



**THE DATASHEET OF  
ZLLS2000TA**



**40V HIGH CURRENT LOW LEAKAGE SCHOTTKY DIODE**
**Product Summary**

$V_{RRM}$ (V)	$I_o$ (A)	$V_F$ Max (V) @ +25°C	$I_R$ Max (μA) @ 30V +25°C
40	2	0.54	40

**Features and Benefits**

- Low Equivalent on Resistance
- Extremely Low Leakage
- Low  $V_F$ , Fast Switching Schottky
- Package Thermally Rated to +150°C
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

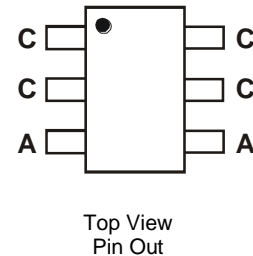
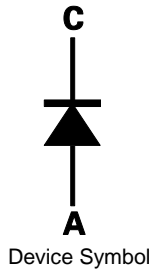
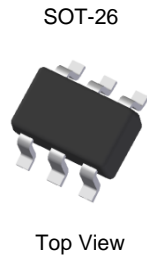
**Description and Applications**

A surface mount Schottky Barrier Diode featuring low forward voltage drop suitable for high frequency rectification and reverse voltage protection.

- DC – DC Converters
- Strobes
- Mobile Phones
- Charging Circuits
- Motor Control

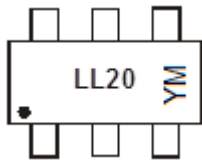
**Mechanical Data**

- Case: SOT26
- Case Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Copper Leadframe; (Lead-Free Plating) Solderable per MIL-STD-202, Method 208
- Weight: 0.016 grams (Approximate)

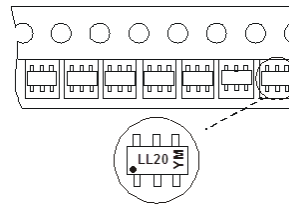

**Ordering Information**

Device	Packaging	Shipping
ZLLS2000TA	SOT26	3,000/Tape & Reel
ZLLS2000TC	SOT26	10,000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For Packaging Details, go to our website at <http://www.diodes.com/products/packages.html>.

**Marking Information**


LL20 = Product Type Marking Code  
 YM = Date Code Marking  
 Y or  $\bar{Y}$  = Year (ex: D = 2016)  
 M or  $\bar{M}$  = Month (ex: 9 = September)


**Date Code Key**

Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	
Code	D	E	F	G	H	I	J	K	L	M	N	
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

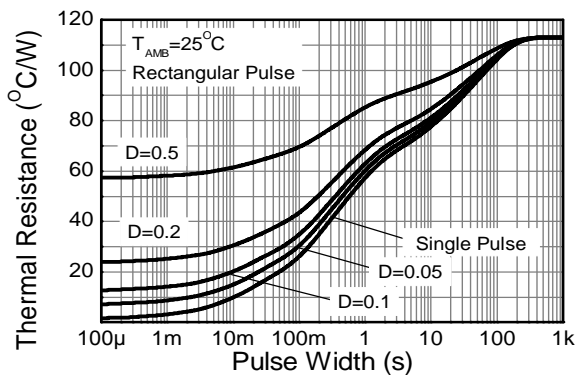
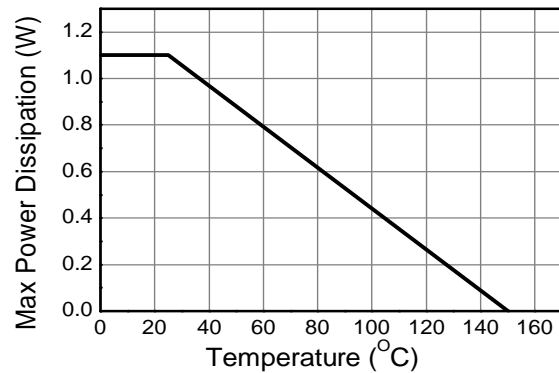
**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Continuous Reverse Voltage	V <sub>RRM</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>	t ≤ 100μs	36
		t ≤ 10ms	12

**Thermal Characteristics**

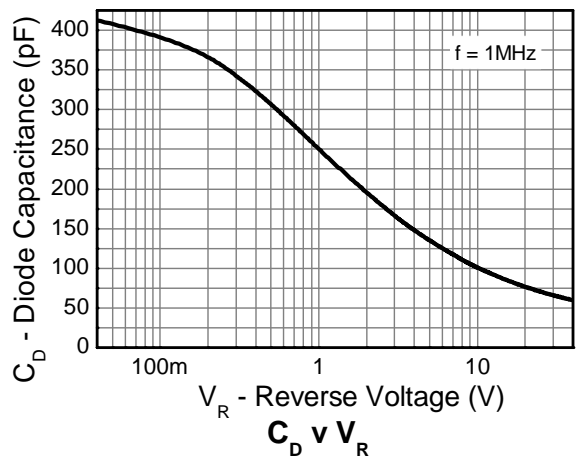
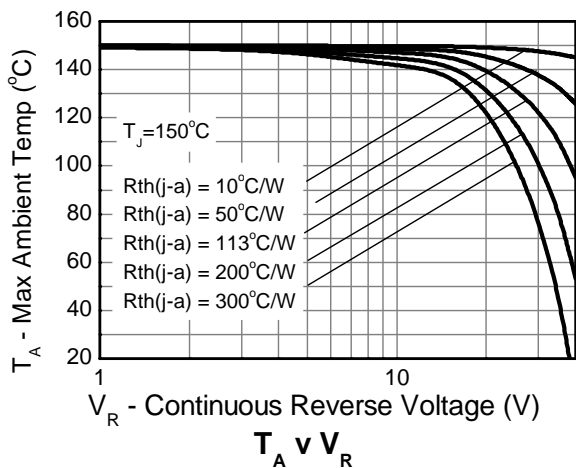
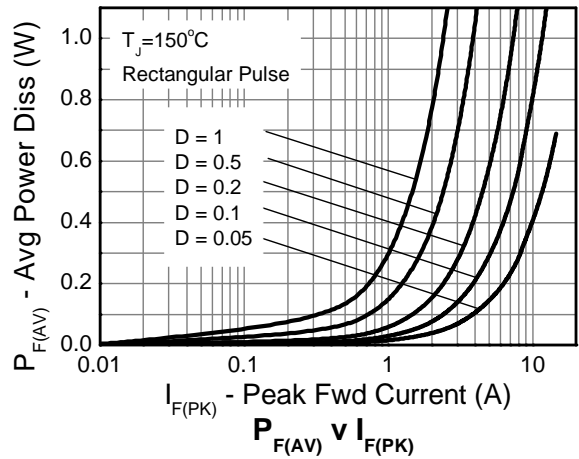
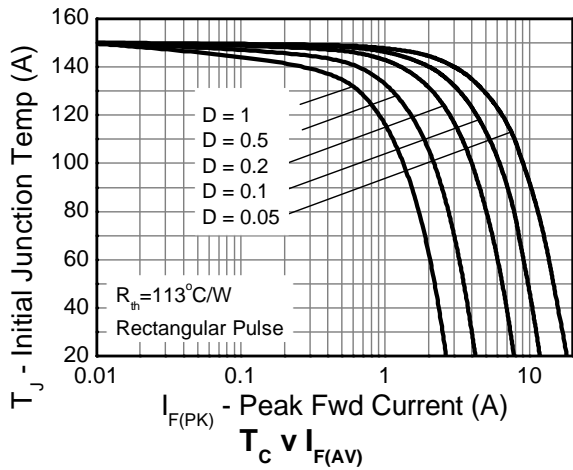
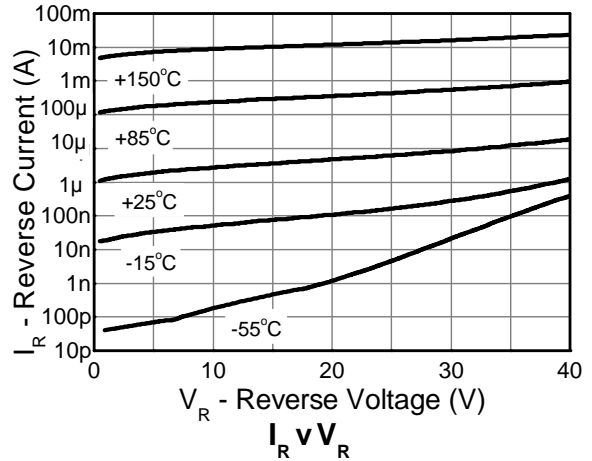
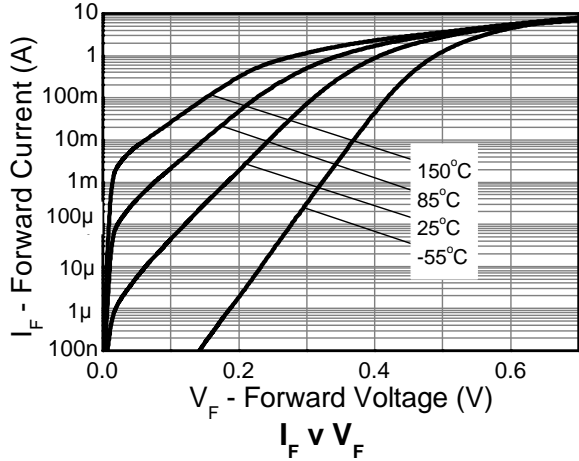
Characteristic	Symbol	Value	Unit
Power Dissipation @T <sub>A</sub> = +25°C		-	-
Single Die Continuous	P <sub>D</sub>	1.1	W
Single Die Measured at t < 5 secs		1.71	W
Junction to Ambient (Note 5)	R <sub>θJA</sub>	113	°C/W
Junction to Ambient (Note 6)	R <sub>θJA</sub>	73	°C/W
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C
Junction Temperature	T <sub>J</sub>	+150	°C

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


**Transient Thermal Impedance**

**Derating Curve**
**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 7)	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
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

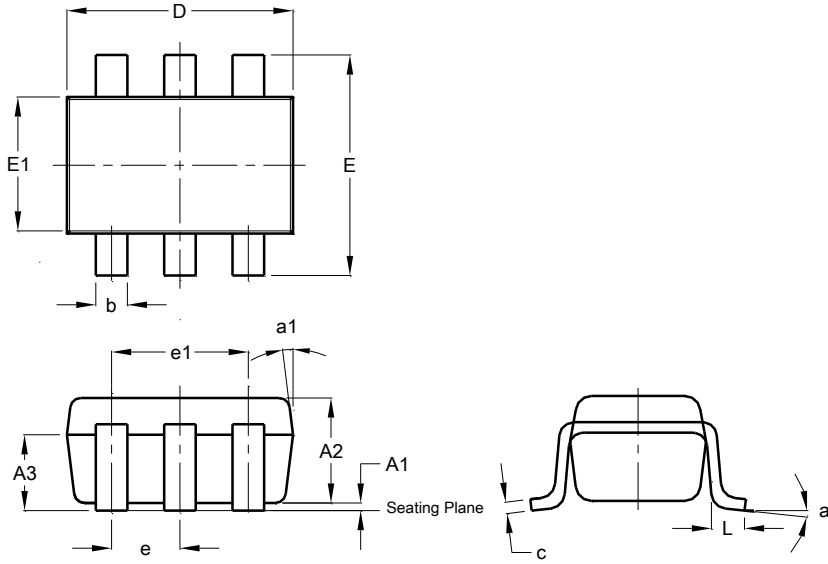
Note: 7. Measured under pulsed conditions. Pulse width = 300μs. Duty cycle < 2%.



**Package Outline Dimensions**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**SOT26**

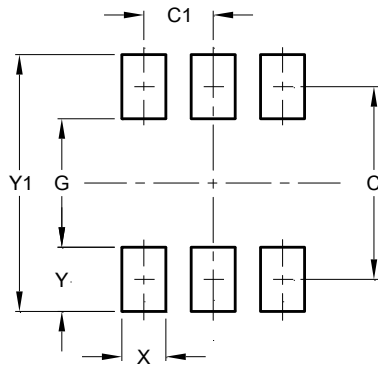


SOT26			
Dim	Min	Max	Typ
A1	0.013	0.10	0.05
A2	1.00	1.30	1.10
A3	0.70	0.80	0.75
b	0.35	0.50	0.38
c	0.10	0.20	0.15
D	2.90	3.10	3.00
e	-	-	0.95
e1	-	-	1.90
E	2.70	3.00	2.80
E1	1.50	1.70	1.60
L	0.35	0.55	0.40
a	-	-	8°
a1	-	-	7°
All Dimensions in mm			

**Suggested Pad Layout**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**SOT26**



Dimensions	Value (in mm)
C	2.40
C1	0.95
G	1.60
X	0.55
Y	0.80
Y1	3.20

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