Product Summary (@T_A = +25°C)

V_{RRM} (V)	I_O (A)	$V_{F\ MAX}$ (V)	$I_{R\ MAX}$ (µA)
30	4	0.51	60

Features and Benefits

- Reduced ultra-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.
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Description and Applications

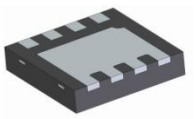
The SBRT4M30LP is a 4A, 30V single rectifier packaged in the low profile DFN3030 package. Providing low VF and excellent high temperature stability, this device is ideal for use in general rectification applications such as:

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

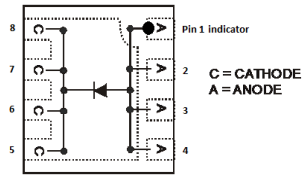
Mechanical Data

- 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 e4
- 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 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_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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{RM}	30	V
Average Rectified Output Current	I_O	4	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	40	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	148	°C/W
Typical Thermal Resistance Junction to Case (Note 5)	$R_{\theta JC}$	25	°C/W
Typical Thermal Resistance Junction to Ambient (Note 6)	$R_{\theta JA}$	72	°C/W
Typical Thermal Resistance Junction to Case (Note 6)	$R_{\theta JC}$	7	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V_F	— — —	0.43 — 0.38	0.48 0.51 —	V	I_F = 3A, T_J = +25°C I_F = 4A, T_J = +25°C I_F = 4A, T_J = +125°C
Leakage Current (Note 7)	I_R	— —	5 1.7	60 —	μA mA	V_R = 30V, T_J = +25°C V_R = 30V, T_J = +125°C
Total Capacitance	C_T	—	150	—	pF	f = 1MHz, V_R = 30V
Reverse Recovery Time	Trr	—	30	—	ns	I_F =0.5A, I_R =1.0A, I_{RR}=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.

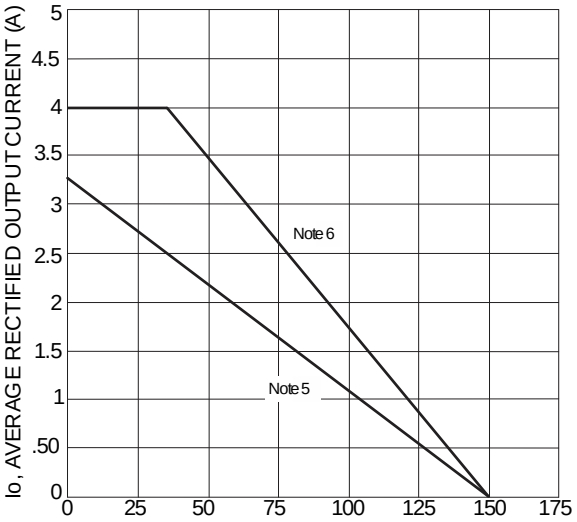


Figure 1 DC Forward Current Derating

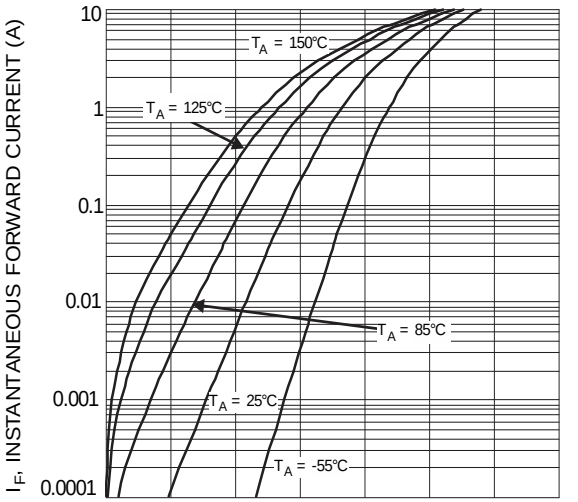


Figure 2 Typical Forward Characteristics

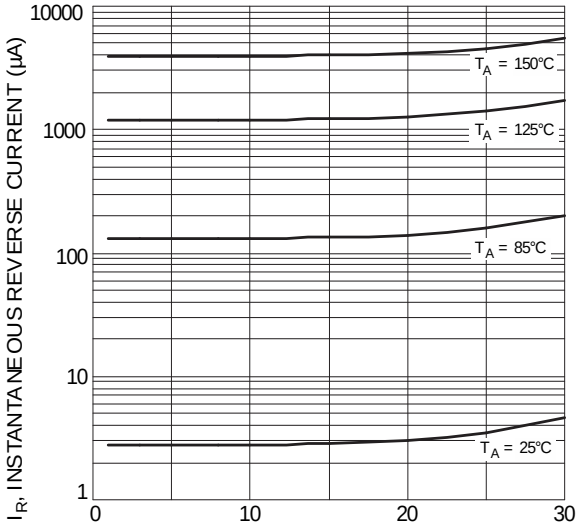


Figure 3 Typical Reverse Characteristics

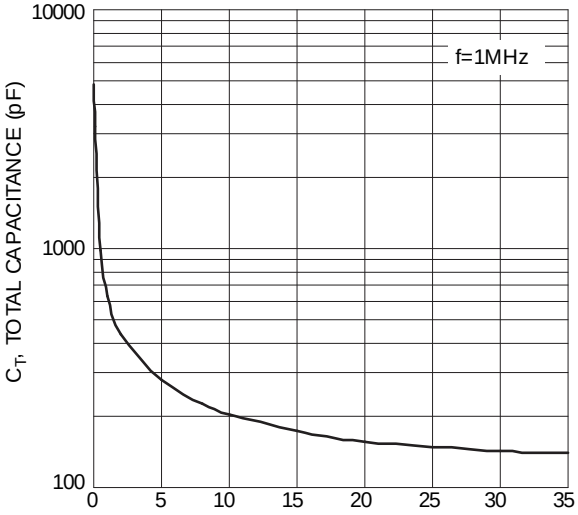


Figure 4 Typical Total Capacitance

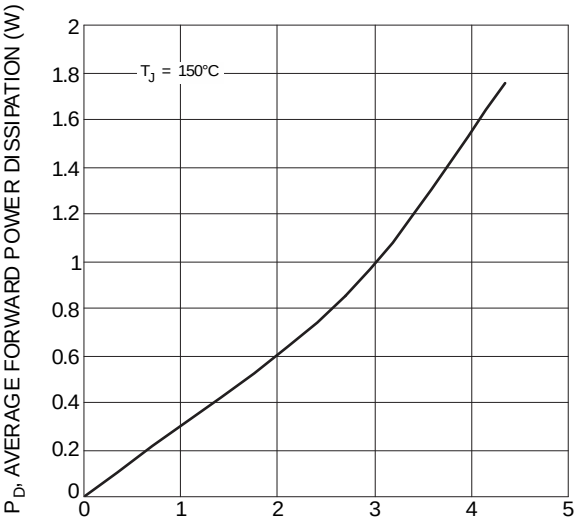
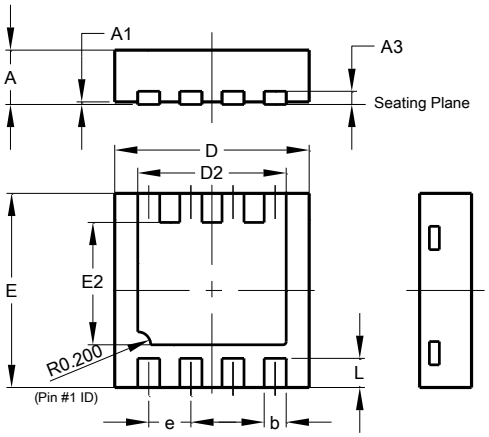


Figure 5 Forward Power Dissipation

Package Outline Dimensions

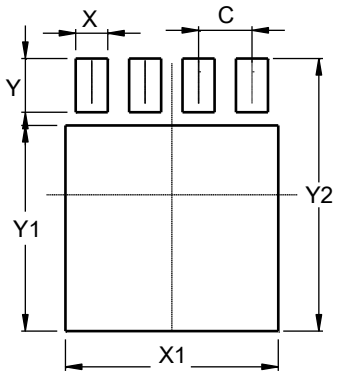
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



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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