

Product Summary (@ T_A = +25°C)

| V _{RRM} (V) | I _O (A) | V _{F(MAX)} (V) | I _{R(MAX)} (mA) |
|----------------------|--------------------|-------------------------|--------------------------|
| 30 | 3 | 0.49 | 0.02 |

Description and Applications

Packaged in the compact U-DFN3030-8 package, the TrenchSBR SBRT3M30LP provides excellent low reverse leakage stability at high temperatures. It is ideal for use in low voltage, high frequency inverters, as well as freewheeling and polarity protection applications.

- AC-DC Adaptors/Chargers
- DC-DC Converters
- Bypass Diode
- Boost Diode
- Blocking Diode
- Recirculating Diode

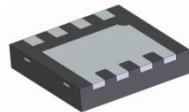
Features and Benefits

- Low Power Loss, High Efficiency
- Low Reverse Leakage Current
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

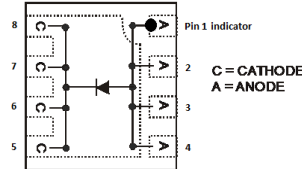
Mechanical Data

- Case: U-DFN3030-8
- Case Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - NiPdAu over Copper Leadframe; Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Weight: 0.0172 grams (Approximate)

U-DFN3030-8



Bottom View


 Top View
Schematic and Pin Configuration

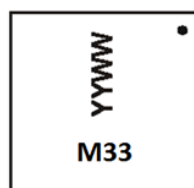
Ordering Information (Note 4)

| Part Number | Qualification | Case | Packaging |
|--------------|---------------|-------------|-------------------|
| SBRT3M30LP-7 | Commercial | U-DFN3030-8 | 3,000/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

U-DFN3030-8



M33 = Product Marking Code
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 16 for 2016)
 WW = Week Code (01 to 53)

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

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

| Characteristic | Symbol | Value | Unit |
|---|---------------------|-------|------|
| Peak Repetitive Reverse Voltage | V _{RRM} | 30 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Blocking Voltage | V _R | | |
| RMS Reverse Voltage | V _{R(RMS)} | 21 | V |
| Average Rectified Output Current | I _O | 3.0 | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 30 | A |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Typical Thermal Resistance Junction to Case (Note 5) | R _{θJC} | 15 | °C/W |
| Typical Thermal Resistance Junction to Ambient Air (Note 5) | R _{θJA} | 152 | °C/W |
| Typical Thermal Resistance Junction to Case (Note 6) | R _{θJC} | 7 | °C/W |
| Typical Thermal Resistance Junction to Ambient Air (Note 6) | R _{θJA} | 76 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +175 | °C |

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

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|------------------------------------|--------------------|-----|--------------|-----------|------|---|
| Reverse Breakdown Voltage (Note 7) | V _{(BR)R} | 30 | — | — | V | I _R = 0.02mA |
| Forward Voltage | V _F | — | 0.45 0.43 | 0.49 — | V | I _F = 3.0A, T _A = +25°C I _F = 3.0A, T _A = +125°C |
| Reverse Current (Note 7) | I _R | — | 0.005 | 0.02 | mA | T _J = +25°C, V _R = 30V |
| Total Capacitance | C _T | — | 100 | — | pF | f = 1MHz, V _R = 30V |
| Reverse Recovery Time | t _{RR} | — | 16 | — | ns | I _F = 0.5A, I _R = 1.0A, I _{RR} = 0.25A |

Notes: 5. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>. T_A = +25°C.
6. PCB with 1-inch sq. Copper pad, 2oz.
7. Short duration pulse test used to minimize self-heating effect.

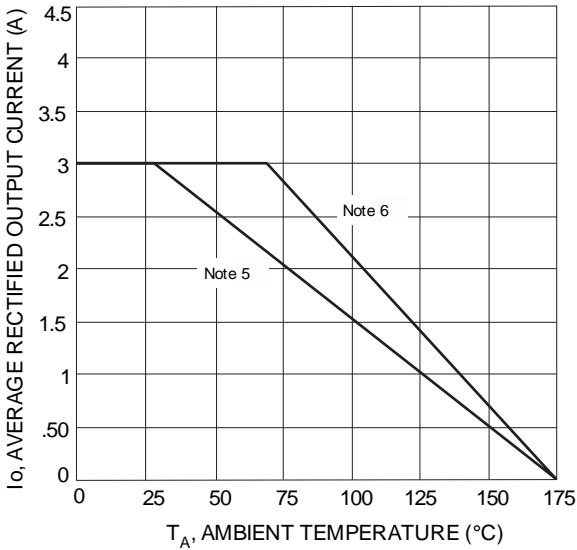


Figure 1, DC Forward Current Derating

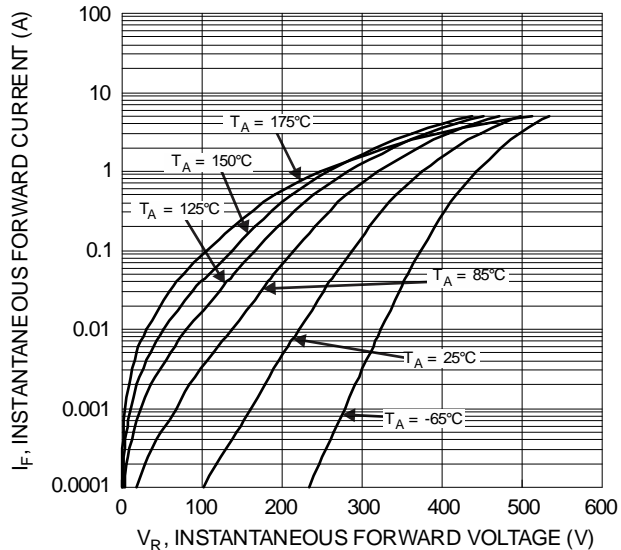


Figure 2 Typical Forward Characteristics

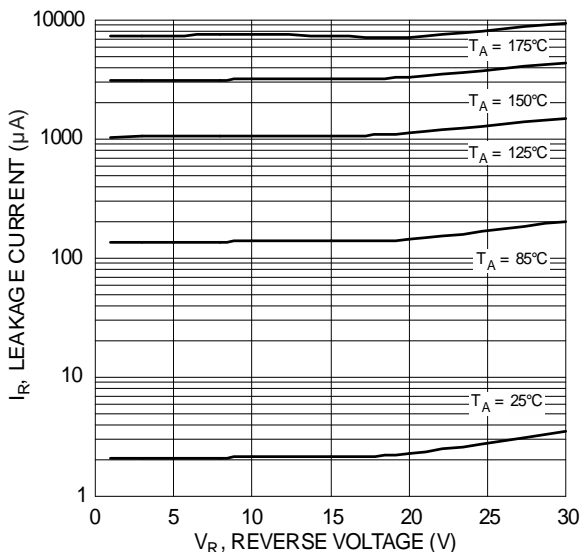


Figure 3 Typical Reverse Characteristics

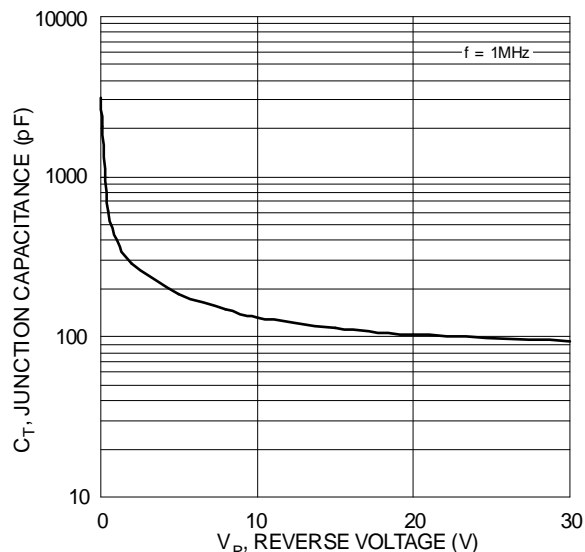


Figure 4 Typical Junction Capacitance

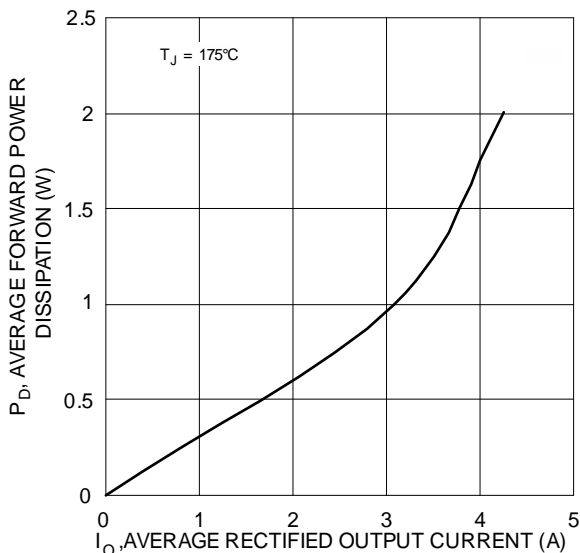


Figure 5 Forward Power Dissipation

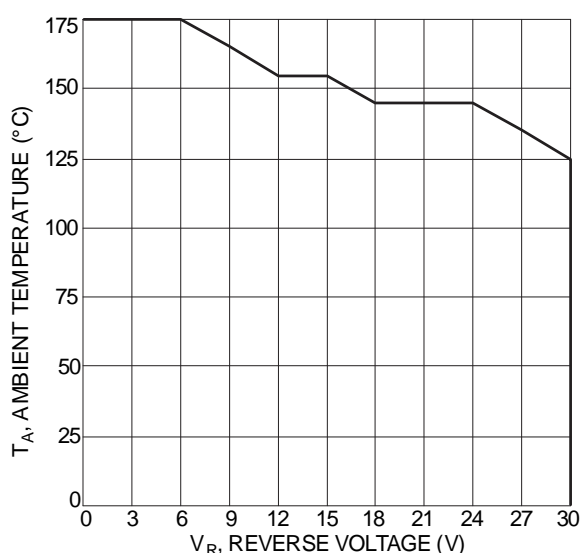
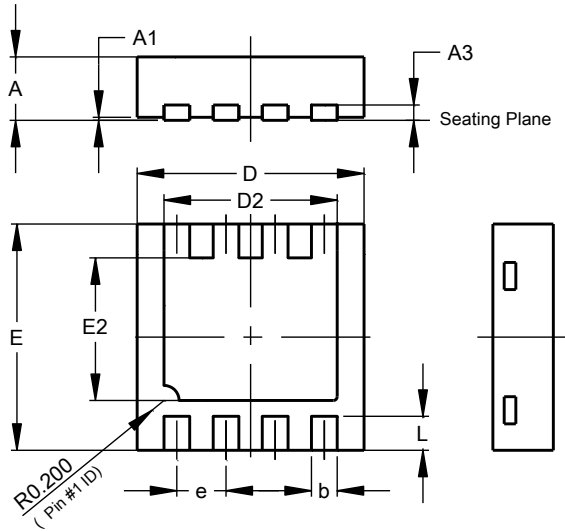


Figure 6 Reverse Voltage Derating

Package Outline Dimensions

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

U-DFN3030-8

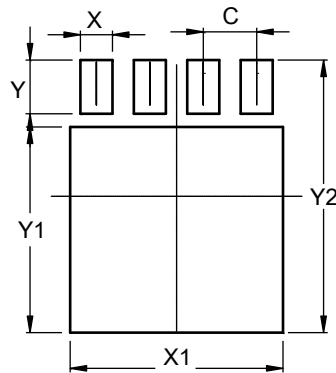


| U-DFN3030-8 | | | |
|----------------------|------|------|------|
| Dim | Min | Max | Typ |
| A | 0.57 | 0.63 | 0.60 |
| A1 | 0 | 0.05 | 0.02 |
| A3 | - | - | 0.15 |
| b | 0.29 | 0.39 | 0.34 |
| D | 2.90 | 3.10 | 3.00 |
| D2 | 2.19 | 2.39 | 2.29 |
| e | - | - | 0.65 |
| E | 2.90 | 3.10 | 3.00 |
| E2 | 1.64 | 1.84 | 1.74 |
| L | 0.30 | 0.60 | 0.45 |
| All Dimensions in mm | | | |

Suggested Pad Layout

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

U-DFN3030-8



| Dimensions | Value (in mm) |
|------------|---------------|
| C | 0.650 |
| X | 0.390 |
| X1 | 2.590 |
| Y | 0.650 |
| Y1 | 2.490 |
| Y2 | 3.300 |

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