

Product Summary

| V _{RRM} (V) | I _o (A) | V _F Max (V) | I _R Max (mA) |
|----------------------|--------------------|------------------------|-------------------------|
| 65 | 20 | 0.63 | 0.4 |

Description

Packaged in the robust industry-standard TO252 package, the SBR2065D1 provides low V_F and excellent reverse leakage stability at high temperatures.



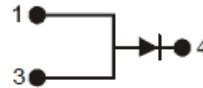
Top View

Features and Benefits

- Patented Super Barrier Rectifier SBR[®] Technology.
- Reduced Low Forward Voltage Drop (V_F).
Better Efficiency and Cooler Operation.
- Reduced High Temperature Reverse Leakage.
Increased Reliability Against Thermal Runaway Failure in High Temperature Operation.
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: TO252 (DPAK)
- 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.
Solderable per MIL-STD-202, Method 208 ^(e3)
- Weight: 0.4 grams (Approximate)



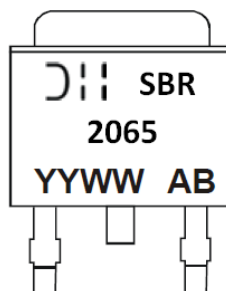
Package Pin-Out
Configuration

Ordering Information (Note 4)

| Part Number | Case | Packaging |
|--------------|--------------|-----------------|
| SBR2065D1-13 | TO252 (DPAK) | 2500 Piece/Reel |

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
 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



SBR2065 = Product Type Marking Code
 AB = Foundry and Assembly Code
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 16 = 2016)
 WW = Week (01 to 53)

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

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitance load, derate current by 20%.

| Characteristic | Symbol | Value | Unit |
|---|------------------|-------|------|
| Peak Repetitive Reverse Voltage | V _{RRM} | 65 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Blocking Voltage | V _{RM} | | |
| Average Rectified Output Current | I _O | 20 | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 140 | A |

Thermal Characteristics (Per Leg)

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Typical Thermal Resistance Junction to Ambient (Note 5) | R _{θJA} | 11 | °C/W |
| Typical Thermal Resistance Junction to Case (Note 5) | R _{θJC} | 1.7 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55 to +150 | °C |

Electrical Characteristics (Per Leg) (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|--------------------------|----------------|-----|------|------|------|---|
| Forward Voltage Drop | V _F | — | 0.46 | 0.52 | V | I _F = 10A, T _J = +25°C |
| | | — | — | 0.63 | | I _F = 20A, T _J = +25°C |
| Leakage Current (Note 6) | I _R | — | 0.1 | 0.4 | mA | V _R = 65V, T _J = +25°C |
| | | — | — | 60 | | V _R = 65V, T _J = +125°C |

Notes: 5. With 2inch*2inch Al board + 50mm*50mm*23mm Al heatsink.
6. Short duration pulse test used to minimize self-heating effect.

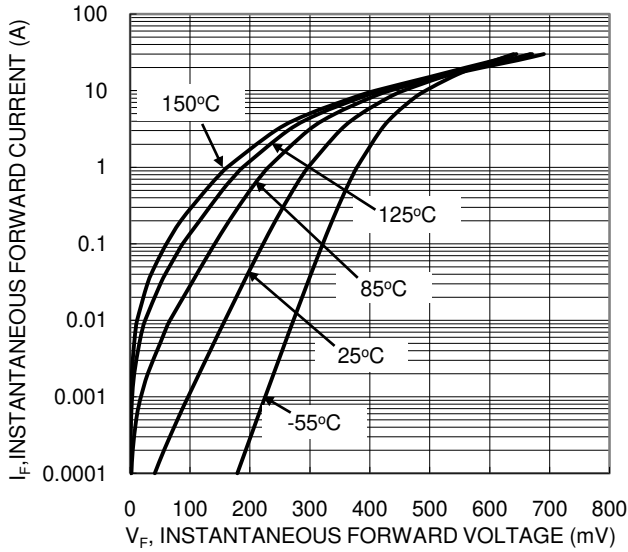


Figure 1. Typical Forward Characteristics

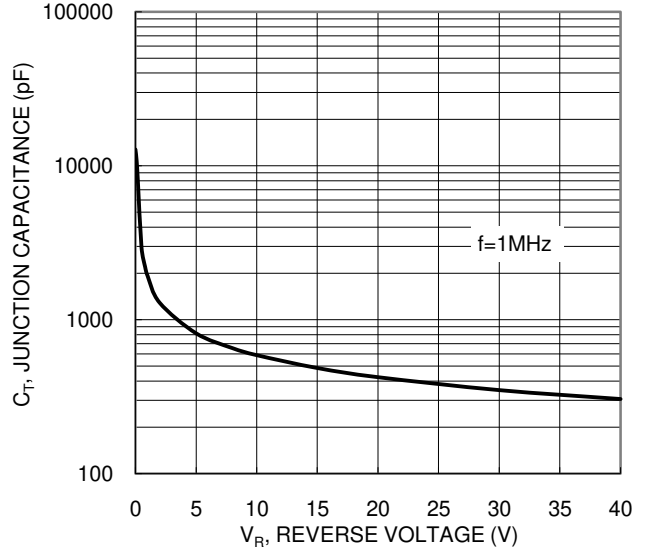


Figure 2. Typical Junction Capacitance

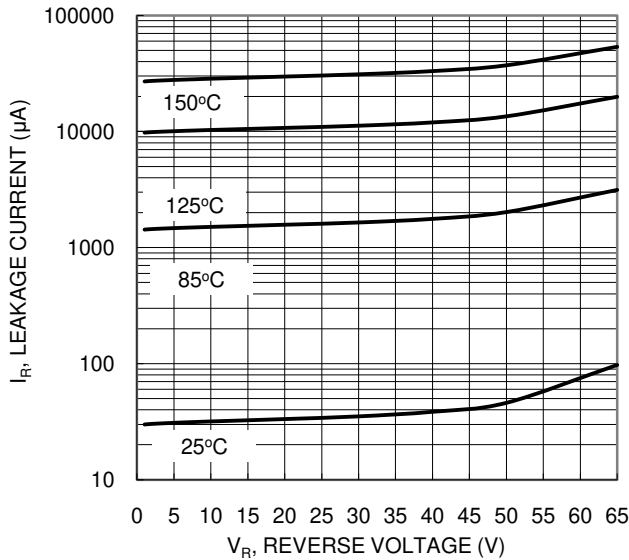


Figure 3. Typical Reverse Characteristics

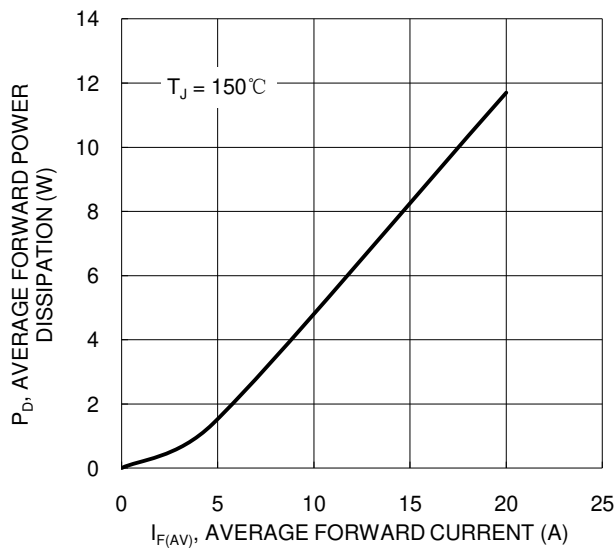


Figure 5. Forward Power Dissipation

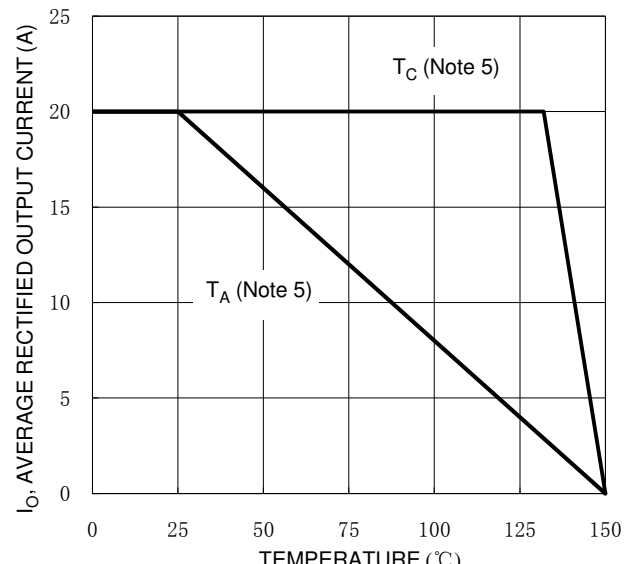
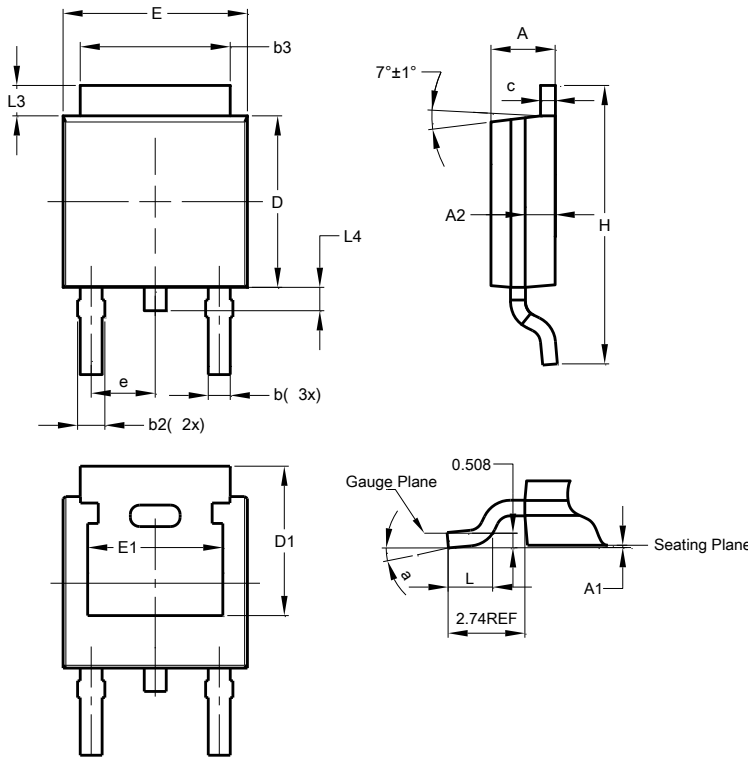


Figure 6. DC Forward Current Derating

Package Outline Dimensions

Please see AP02001 at http://www.diodes.com/_files/datasheets/ap02001.pdf for the latest version.

TO252 (DPAK)



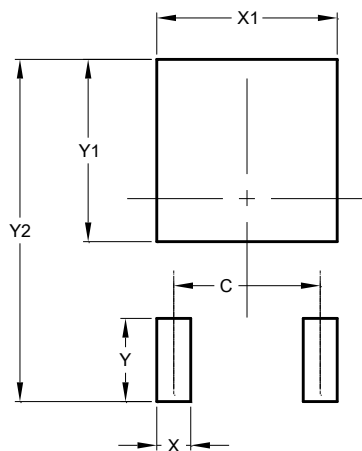
| TO252 (DPAK) | | | |
|----------------------|------|-------|-------|
| Dim | Min | Max | Typ |
| A | 2.19 | 2.39 | 2.29 |
| A1 | 0.00 | 0.13 | 0.08 |
| A2 | 0.97 | 1.17 | 1.07 |
| b | 0.64 | 0.88 | 0.783 |
| b2 | 0.76 | 1.14 | 0.95 |
| b3 | 5.21 | 5.46 | 5.33 |
| c | 0.45 | 0.58 | 0.531 |
| D | 6.00 | 6.20 | 6.10 |
| D1 | 5.21 | - | - |
| e | - | - | 2.286 |
| E | 6.45 | 6.70 | 6.58 |
| E1 | 4.32 | - | - |
| H | 9.40 | 10.41 | 9.91 |
| L | 1.40 | 1.78 | 1.59 |
| L3 | 0.88 | 1.27 | 1.08 |
| L4 | 0.64 | 1.02 | 0.83 |
| a | 0° | 10° | - |
| All Dimensions in mm | | | |

NEW PRODUCT

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/_files/datasheets/ap02001.pdf for the latest version.

TO252 (DPAK)



| Dimensions | Value (in mm) |
|------------|---------------|
| C | 4.572 |
| X | 1.060 |
| X1 | 5.632 |
| Y | 2.600 |
| Y1 | 5.700 |
| Y2 | 10.700 |

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