

## Product Summary

<b>V<sub>RRM</sub> (V)</b>	<b>I<sub>o</sub>(A)</b>	<b>V<sub>F</sub> Max (V) @ +25°C</b>	<b>I<sub>R</sub> Max (μA) @ 30V +25°C</b>
40	2	0.54	40

## Features and Benefits

- Low Equivalent on Resistance
- Extremely Low Leakage
- Low V<sub>F</sub>, 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

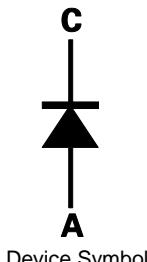
## Description and Applications

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

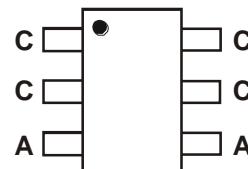
- DC – DC Converters
- Strobes
- Mobile Phones
- Charging Circuits
- Motor Control



Top View



Device Symbol



Top View  
Pin Out

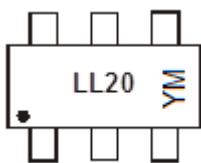
## Ordering Information

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

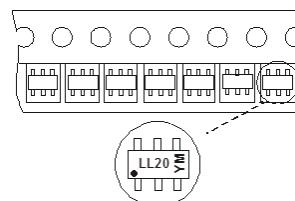
Notes:

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 YM = Year (ex: D = 2016)  
 M or 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
Code	1	2	3	4	5	6	7	8	9	O	N
Month	Dec										D

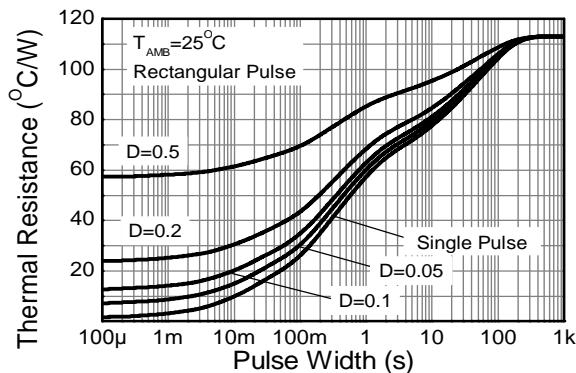
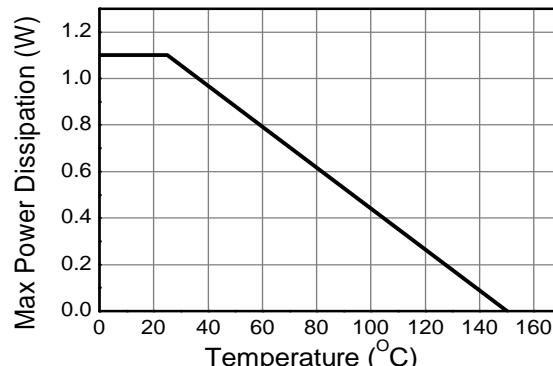
**Maximum Ratings** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

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

**Thermal Characteristics**

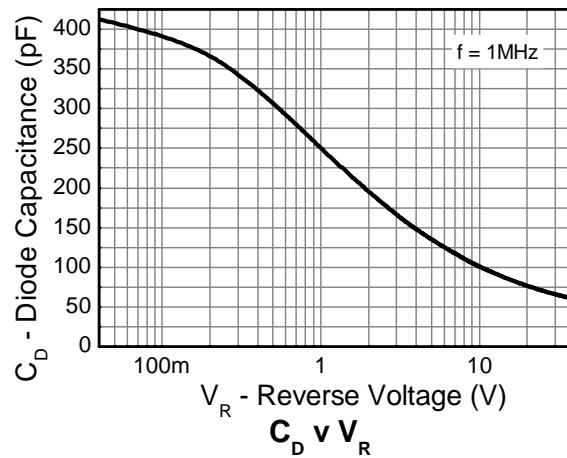
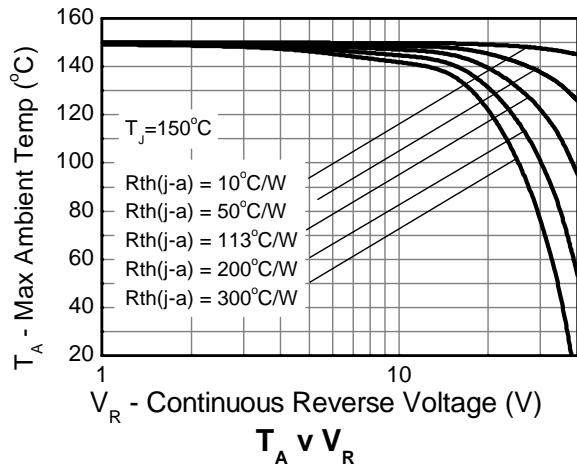
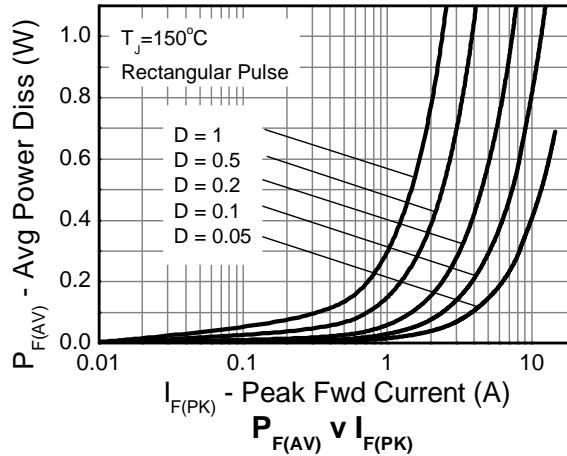
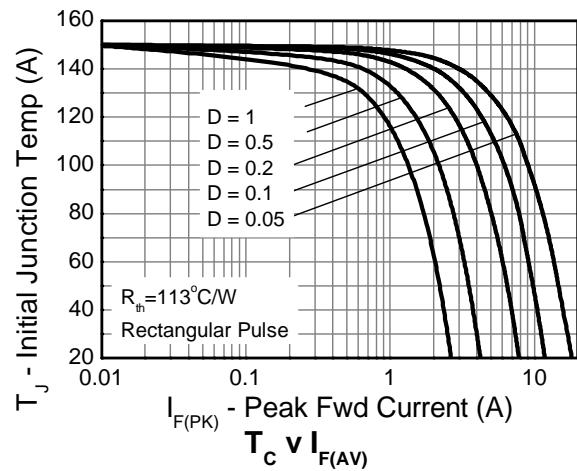
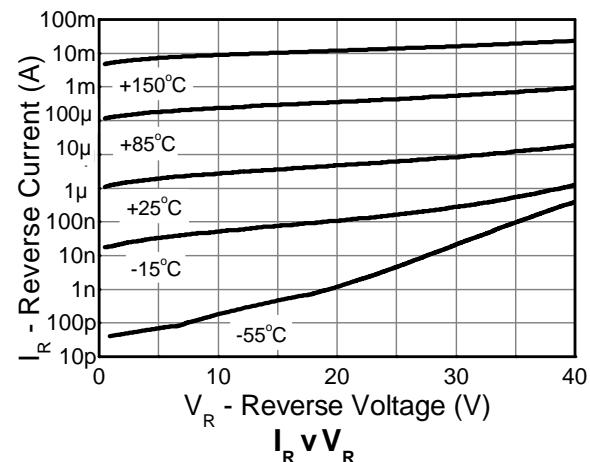
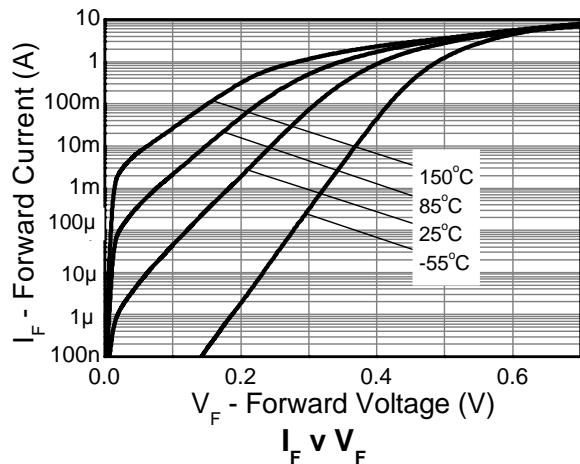
Characteristic	Symbol	Value	Unit
Power Dissipation @ $T_A = +25^\circ\text{C}$		-	-
Single Die Continuous	$P_D$	1.1	W
Single Die Measured at $t < 5$ secs		1.71	W
Junction to Ambient (Note 5)	$R_{\theta JA}$	113	°C/W
Junction to Ambient (Note 6)	$R_{\theta JA}$	73	°C/W
Storage Temperature Range	$T_{STG}$	-55 to +150	°C
Junction Temperature	$T_J$	+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  $t < 5$ secs.


**Transient Thermal Impedance**

**Derating Curve**
**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 7)	$V_F$	-	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	$\mu\text{A}$	$V_R = 30\text{V}$
		-	0.6	-	$\text{mA}$	$V_R = 30\text{V}, T_A = +85^\circ\text{C}$
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 @ $I_R = 50\text{mA}$ , $di/dt = 500\text{mA}/\text{ns}$ . $R_{\text{SOURCE}} = 6\Omega$ ; $R_{\text{LOAD}} = 10\Omega$

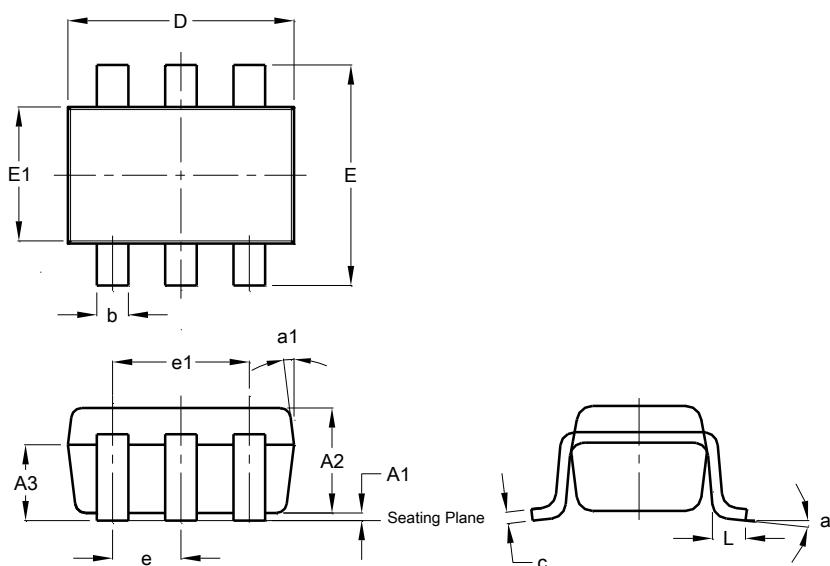
Note: 7. Measured under pulsed conditions. Pulse width = 300μs. Duty cycle < 2%.



## Package Outline Dimensions

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

**SOT26**



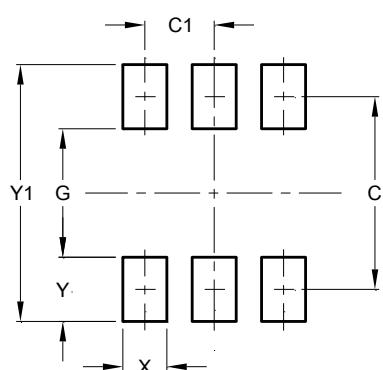
<b>SOT26</b>			
<b>Dim</b>	<b>Min</b>	<b>Max</b>	<b>Typ</b>
<b>A1</b>	0.013	0.10	0.05
<b>A2</b>	1.00	1.30	1.10
<b>A3</b>	0.70	0.80	0.75
<b>b</b>	0.35	0.50	0.38
<b>c</b>	0.10	0.20	0.15
<b>D</b>	2.90	3.10	3.00
<b>e</b>	-	-	0.95
<b>e1</b>	-	-	1.90
<b>E</b>	2.70	3.00	2.80
<b>E1</b>	1.50	1.70	1.60
<b>L</b>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

**All Dimensions in mm**

## Suggested Pad Layout

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

**SOT26**



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

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