

## 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

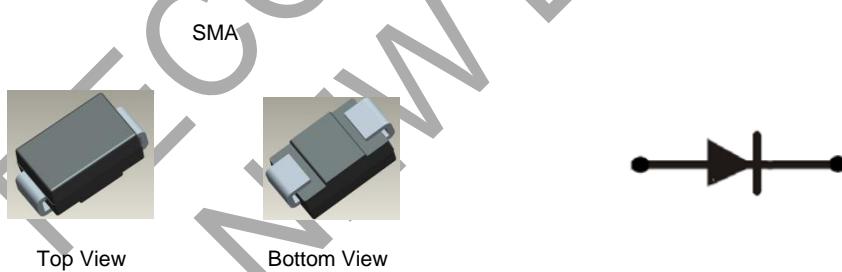
## Features and Benefits

- 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.
- Patented TrenchSBR® Technology
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](#) or your local Diodes representative.

<https://www.diodes.com/quality/product-definitions/>

## 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 ③
- Polarity: Cathode Band
- Weight: 0.064 grams (Approximate)



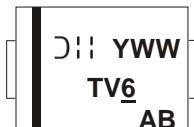
## Ordering Information (Note 4)

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

Notes:

1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

## Marking Information



TV6 = Product Type Marking Code  
YWW = Date Code Marking  
Y = Last Digit of Year (ex: 1 for 2021)  
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 capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$		
Working Peak Reverse Voltage	$V_{RWM}$	60	V
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	$^\circ\text{C}/\text{W}$
Typical Thermal Resistance Junction to Case (Note 5)	$R_{\theta JC}$	33	$^\circ\text{C}/\text{W}$
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 0.57	V	$I_F = 3\text{A}, T_J = +25^\circ\text{C}$ $I_F = 3\text{A}, T_J = +125^\circ\text{C}$
Leakage Current (Note 6)	$I_R$	—	—	0.1 10	mA	$V_R = 60\text{V}, T_J = +25^\circ\text{C}$ $V_R = 60\text{V}, T_J = +125^\circ\text{C}$

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

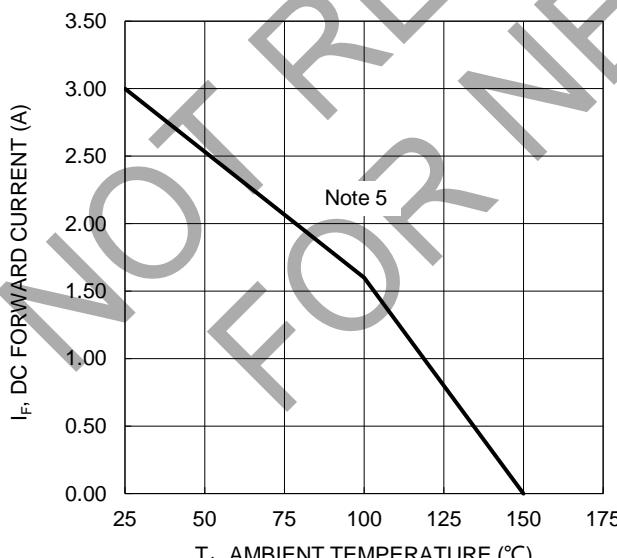


Figure 1. DC Forward Current Derating

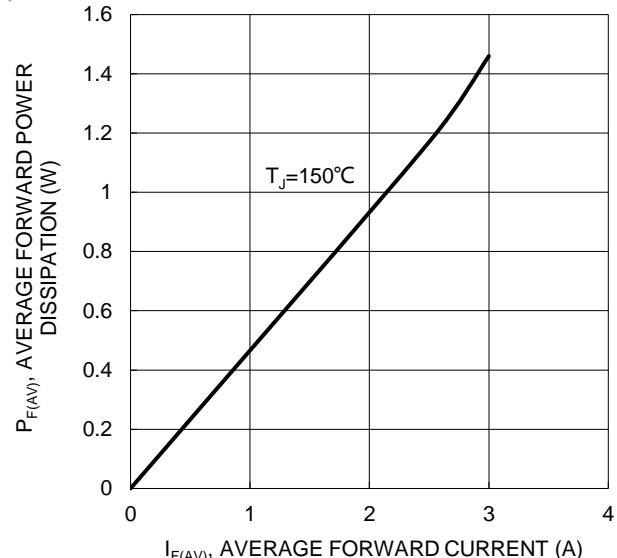
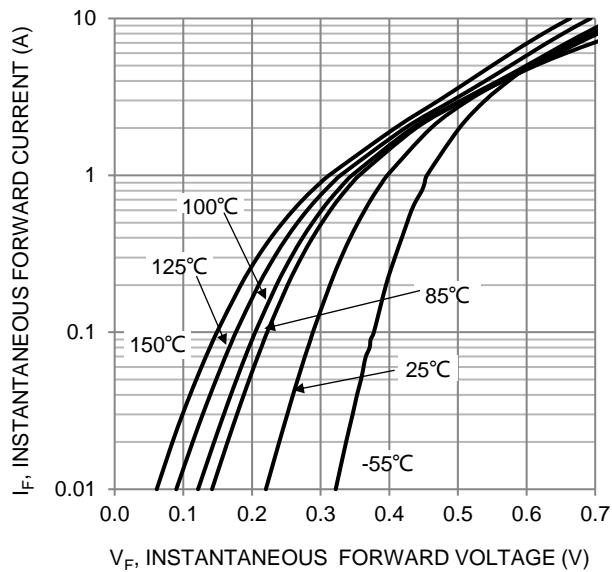
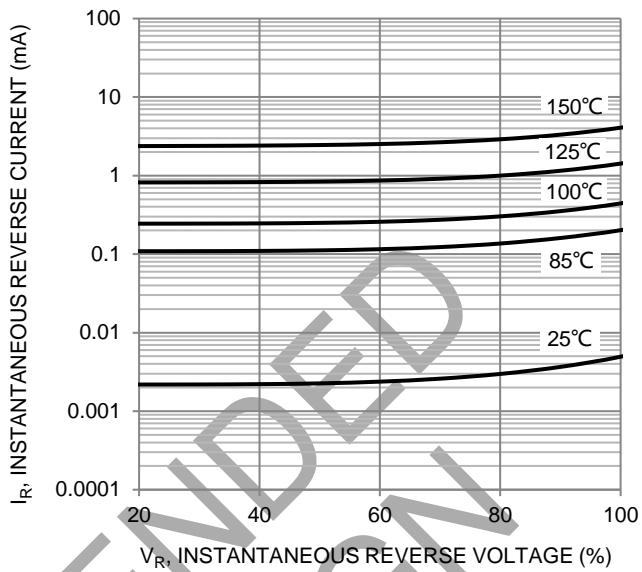


Figure 2. Forward Power Dissipation



V<sub>F</sub>, INSTANTANEOUS FORWARD VOLTAGE (V)

Figure 3. Typical Forward Characteristics



V<sub>R</sub>, INSTANTANEOUS REVERSE VOLTAGE (%)

Figure 4. Typical Reverse Characteristics

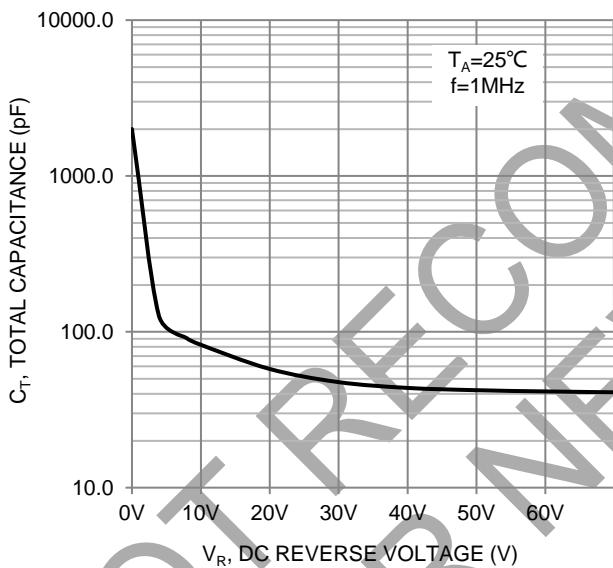
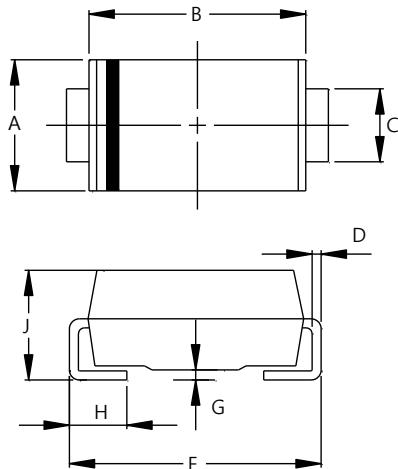


Figure 5. Total Capacitance vs. Reverse Voltage

## Package Outline Dimensions

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

**SMA**



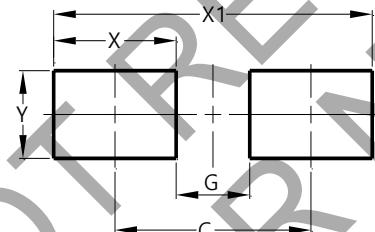
<b>SMA</b>		
Dim	Min	Max
<b>A</b>	2.29	2.92
<b>B</b>	4.00	4.60
<b>C</b>	1.27	1.63
<b>D</b>	0.15	0.31
<b>E</b>	4.80	5.59
<b>G</b>	0.05	0.20
<b>H</b>	0.76	1.52
<b>J</b>	1.96	2.40

All Dimensions in mm

## Suggested Pad Layout

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

**SMA**



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

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