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## Product Summary (Per Leg)

$V_{RRM}$ (V)	$I_O$ (A)	$V_F$ Max (V)	$I_R$ Max (mA)
60	10	0.6	0.15

## Description

Packaged in the robust industry standard TO220AB package, the SBRT20M60CT provides low  $V_F$  and excellent reverse leakage stability at high temperatures.

## Applications

It is ideal for use as a rectifier, freewheel diode or blocking diode in:

- DC-DC Converters
- AC-DC Adaptors

## Features and Benefits

- Reduced 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

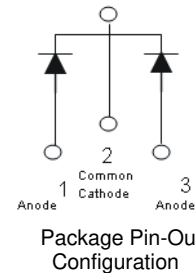
- Case: TO220AB
- Case Material: Molded Plastic, "Green" Molding Compound.  
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish. Solderable per MIL-STD-202, Method 208 Ⓔ3
- Weight: 1.85 grams (Approximate)



TO220AB  
Top View



TO220AB  
Bottom View

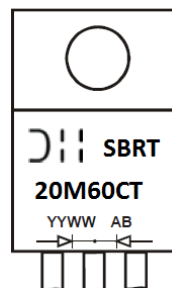


## Ordering Information (Note 4)

Part Number	Case	Packaging
SBRT20M60CT	TO220AB	50 Pieces/Tube

- 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



SBRT20M60CT = Product Type Marking Code  
AB = Foundry and Assembly Code  
YYWW = Date Code Marking  
YY = Last Two Digits of Year (ex: 15 = 2015)  
WW = Week (01 to 53)

**Maximum Ratings** (@T<sub>A</sub> = +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 <sub>RRM</sub> V <sub>RWM</sub> V <sub>RM</sub>	60	V
Average Rectified Output Current (Per Leg) (Total)	I <sub>O</sub>	10 20	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (Per Leg)	I <sub>FSM</sub>	210	A

**Thermal Characteristics** (Per Leg)

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 5)	R <sub>θJC</sub>	1	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 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	V <sub>F</sub>	—	0.52 0.50	0.6 0.57	V	I <sub>F</sub> = 10A, T <sub>J</sub> = +25°C I <sub>F</sub> = 10A, T <sub>J</sub> = +125°C
Leakage Current (Note 6)	I <sub>R</sub>	—	20 —	150 40	μA 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. With 50mm\*50mm\*23mm Al heatsink.  
6. Short duration pulse test used to minimize self-heating effect.

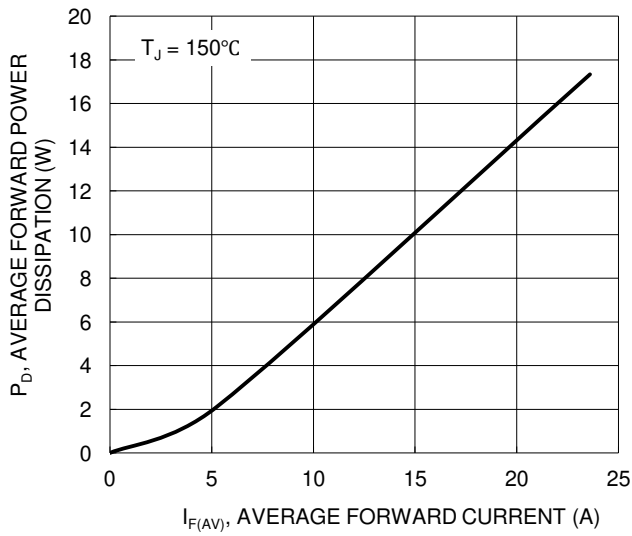


Figure 1. Forward Power Dissipation

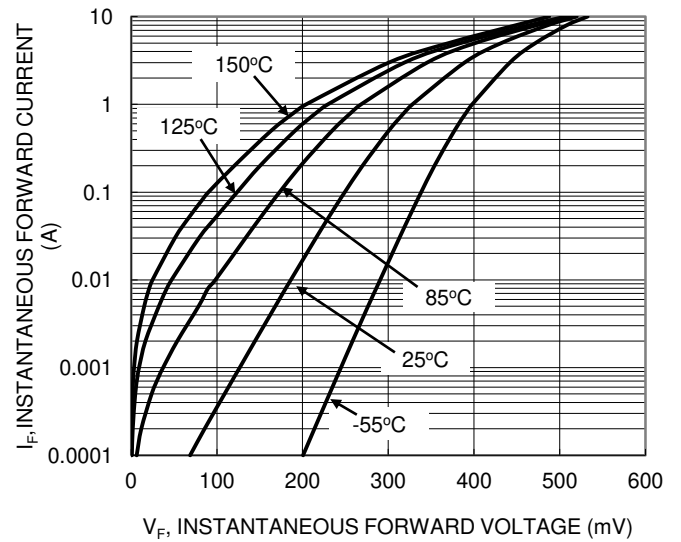


Figure 2. Typical Forward Characteristics

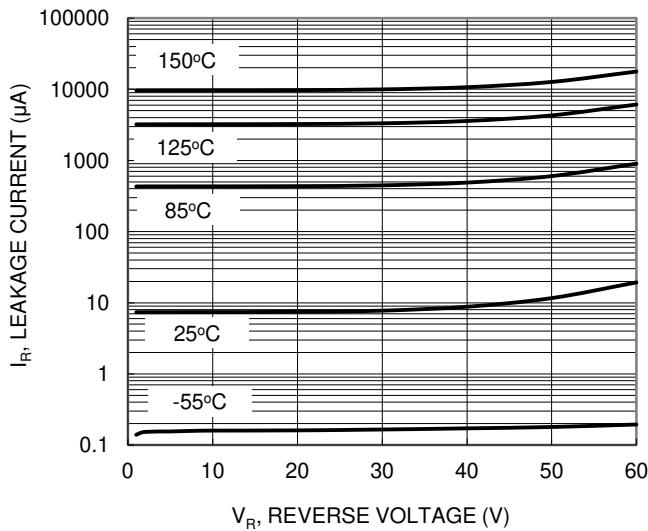


Figure 3. Typical Reverse Characteristics

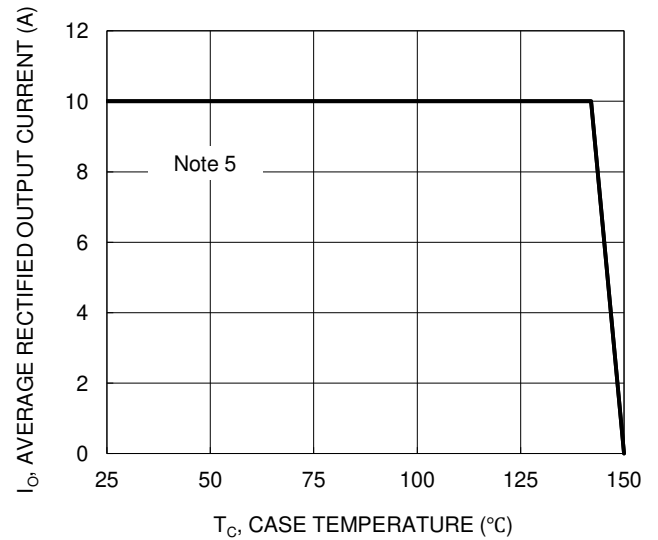


Figure 4. DC Forward Current Derating

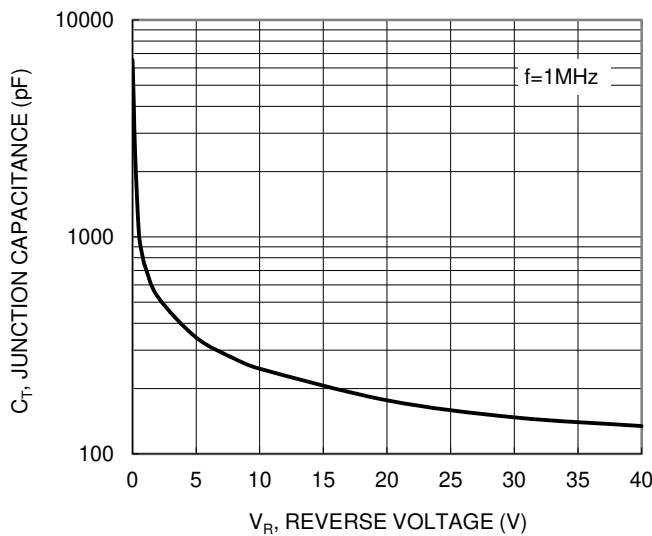


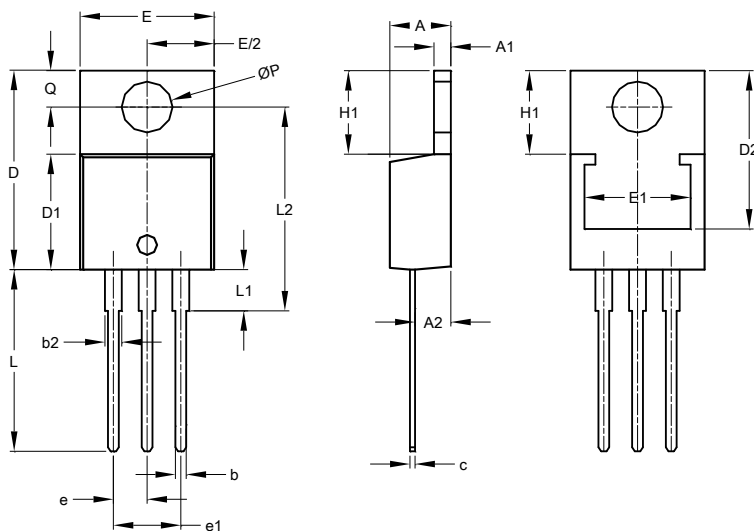
Figure 5. Typical Junction Capacitance



## Package Outline Dimensions

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

**TO220AB**



TO220AB			
Dim	Min	Max	Typ
A	3.56	4.82	—
A1	0.51	1.39	—
A2	2.04	2.92	—
b	0.39	1.01	0.81
b2	1.15	1.77	1.24
c	0.356	0.61	—
D	14.22	16.51	—
D1	8.39	9.01	—
D2	11.45	12.87	—
e	—	—	2.54
e1	—	—	5.08
E	9.66	10.66	—
E1	6.86	8.89	—
H1	5.85	6.85	—
L	12.70	14.73	—
L1	—	6.35	—
L2	15.80	16.20	16.00
P	3.54	4.08	—
Q	2.54	3.42	—
All Dimensions in mm			

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