

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**

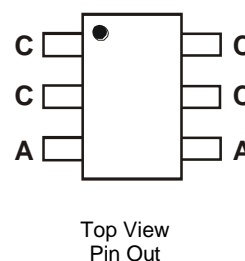
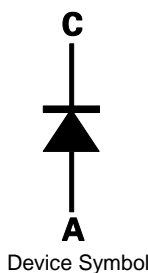
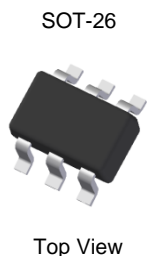
Description and Applications

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

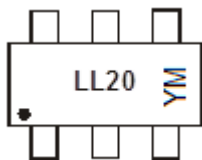
Mechanical Data

- 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)

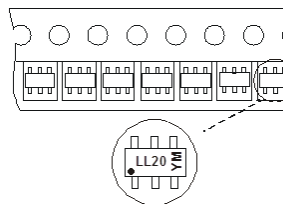

Ordering Information

| 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 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 |

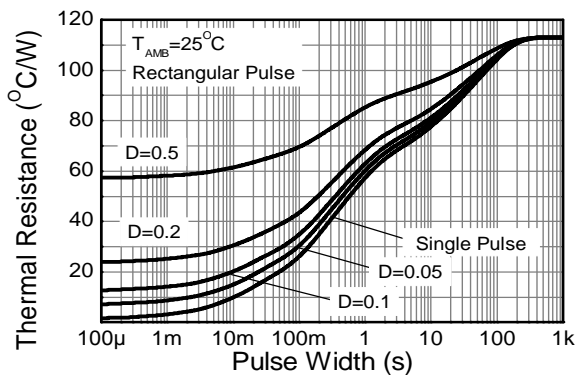
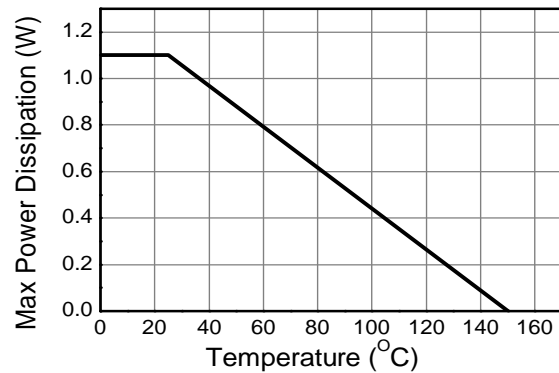
Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

| 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} | t ≤ 100μs | 36 |
| | | t ≤ 10ms | 12 |

Thermal Characteristics

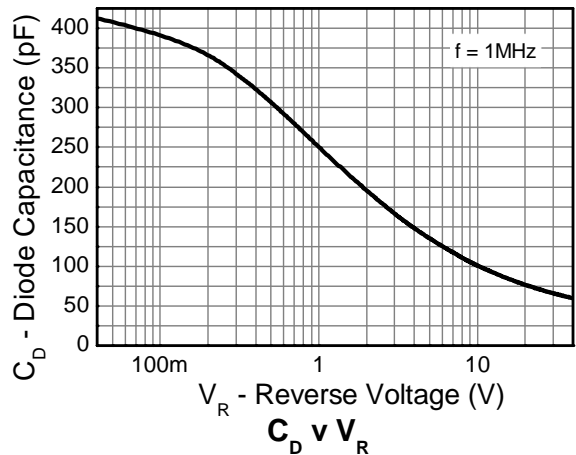
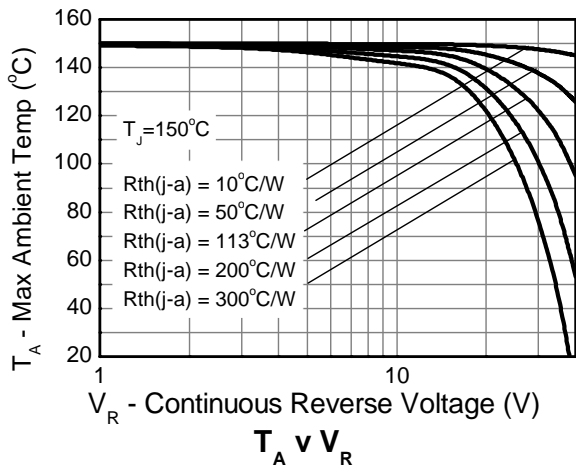
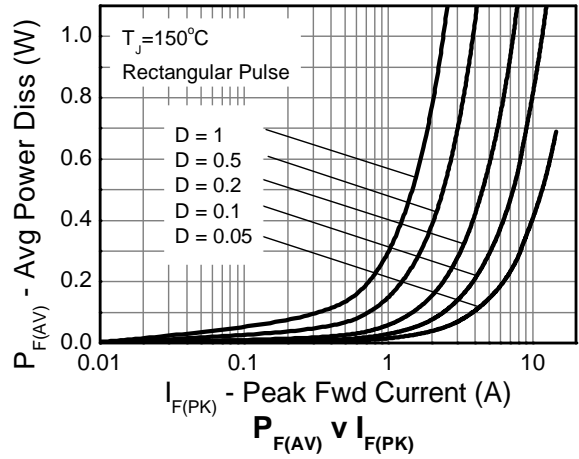
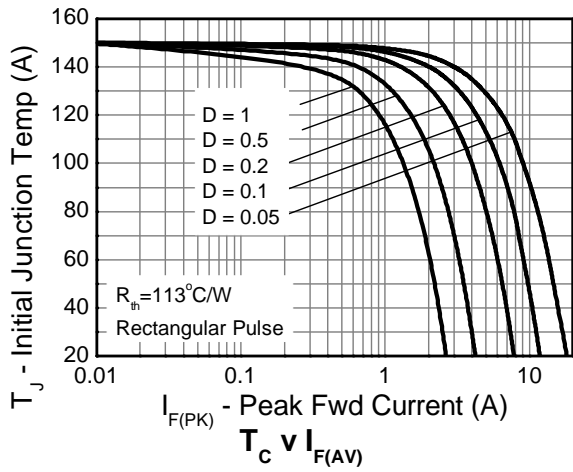
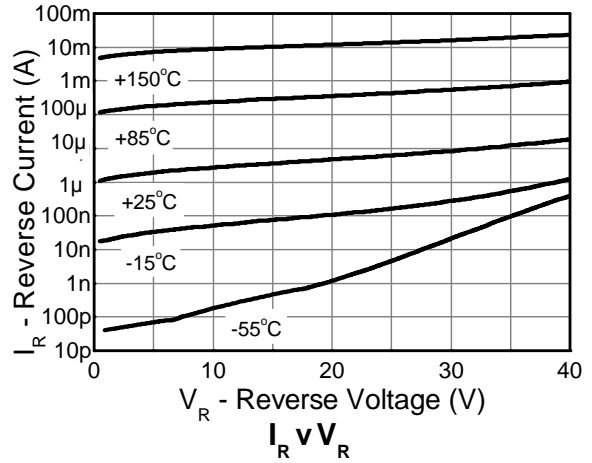
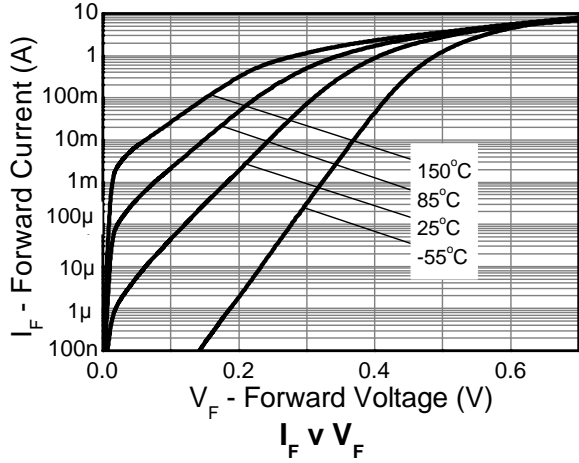
| Characteristic | Symbol | Value | Unit |
|---|------------------|-------------|------|
| Power Dissipation @T _A = +25°C | | - | - |
| Single Die Continuous | P _D | 1.1 | W |
| Single Die Measured at t < 5 secs | | 1.71 | W |
| Junction to Ambient (Note 5) | R _{θJA} | 113 | °C/W |
| Junction to Ambient (Note 6) | R _{θJA} | 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 < 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 7) | 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 |
| 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 |

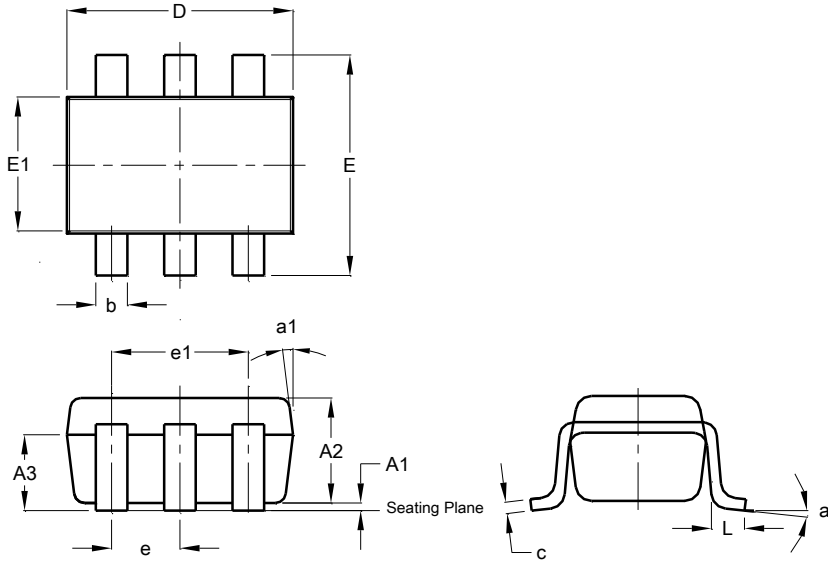
Note: 7. Measured under pulsed conditions. Pulse width = 300μs. Duty cycle < 2%.



Package Outline Dimensions

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

SOT26

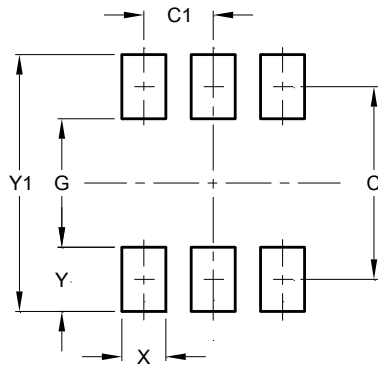


| SOT26 | | | |
|----------------------|-------|------|------|
| Dim | Min | Max | Typ |
| A1 | 0.013 | 0.10 | 0.05 |
| A2 | 1.00 | 1.30 | 1.10 |
| A3 | 0.70 | 0.80 | 0.75 |
| b | 0.35 | 0.50 | 0.38 |
| c | 0.10 | 0.20 | 0.15 |
| D | 2.90 | 3.10 | 3.00 |
| e | - | - | 0.95 |
| e1 | - | - | 1.90 |
| E | 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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