

## Product Summary

$V_{RRM}$ (V)	$I_o$ (A)	$V_F(MAX)$ (V) @ +25°C	$I_R(MAX)$ (mA) @ +25°C
60	3	0.59	0.1

## Description and Applications

The SBRT3M60SA is a 3A 60V single rectifier packaged in the low profile SMA package. Providing low  $V_F$  and excellent reverse leakage stability at high temperatures, this device is ideal for use in general rectification applications such as:

- Boost Diode
- Blocking Diode
- Recirculating Diode

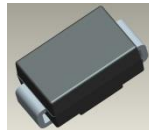
## Features and Benefits

- Reduced reverse leakage ( $I_R$ ) and 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.
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

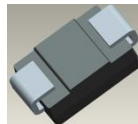
## Mechanical Data

- Case: SMA
- Case Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.064 grams (Approximate)

SMA



Top View



Bottom View

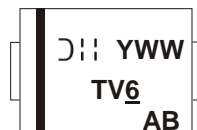


## Ordering Information (Note 4)

Part Number	Case	Packaging
SBRT3M60SA-13	SMA	5,000/Tape & Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
  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



TV6 = Product Type Marking Code  
 YWW = Date Code Marking  
 Y = Last Digit of Year (ex: 5 for 2015)  
 WW = Week Code (01 to 53)  
 AB = Foundry and Assembly Code

**Maximum Ratings** (@ $T_A = +25^\circ\text{C}$ , 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	$V_{RRM}$	60	V
Working Peak Reverse Voltage	$V_{RWM}$		
DC Blocking Voltage	$V_{RM}$		
Average Rectified Output Current	$I_O$	3	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	50	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	90	$^\circ\text{C/W}$
Typical Thermal Resistance Junction to Case (Note 5)	$R_{\theta JC}$	33	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

**Electrical Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	$V_F$	—	—	0.59	V	$I_F = 3\text{A}, T_J = +25^\circ\text{C}$
		—	—	0.57		$I_F = 3\text{A}, T_J = +125^\circ\text{C}$
Leakage Current (Note 6)	$I_R$	—	—	0.1	mA	$V_R = 60\text{V}, T_J = +25^\circ\text{C}$
		—	—	10		$V_R = 60\text{V}, T_J = +125^\circ\text{C}$

Notes: 5. Device mounted on FR-4 substrate, 0.4"×0.5", 2oz, single-sided, PC boards with 0.2"×0.25" copper pad.  
6. Short duration pulse test used to minimize self-heating effect.

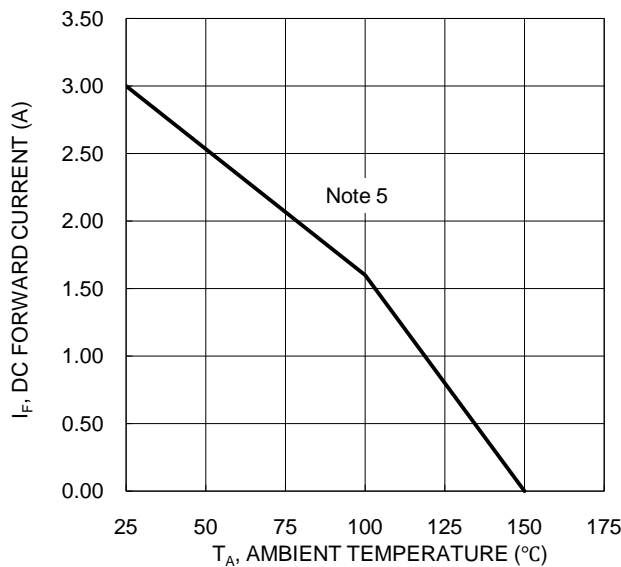


Figure 1. DC Forward Current Derating

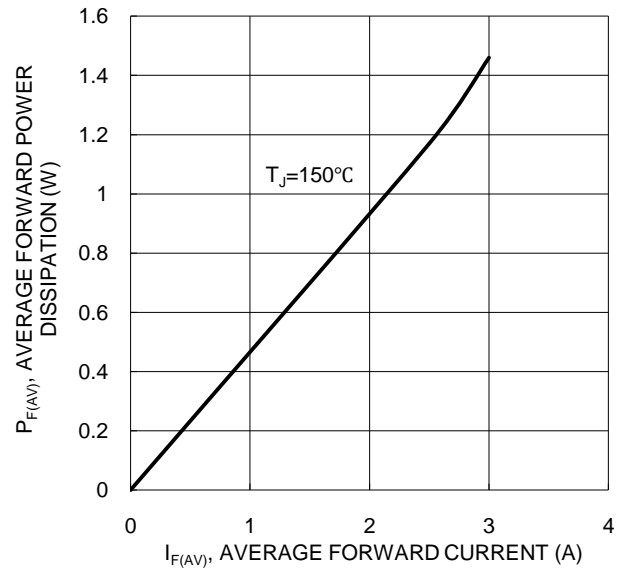


Figure 2. Forward Power Dissipation

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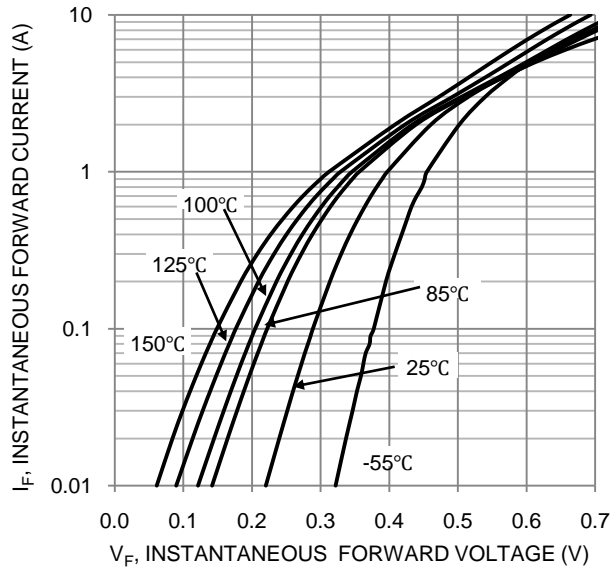


Figure 3. Typical Forward Characteristics

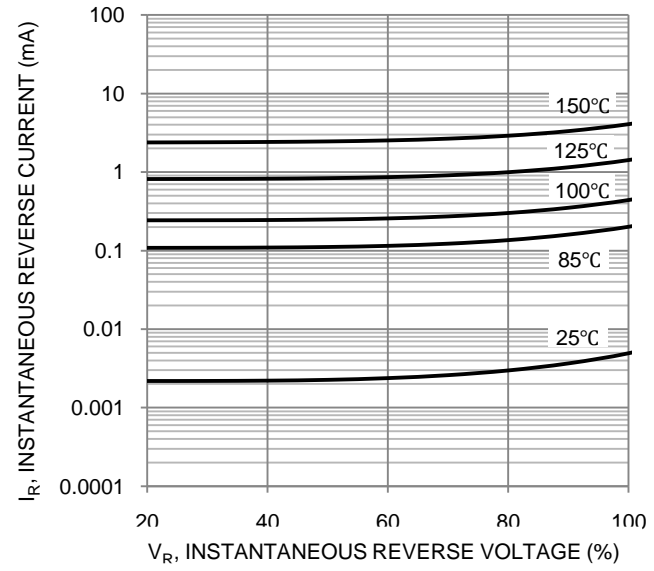


Figure 4. Typical Reverse Characteristics

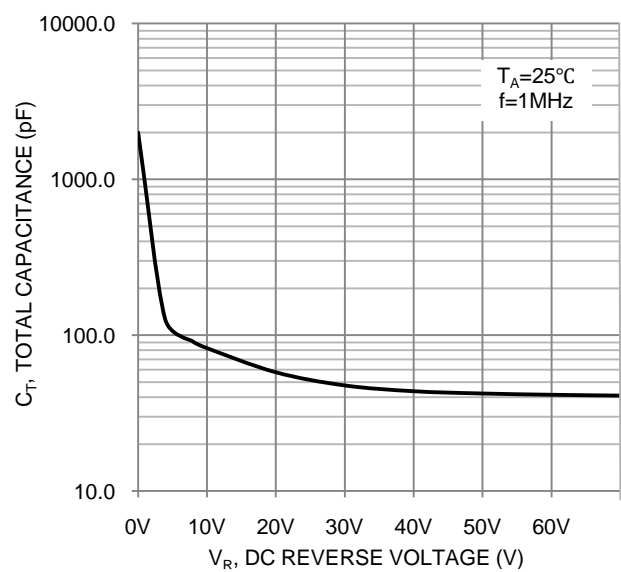
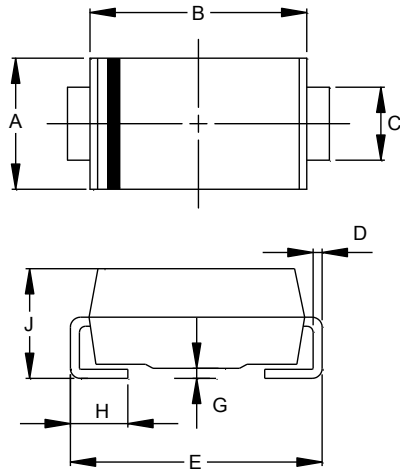


Figure 5. Total Capacitance vs. Reverse Voltage

**Package Outline Dimensions**

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

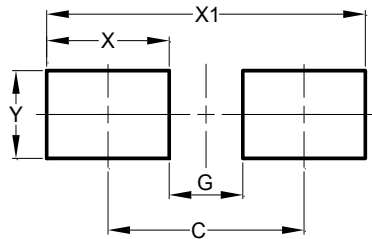


SMA		
Dim	Min	Max
A	2.29	2.92
B	4.00	4.60
C	1.27	1.63
D	0.15	0.31
E	4.80	5.59
G	0.05	0.20
H	0.76	1.52
J	1.96	2.40
All Dimensions in mm		

NEW PRODUCT

**Suggested Pad Layout**

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



Dimensions	Value (in mm)
C	4.00
G	1.50
X	2.50
X1	6.50
Y	1.70

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