

## Product Summary

V <sub>RRM</sub> (V)	I <sub>O(Total)</sub> (A)	V <sub>F</sub> MAX(V) @+25°C	I <sub>R</sub> MAX (mA) @+25°C
60	30	0.63	0.5

## Description and Applications

This Super Barrier Rectifier (SBR<sup>®</sup>) diode has been designed to meet the stringent requirements of automotive applications. It is ideally suited to use as :

- Polarity Protection Diode
- Re-Circulating Diode
- Switching Diode

## Features and Benefits

- Patented SBR technology provides a superior avalanche capability than schottky diodes ensuring more rugged and reliable end applications.
- 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
- **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/>
- **An Automotive-Compliant Part is Available Under Separate Datasheet ([SBR30A60CTBQ](#))**

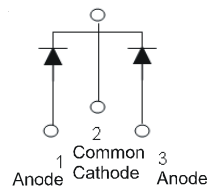
## Mechanical Data

- Case: TO263AB
- 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: See Below
- Weight: 1.6 grams (Approximate)

TO263AB (Standard)



Top View



Package Pin-Out Configuration

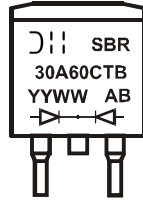
## Ordering Information (Note 4)

Part Number	Case	Packaging
SBR30A60CTB	TO263AB (Standard)	50 Pieces/Tube
SBR30A60CTB-G	TO263AB (Standard)	50 Pieces/Tube
SBR30A60CTB-13	TO263AB (Standard)	800/Tape & Reel
SBR30A60CTB-13-G	TO263AB (Standard)	800/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/>.

SBR is a registered trademark of Diodes Incorporated.

## Marking Information



SBR30A60CTB = Product Type Marking Code  
 AB = Foundry and Assembly Code  
 YYWW = Date Code Marking  
 YY = Last Two Digits of Year (ex: 21 = 2021)  
 WW = Week (01 to 53)

## Maximum Ratings (Per Leg) @T<sub>A</sub> = +25°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 <sub>RRM</sub>	60	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current (Per Leg) (Total)	I <sub>o</sub>	15 30	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	180	A

## Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance Junction to Case (Note 5)	R <sub>θJC</sub>	2	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop (Per Leg)	V <sub>F</sub>	—	0.56 —	0.63 0.60	V	I <sub>F</sub> = 15A, T <sub>J</sub> = +25°C I <sub>F</sub> = 15A, T <sub>J</sub> = +125°C
Leakage Current (Note 6)	I <sub>R</sub>	—	—	0.5 100	mA	V <sub>R</sub> = 60V, T <sub>J</sub> = +25°C V <sub>R</sub> = 60V, T <sub>J</sub> = +125°C

Notes: 5. Device mounted on Polyimide substrate, 125mm<sup>2</sup> copper pad, double-sided, PC boards.  
 6. Short duration pulse test used to minimize self-heating effect.

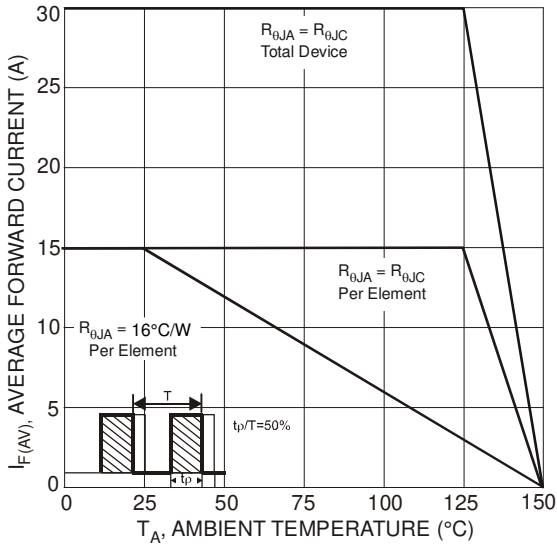


Fig. 1 Forward Current Derating Curve

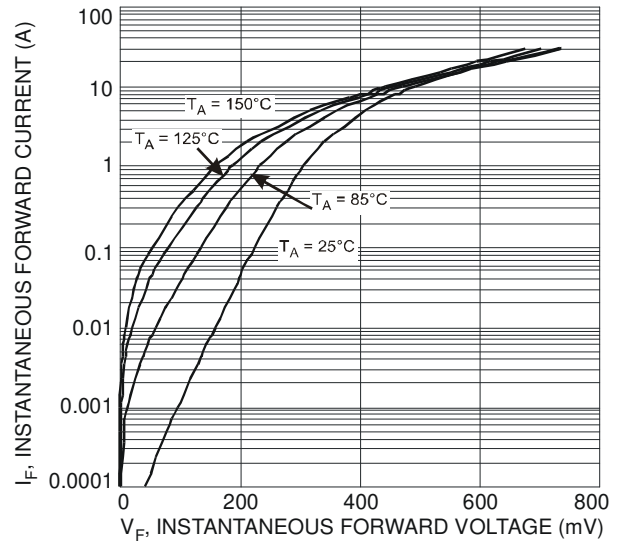


Fig. 2 Typical Forward Characteristics

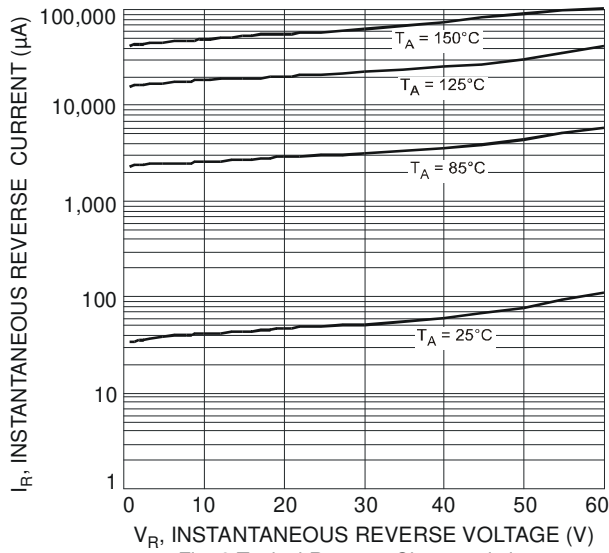
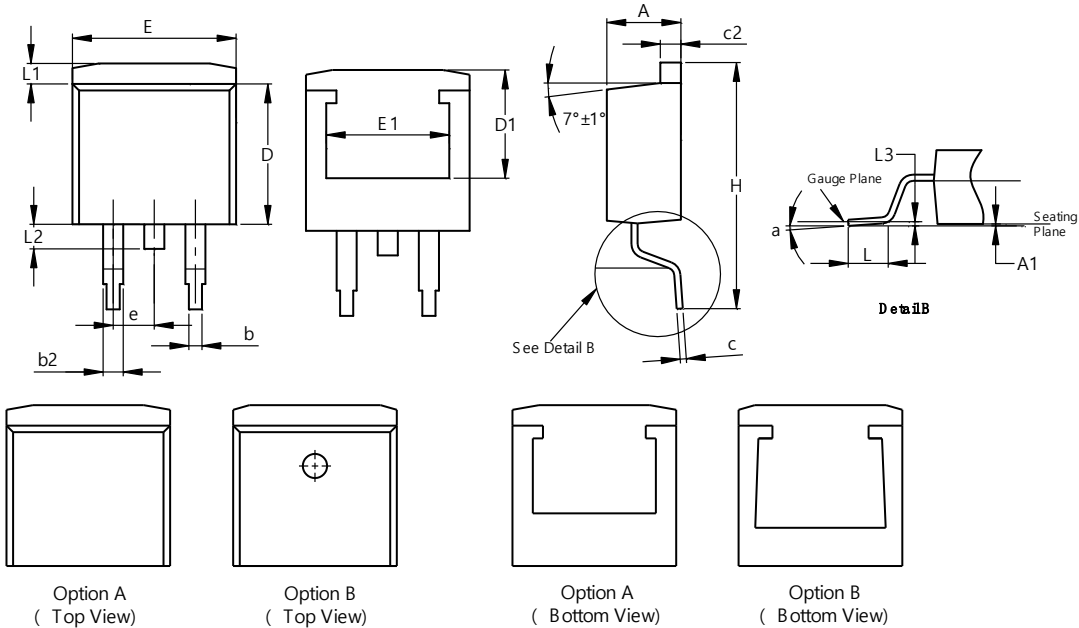


Fig. 3 Typical Reverse Characteristics

**Package Outline Dimensions**

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

**TO263AB (Standard)**

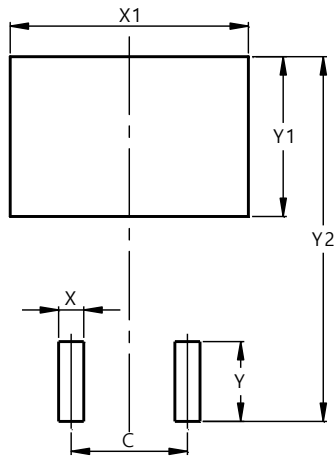


TO263AB (Standard)			
Dim	Min	Max	Typ
A	4.07	4.82	-
A1	0.00	0.25	-
b	0.51	0.99	-
b2	1.15	1.77	-
c	0.356	0.73	-
c2	1.143	1.65	-
D	8.39	9.65	-
D1	6.55	7.80	-
e	2.54 TYP		
E	9.66	10.66	-
E1	6.23	8.23	-
H	14.61	15.87	-
L	1.78	2.79	-
L1	-	1.67	-
L2	-	1.77	-
L3	-	-	0.254
a	0°	8°	-
<b>All Dimensions in mm</b>			

**Suggested Pad Layout**

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

**TO263AB (Standard)**



Dimensions	Value (in mm)
C	5.08
X	1.10
X1	10.41
Y	3.50
Y1	7.01
Y2	15.99

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