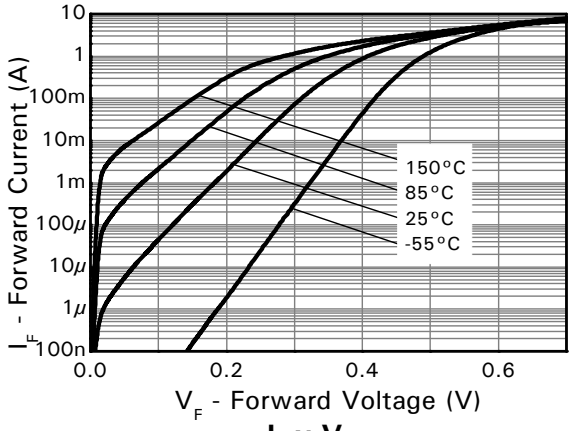


Derating Curve

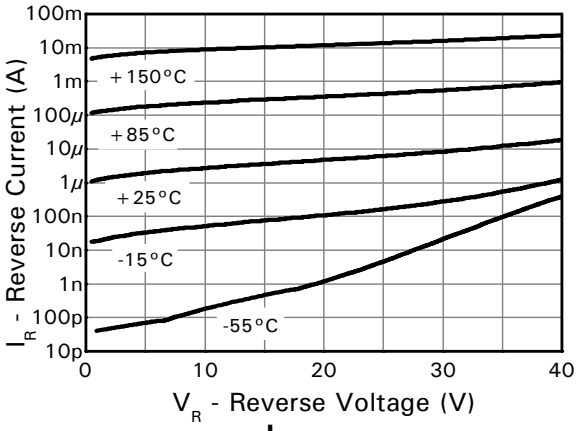
Electrical Characteristics @T_A = 25°C unless otherwise specified

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 0.6	40 -	µA mA	V_R = 30V V_R = 30V, T_A = 85°C
Diode Capacitance	C_D	-	65	-	pF	f = 1MHz, V_R = 30V
Reverse Recovery Time Reverse Recovery Charge	t_{rr} Q_{rr}	- -	6 685	- -	ns nC	Switched from I_F = 500mA to V_R = 5.5V Measured @ I_R 50mA. di /dt = 500mA/ ns. R_{source} = 6Ω; R_{load} = 10Ω

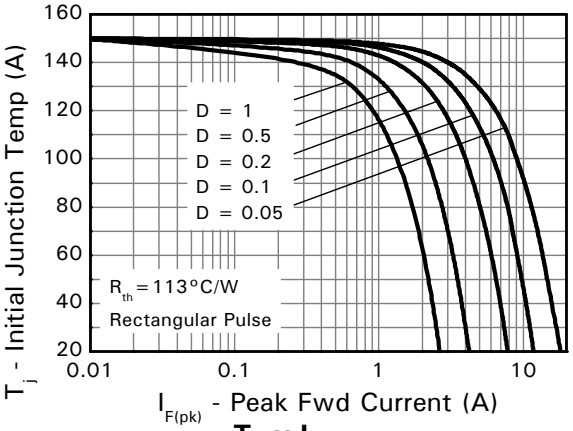
Notes: 5. Measured under pulsed conditions. Pulse width = 300µs. Duty cycle < 2%



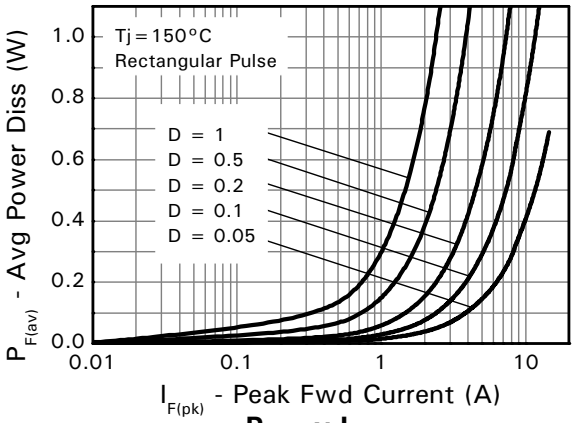
I_F v V_F



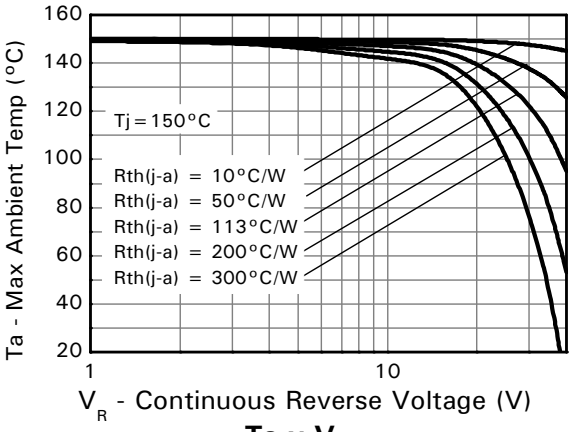
$I_{R\ v\ V_R}$



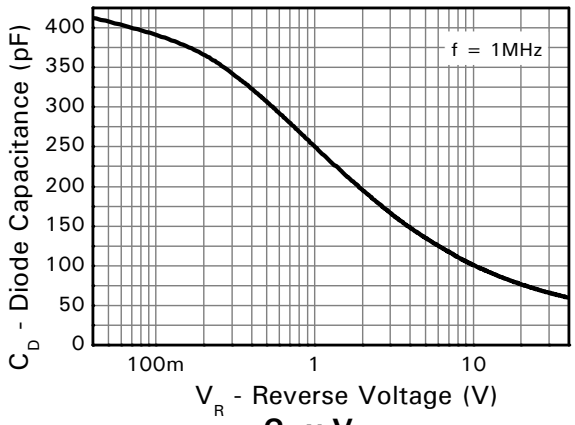
T_C v $I_{F(av)}$



$P_{F(av)}$ v $I_{F(pk)}$

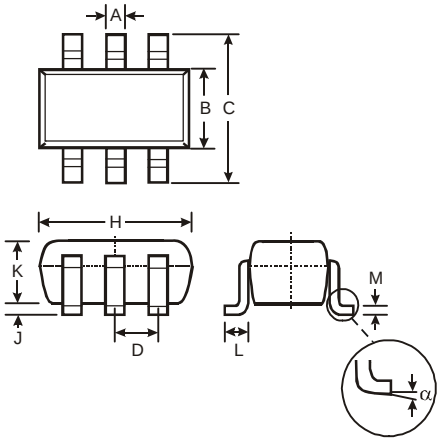


Ta v V_R



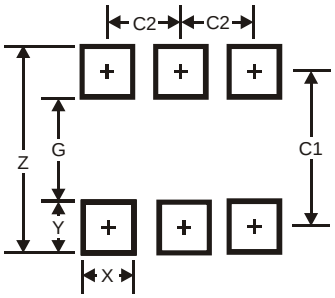
C_D v V_R

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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