



### SBRT60U50CT

#### 60A TrenchSBR TRENCH SUPER BARRIER RECTIFIER

### Product Summary (Per Leg)

V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	V <sub>F (MAX)</sub> (V) @ +25°C	I <sub>R (MAX)</sub> (mA) @ +25°C
50	30	0.52	0.7

# Features and Benefits

- 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)

# **Description and Applications**

Packaged in the robust industry-standard TO-220AB package, the SBRT60U50CT provides very low  $V_{\text{F}}$  and excellent reverse-leakage stability at high temperatures. It is ideal for use as a rectifier, freewheel diode or blocking diode in:

- DC-DC Converters
- AC-DC Adaptors

### **Mechanical Data**

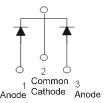
- Case: TO-220AB
- Case Material: Molded Plastic, "Green" Molding Compound.
   UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Polarity: See Below
- Weight: TO-220AB 1.85 grams (Approximate)



TO-220AB Top View



TO-220AB Bottom View



Package Pin-Out Configuration

### Ordering Information (Note 4)

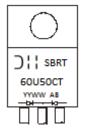
Part Number	Case	Packaging	
SBRT60U50CT	TO-220AB	50 Pieces/Tube	

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 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**

#### TO-220AB



SBRT60U50CT = Product Type Marking Code AB = Foundry and Assembly Code YYWW = Date Code Marking YY = Last Two Digits of Year (ex: 14 = 2014) WW = Week (01 - 53)



# **Maximum Ratings** (@ $T_A = +25^{\circ}C$ , 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>	50	V
Average Rectified Output Current	(Per Leg) (Total)	lo	30 60	Α
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	(Per Leg)	I <sub>FSM</sub>	350	А

### **Thermal Characteristics (Per Leg)**

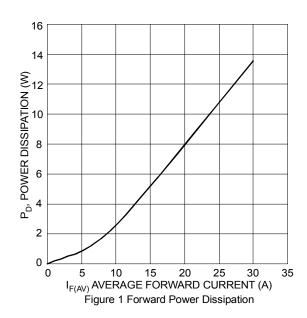
Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Note 5) Package = TO-220AB	R <sub>θJC</sub>	1	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

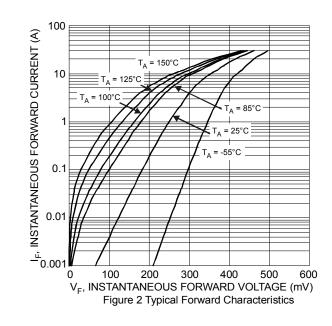
## Electrical Characteristics (Per Leg) (@TA = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
	V <sub>F</sub>	_	0.39	0.45	V	I <sub>F</sub> = 15A, T <sub>J</sub> = +25°C
Forward Valtage Drag (Note 6)		_	0.33	0.39		I <sub>F</sub> = 15A, T <sub>J</sub> = +125°C
Forward Voltage Drop (Note 6)		_	0.46	0.52		I <sub>F</sub> = 30A, T <sub>J</sub> = +25°C
		_	0.44	0.50		I <sub>F</sub> = 30A, T <sub>J</sub> = +125°C
Leakage Current (Note 6)	I <sub>R</sub>	_	0.20	0.70	mΔ	V <sub>R</sub> = 50V, T <sub>J</sub> = +25°C
Leakage Current (Note 0)		_	_	100		V <sub>R</sub> = 50V, T <sub>J</sub> = +125°C

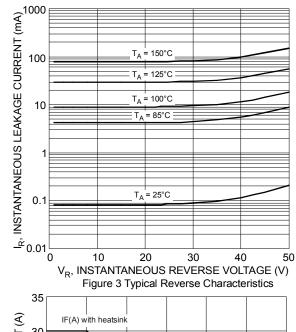
Notes:

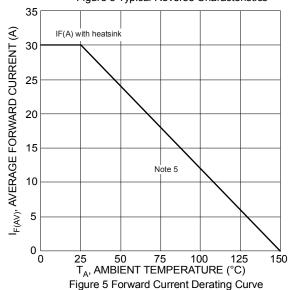
- 5. Test with additional HK1 (37mm x 55mm x 15mm).
- 6. Short duration pulse test used to minimize self-heating effect.

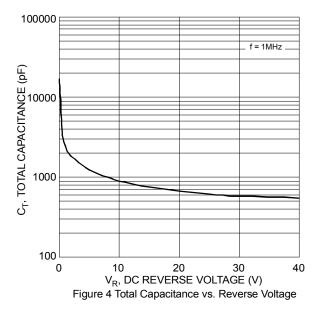








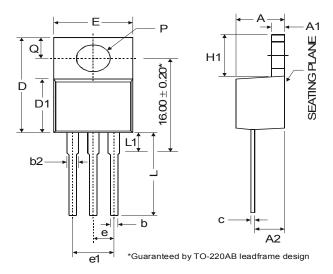






# **Package Outline Dimensions**

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



TO-220AB					
Dim	Min	Тур	Max		
Α	3.56	•	4.82		
<b>A</b> 1	0.51	•	1.39		
A2	2.04	ı	2.92		
b	0.39	0.81	1.01		
b2	1.15	1.24	1.77		
С	0.356	•	0.61		
D	14.22	ı	16.51		
D1	8.39	•	9.01		
е	2.54				
e1	5.08				
Ε	9.66	•	10.66		
H1	5.85	-	6.85		
L	12.70	•	14.73		
L1	-	-	6.35		
Р	3.54	-	4.08		
Q	2.54	-	3.42		
All Dimensions in mm					



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