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

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)**

Description and Applications

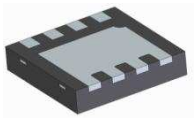
Packaged in the compact U-DFN3030-8 package, the TrenchSBR SBRT3M30LP provides excellent low reverse leakage stability at high temperatures. It is ideal for use in low voltage, high frequency inverters, as well as freewheeling and polarity protection applications.

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

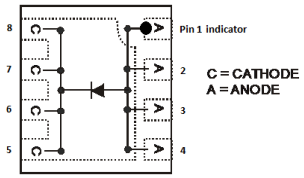
Mechanical Data

- 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 e4
- Polarity: See Diagram
- Weight: 0.0172 grams (Approximate)

U-DFN3030-8



Bottom View



Top View
Schematic and Pin Configuration

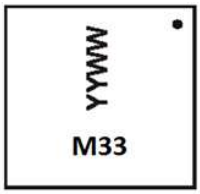
Ordering Information (Note 4)

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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	30	V
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)	$R_{\theta JC}$	15	°C/W
Typical Thermal Resistance Junction to Ambient Air	(Note 5)	$R_{\theta JA}$	152	°C/W
Typical Thermal Resistance Junction to Case	(Note 6)	$R_{\theta JC}$	7	°C/W
Typical Thermal Resistance Junction to Ambient Air	(Note 6)	$R_{\theta JA}$	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.

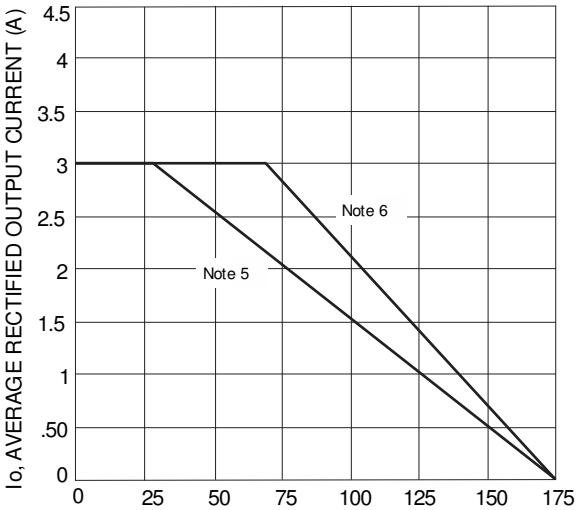


Figure 1, DC Forward Current Derating

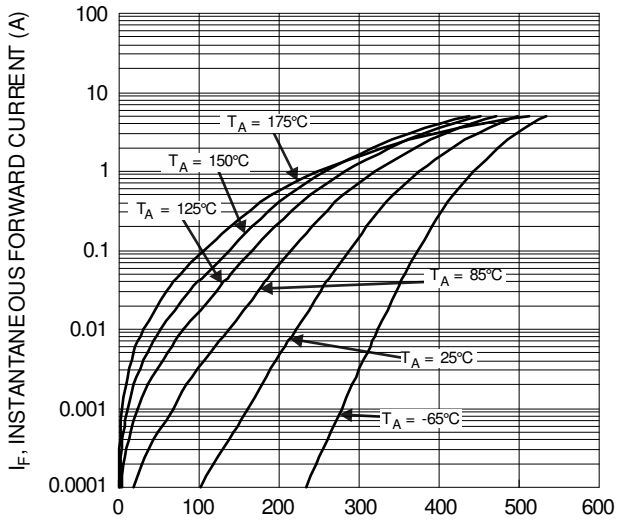


Figure 2 Typical Forward Characteristics

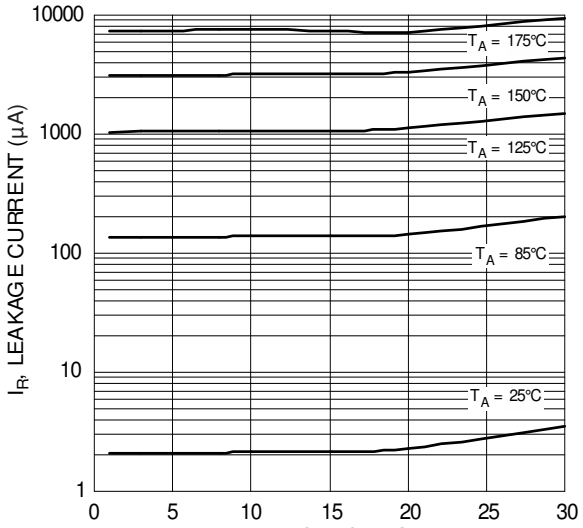


Figure 3 Typical Reverse Characteristics

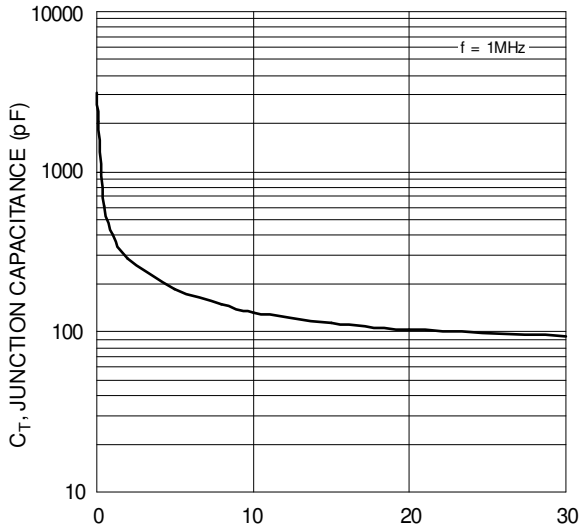


Figure 4 Typical Junction Capacitance

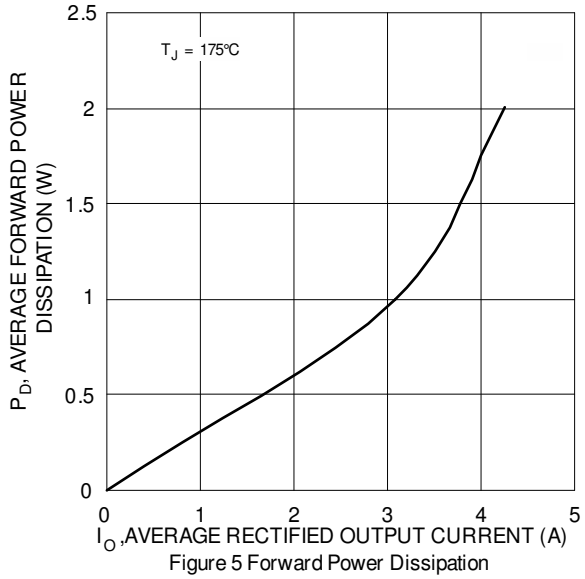


Figure 5 Forward Power Dissipation

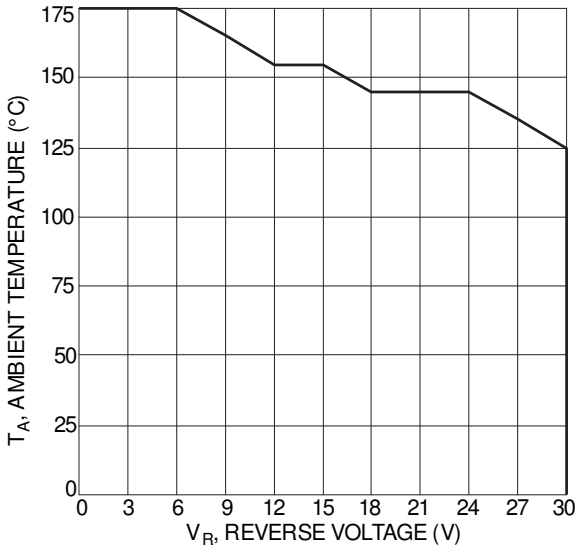
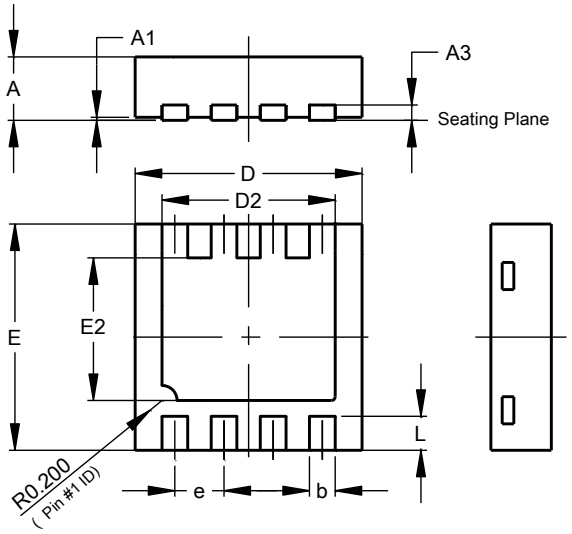


Figure 6 Reverse Voltage Derating

Package Outline Dimensions

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

U-DFN3030-8

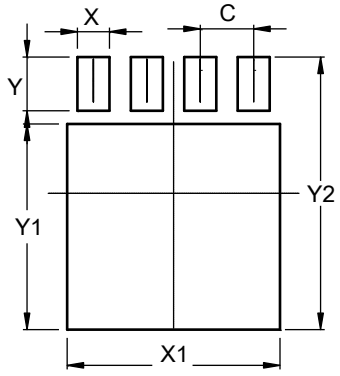


U-DFN3030-8			
Dim	**Min**	**Max**	**Typ**
A	0.57	0.63	0.60
A1	0	0.05	0.02
A3	-	-	0.15
b	0.29	0.39	0.34
D	2.90	3.10	3.00
D2	2.19	2.39	2.29
e	-	-	0.65
E	2.90	3.10	3.00
E2	1.64	1.84	1.74
L	0.30	0.60	0.45
All Dimensions in mm			

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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