

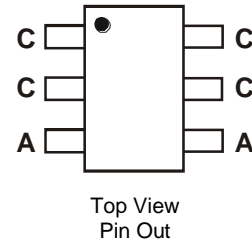
## Product Summary

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

## 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



## 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**
- **PPAP Capable (Note 4)**

## Mechanical Data

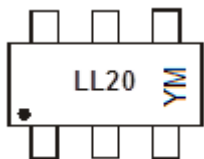
- Case: SOT26
- Case Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Copper Leadframe; (Lead-Free Plating) Solderable per MIL-STD-202, Method 208 (3)
- Weight: 0.016 grams (Approximate)

## Ordering Information (Note 5)

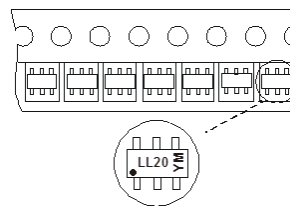
Part Number	Package	Shipping
ZLLS2000QTA	SOT26	3,000/Tape & Reel
ZLLS2000QTC	SOT26	10,000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
  2. See <https://www.diodes.com/quality/lead-free/> 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. Automotive products are AEC-Q101 qualified and are PPAP capable. Refer to <https://www.diodes.com/quality/>.
  5. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

## Marking Information



LL20 = Product Type Marking Code  
 YM = Date Code Marking  
 Y or  $\bar{Y}$  = Year (ex: G = 2019)  
 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

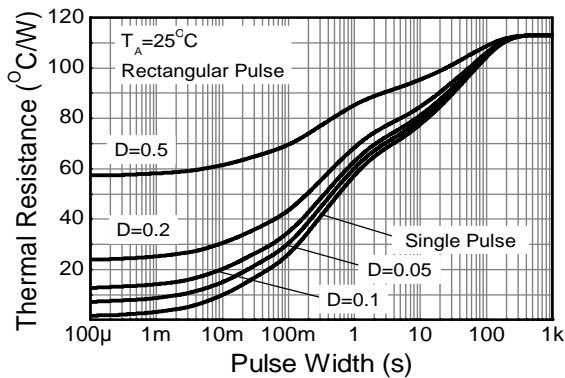
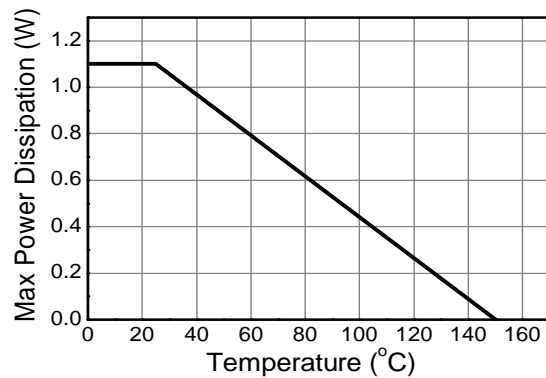
**Maximum Ratings** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

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

**Thermal Characteristics**

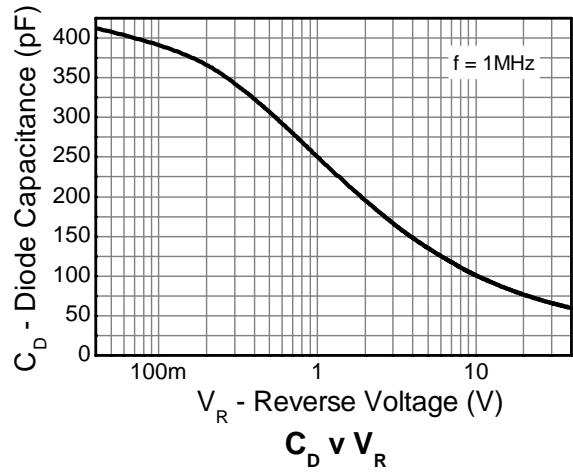
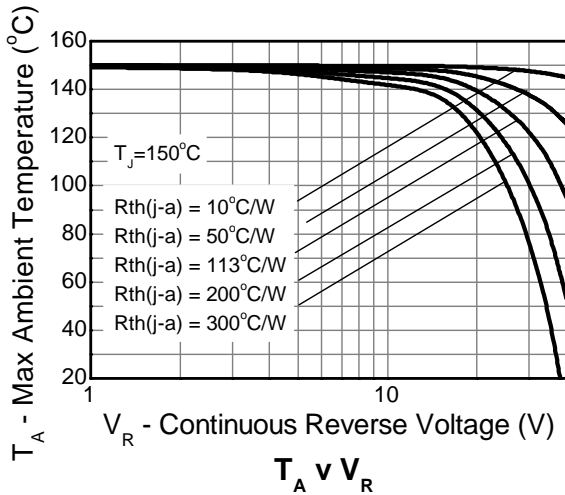
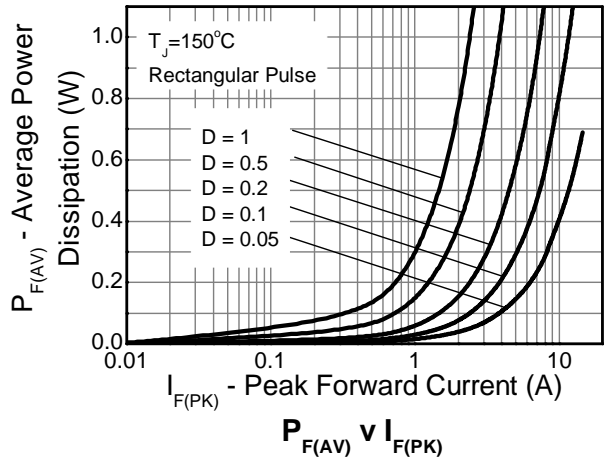
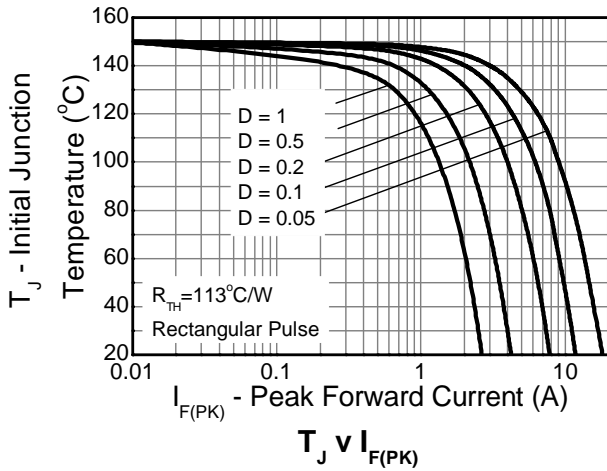
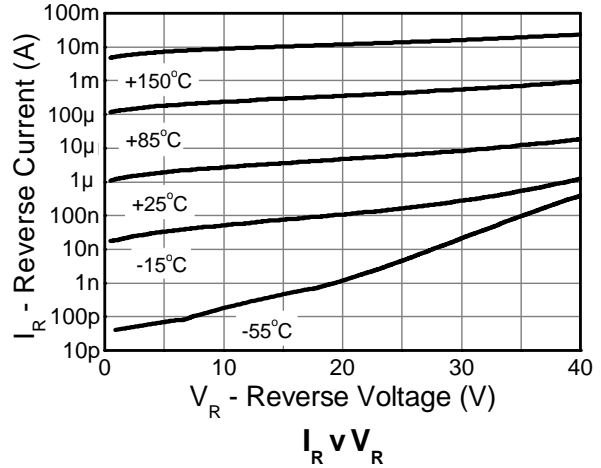
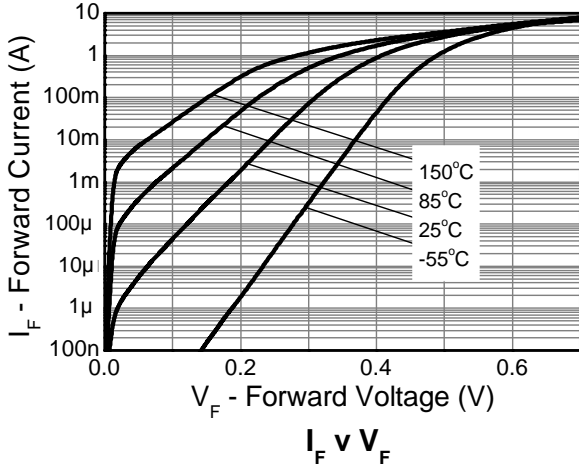
Characteristic	Symbol	Value	Unit
Power Dissipation @ $T_A = +25^\circ\text{C}$		1.1	W
Single Die Continuous	$P_D$	1.71	W
Single Die Measured at $t < 5s$			
Junction to Ambient (Note 6)	$R_{\theta JA}$	113	$^\circ\text{C/W}$
Junction to Ambient (Note 7)	$R_{\theta JA}$	73	$^\circ\text{C/W}$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^\circ\text{C}$
Junction Temperature	$T_J$	+150	$^\circ\text{C}$

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


**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 8)	$V_F$	—	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		$I_F = 3\text{A}$
Reverse Current	$I_R$	—	10	40	$\mu\text{A}$	$V_R = 30\text{V}$
		—	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	$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{RR} = 0.25\text{A}$

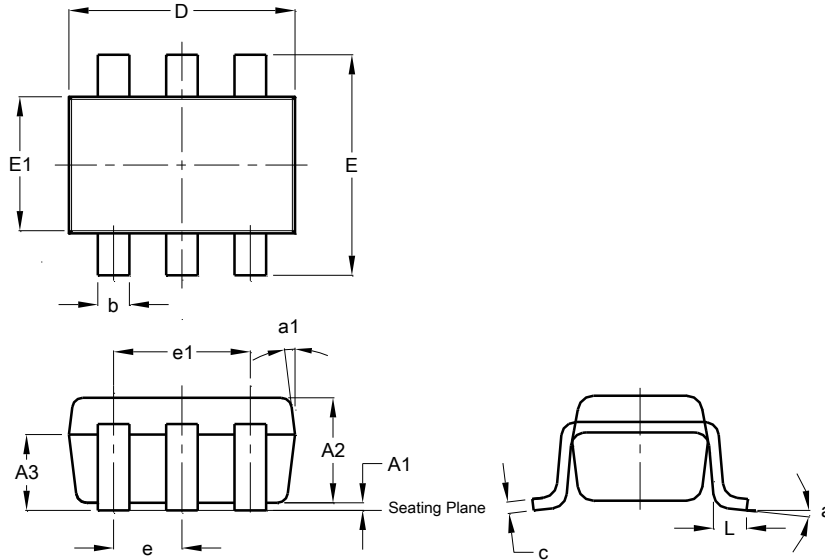
Note: 8. Measured under pulsed conditions. Pulse width = 300 $\mu\text{s}$ . Duty cycle < 2%.



## Package Outline Dimensions

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

### SOT26

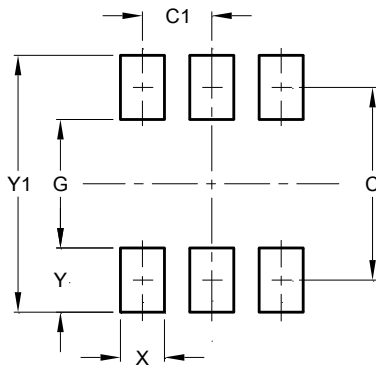


SOT26			
Dim	Min	Max	Typ
A1	0.013	0.10	0.05
A2	1.00	1.30	1.10
A3	0.70	0.80	0.75
b	0.35	0.50	0.38
c	0.10	0.20	0.15
D	2.90	3.10	3.00
e	-	-	0.95
e1	-	-	1.90
E	2.70	3.00	2.80
E1	1.50	1.70	1.60
L	0.35	0.55	0.40
a	-	-	8°
a1	-	-	7°
All Dimensions in mm			

## 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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