



### **SBRT10U60D1**

# 10A TrenchSBR TRENCH SUPER BARRIER RECTIFIER

### **Product Summary**

V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	V <sub>F max</sub> (V)	I <sub>R max</sub> (mA)
60	10	0.52	0.4

#### **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.
- Moisture Sensitivity: Level 1 per J-STD-020
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)

### Description

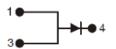
Packaged in the robust industry-standard TO252 (DPAK) package, the SBRT10U60D1 provides very low  $V_{\text{F}}$  and excellent reverse leakage stability at high temperatures.

### **Mechanical Data**

- Case: TO252 (DPAK)
- Case Material: Molded Plastic, "Green" Molding Compound.
   UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Weight: 0.4 grams (Approximate)



Top View



Package Pin-Out Configuration

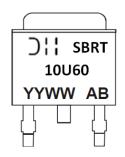
### Ordering Information (Note 4)

Part Number	Case	Packaging
SBRT10U60D1-13	TO252 (DPAK)	2500 pieces/reel

Notes:

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



SBRT10U60 = Product Type Marking Code AB = Foundry and Assembly Code YYWW = Date Code Marking YY = Last Two Digits of Year (ex: 16 = 2016) 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 capacitive 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	٧
Average Rectified Output Current	Io	10	Α
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	140	А

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

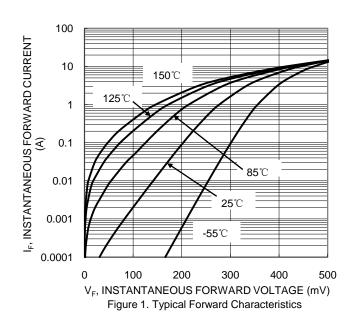
Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	18	°C/W
Typical Thermal Resistance Junction to Case (Note 5)	$R_{\theta JC}$	2	°C/W
Operating and Storage Temperature Range	T <sub>J,</sub> T <sub>STG</sub>	-55 to +150	°C

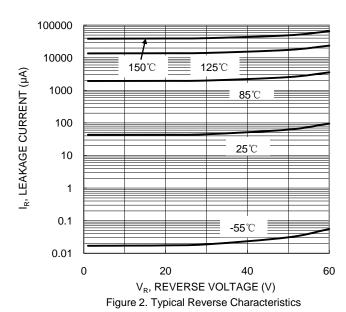
# Electrical Characteristics (Per Leg) (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Forward Voltage Drop	VF	_	0.44	0.52	· · · · · · · · · · · · · · · · · · ·	$I_F = 10A, T_J = +25^{\circ}C$
Forward Voltage Drop		_	_	0.50		I <sub>F</sub> = 10A, T <sub>J</sub> = +125°C
Leakage Current (Note 6)	-	_	0.08	0.4	mA	V <sub>R</sub> = 60V, T <sub>J</sub> = +25°C
	IR	_	_	70	mA	$V_R = 60V, T_J = +125$ °C

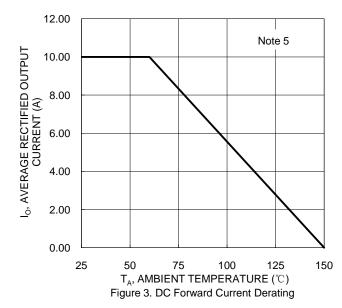
Notes:

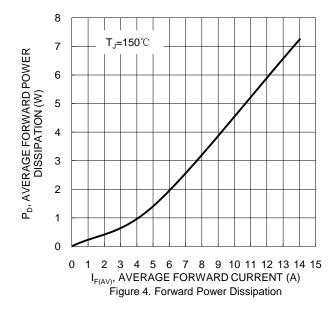
- 5. 2inch\*2inch Al board, minimum recommended pad layout as shown in Diodes Incorporated's package outline PDFs, which can be found on our website at http://www.diodes.com/package-outlines.html.
- 6. Short duration pulse test used to minimize self-heating effect.

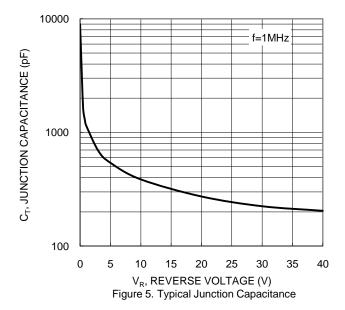










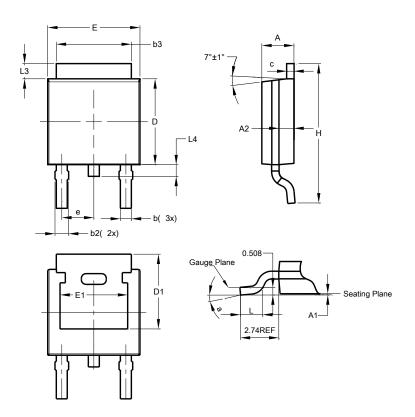




### **Package Outline Dimensions**

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

#### TO252 (DPAK)

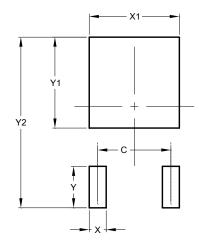


TOOSO (DDAI()					
TO252 (DPAK)					
Dim	Min	Max	Тур		
Α	2.19	2.39	2.29		
A1	0.00	0.13	0.08		
A2	0.97	1.17	1.07		
b	0.64	0.88	0.783		
b2	0.76	1.14	0.95		
b3	5.21	5.46	5.33		
С	0.45	0.58	0.531		
D	6.00	6.20	6.10		
D1	5.21	-	-		
е	-	-	2.286		
Е	6.45	6.70	6.58		
E1	4.32	-	-		
Н	9.40	10.41	9.91		
L	1.40	1.78	1.59		
L3	0.88	1.27	1.08		
L4	0.64	1.02	0.83		
а	0°	10°	-		
All Dimensions in mm					

## **Suggested Pad Layout**

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

#### TO252 (DPAK)



Dimensions	Value (in mm)
С	4.572
Х	1.060
X1	5.632
Υ	2.600
Y1	5.700
Y2	10.700



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