

**Product Summary** (@T<sub>A</sub> = +25°C)

V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	V <sub>F MAX</sub> (V)	I <sub>R MAX</sub> (μA)
30	4	0.51	60

**Description and Applications**

The SBRT4M30LP is a 4A, 30V single rectifier packaged in the low profile DFN3030 package. Providing low VF and excellent high temperature stability, this device is ideal for use in general rectification applications such as:

- Bypass Diode
- Boost Diode
- Blocking Diode
- Recirculating Diode

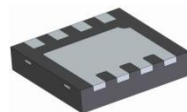
**Features and Benefits**

- Reduced ultra-low forward voltage drop (V<sub>F</sub>); Better efficiency and cooler operation.
- Reduced high temperature reverse leakage; Increased reliability against thermal runaway failure in high temperature operation.
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

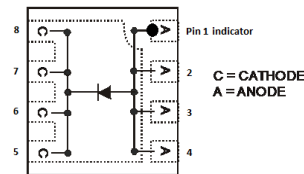
**Mechanical Data**

- 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 Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 <sup>(e4)</sup>
- Weight: 0.0172 grams (Approximate)

U-DFN3030-8



Bottom View


 Top View  
Schematic and Pin Configuration

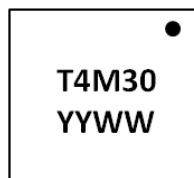
**Ordering Information** (Note 4)

Part Number	Qualification	Case	Packaging
SBRT4M30LP-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](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



T4M30 = Product Type Marking Code  
 YYWW = Date Code Marking  
 Y Y = Last Two Digits of Year (ex: 15 for 2015)  
 WW = Week Code 01 to 53

**Maximum Ratings** (@T<sub>A</sub> = +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 Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>RM</sub>	30	V
Average Rectified Output Current	I <sub>O</sub>	4	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	40	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	R <sub>θJA</sub>	148	°C/W
Typical Thermal Resistance Junction to Case (Note 5)	R <sub>θJC</sub>	25	°C/W
Typical Thermal Resistance Junction to Ambient (Note 6)	R <sub>θJA</sub>	72	°C/W
Typical Thermal Resistance Junction to Case (Note 6)	R <sub>θJC</sub>	7	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V <sub>F</sub>	—	0.43	0.48	V	I <sub>F</sub> = 3A, T <sub>J</sub> = +25°C
		—	—	0.51		I <sub>F</sub> = 4A, T <sub>J</sub> = +25°C
		—	0.38	—		I <sub>F</sub> = 4A, T <sub>J</sub> = +125°C
Leakage Current (Note 7)	I <sub>R</sub>	—	5	60	μA	V <sub>R</sub> = 30V, T <sub>J</sub> = +25°C
		—	1.7	—		mA
Total Capacitance	C <sub>T</sub>	—	150	—	pF	f = 1MHz, V <sub>R</sub> = 30V
Reverse Recovery Time	T <sub>rr</sub>	—	30	—	ns	I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1.0A, I <sub>RR</sub> = 0.25A

- Notes:
5. Test with FR-4 substrate PC board, 2oz copper, 1\*MRP.
  6. Test with PC board, 1-inch sq. copper pad, 2oz.
  7. Short duration pulse test used to minimize self-heating effect.

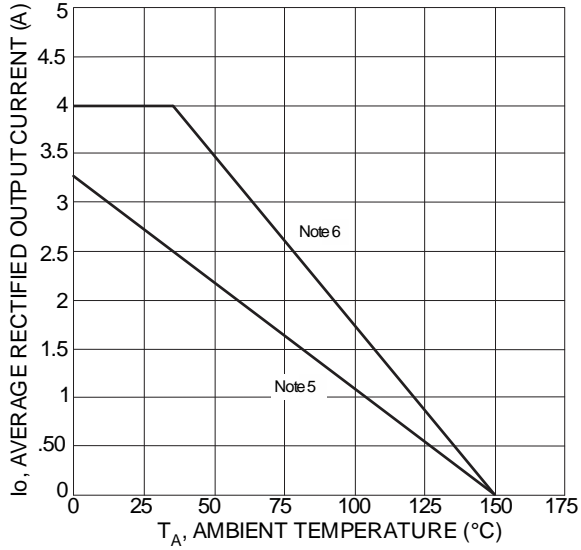


Figure 1 DC Forward Current Derating

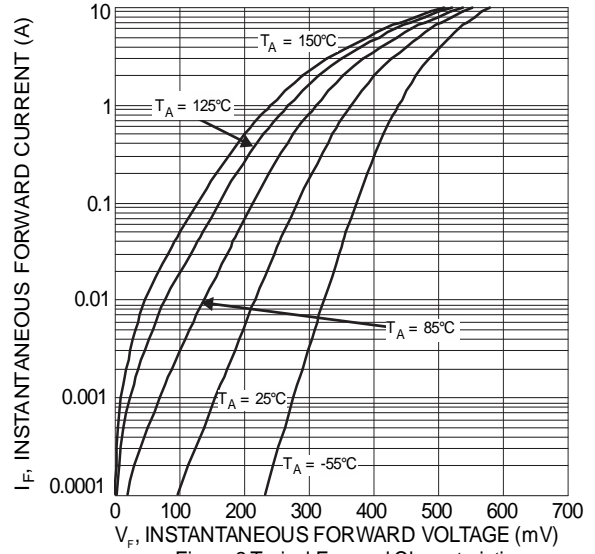


Figure 2 Typical Forward Characteristics

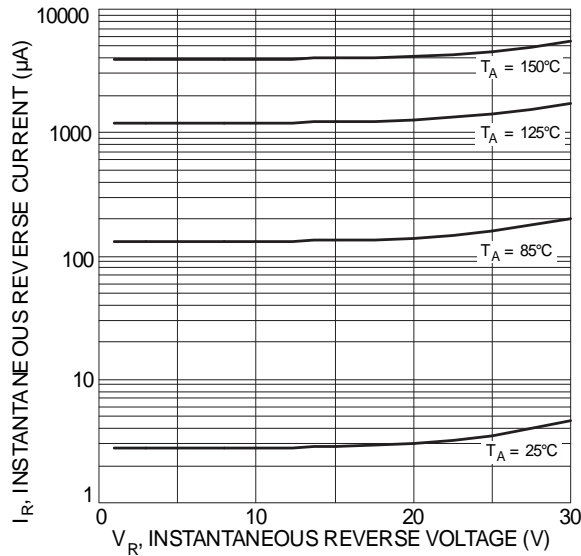


Figure 3 Typical Reverse Characteristics

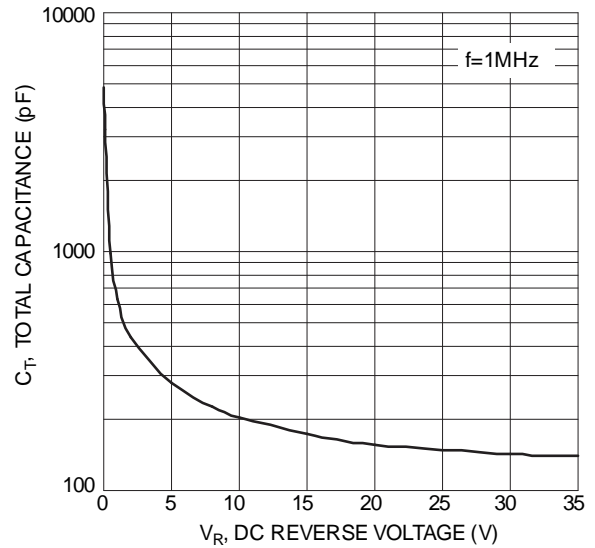


Figure 4 Typical Total Capacitance

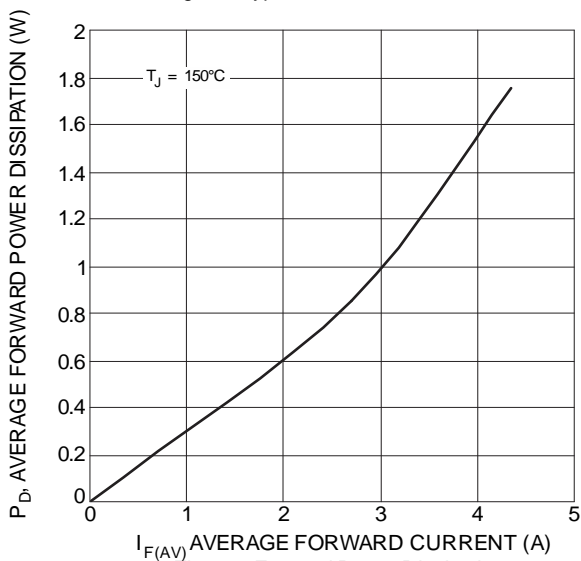
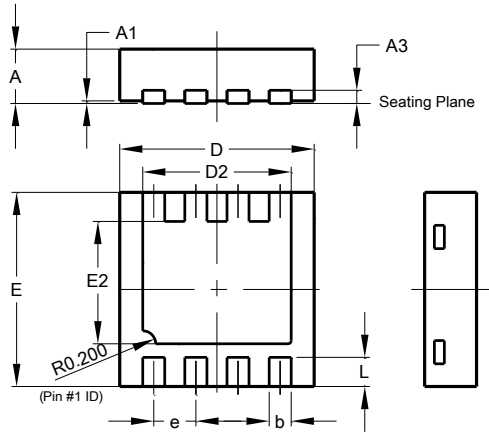


Figure 5 Forward Power Dissipation

## Package Outline Dimensions

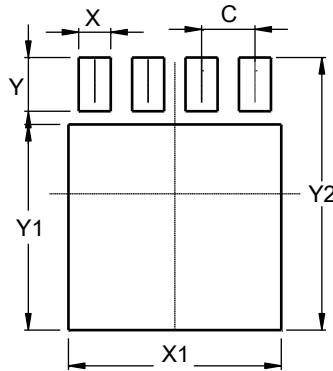
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



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 AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



Dimensions	Value (in mm)
C	0.650
X	0.390
X1	2.590
Y	0.650
Y1	2.490
Y3	3.300

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