Product Summary (@T_A = +25°C)

V_{RRM} (V)	I_O (A)	V_F MAX (V)	I_R MAX (μA)
60	4	0.52	150

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

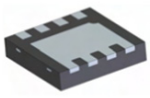
The SBRT4U60LP is a 4A, 60V single rectifier packaged in the low profile DFN3030 package. Providing low V_F and excellent high temperature stability, this device is ideal for use in general rectification applications such as:

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

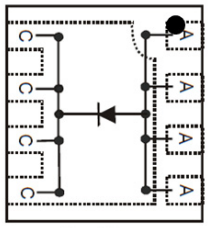
Mechanical Data

- 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 Lead Frame Solderable per MIL-STD-202, Method 208 e4
- Weight: 0.0172 grams (approximate)

U-DFN3030-8



Bottom View



C = CATHODE
A = ANODE

Top View
Schematic and Pin Configuration

Ordering Information (Note 4)

Part Number	Case	Packaging
SBRT4U60LP-7	U-DFN3030-8	3000/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

T4U60 = Product Type Marking Code
YYWW = Date Code Marking
Y Y= Last two digit of year (ex: 14 for 2014)
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}	60	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}	25	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	110	°C/W
Typical Thermal Resistance Junction to Case (Note 5)	$R_{\theta JC}$	10	°C/W
Typical Thermal Resistance Junction to Ambient (Note 6)	$R_{\theta JA}$	70	°C/W
Typical Thermal Resistance Junction to Case (Note 6)	$R_{\theta JC}$	4	°C/W
Total Power Dissipation (Note 5)	P_{TOT}	1.4	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +175	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V_F	— —	0.38 0.46 0.33 0.45	— 0.52 — —	V	I_F = 2A, T_J = +25°C I_F = 4A, T_J = +25°C I_F = 2A, T_J = +125°C I_F = 4A, T_J = +125°C
Leakage Current (Note 7)	I_R	— —	30 6	150 —	μA mA	V_R = 60V, T_J = +25°C V_R = 60V, T_J = +125°C
Total capacitance	C_T	—	180	—	pF	V_R = 5V, f = 1MHz

Notes: 5. Device mounted on FR-4 substrate, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com/datasheets/ap02001.pdf.
6. Device mounted on FR-4 substrate, 2 oz. Copper, 1 sq. inch Cu pad.
7. Short duration pulse test used to minimize self-heating effect.

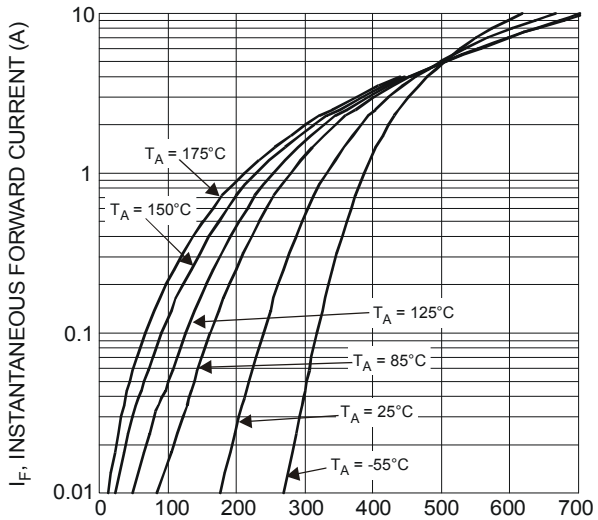


Figure 1 Typical Forward Characteristics

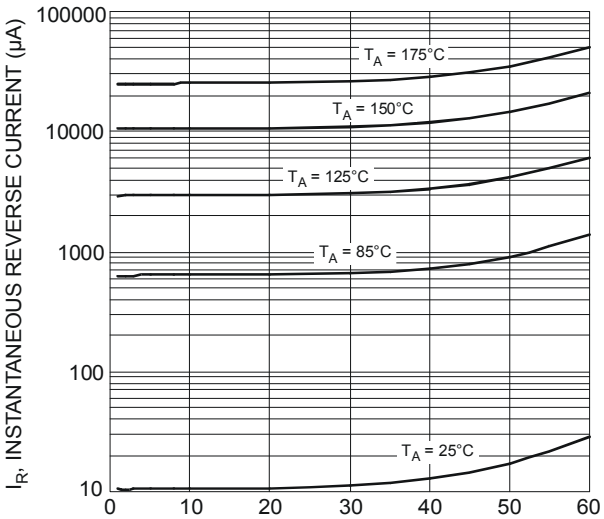


Figure 2 Typical Reverse Characteristics

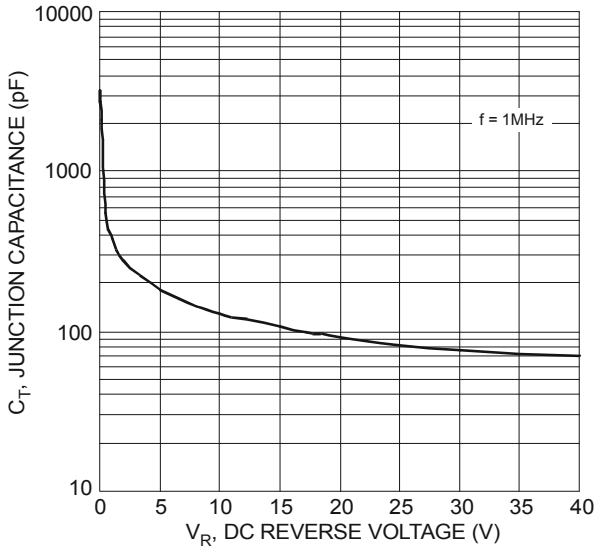


Figure 3 Typical Junction Capacitance

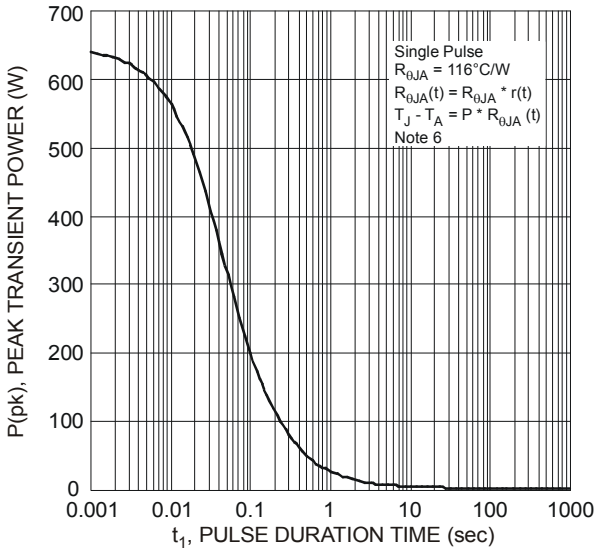


Figure 4 Single Pulse Maximum Power Dissipation

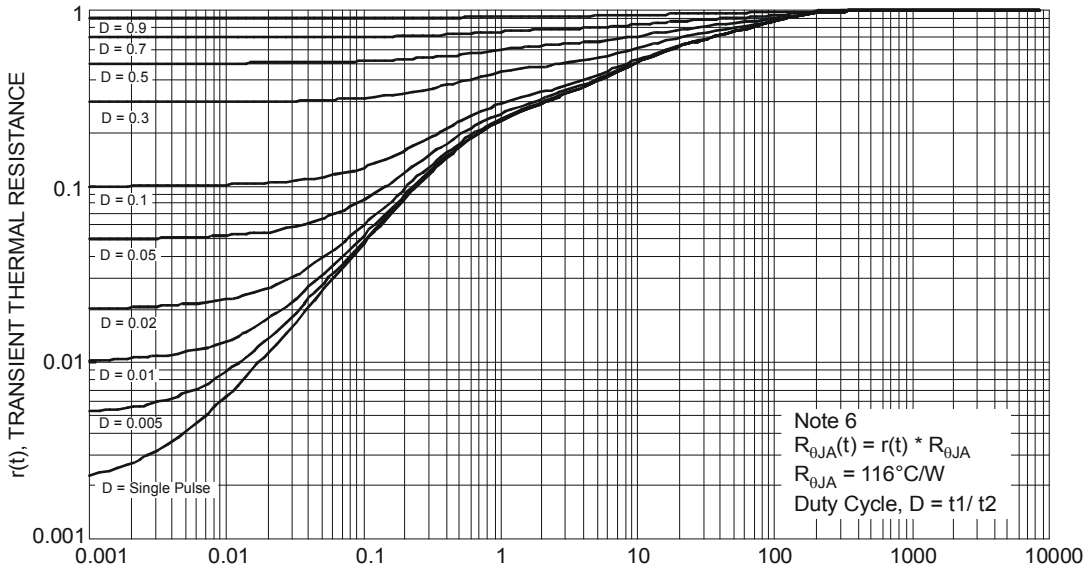


Figure 5 Transient Thermal Resistance

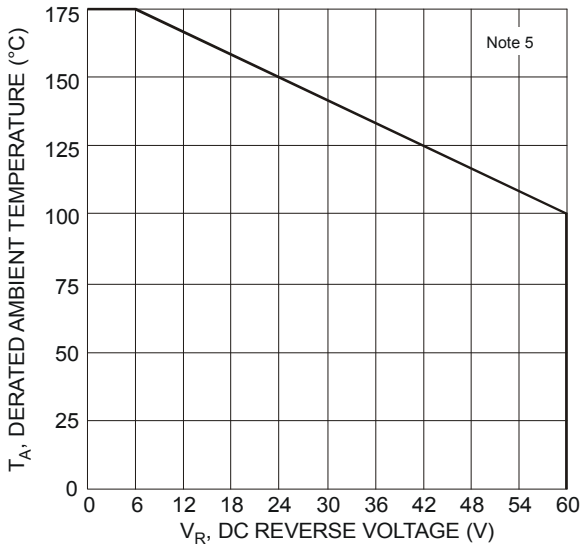
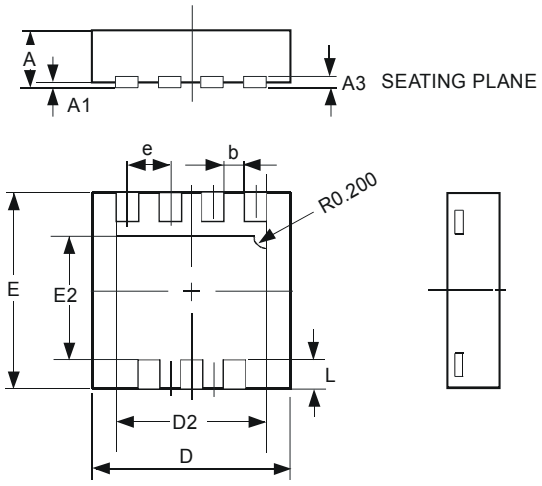


Figure 6 Operating Temperature Derating

Package Outline Dimensions

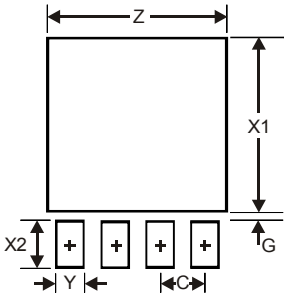
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



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)
Z	2.59
G	0.11
X1	2.49
X2	0.65
Y	0.39
C	0.65

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