

**OBSOLETE – PART DISCONTINUED**

### 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
100	5	0.78	0.18

### Description and Applications

Packaged in the robust industry-standard TO252 (DPAK) package, the SBRT10A100CTL provides very low V<sub>F</sub> and excellent reverse leakage stability at high temperatures.

### 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
- Patented Super Barrier Rectifier SBR<sup>®</sup> 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-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](https://www.diodes.com/quality/product-definitions/) or your local Diodes representative.**  
<https://www.diodes.com/quality/product-definitions/>

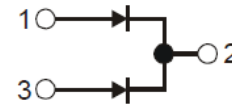
### Mechanical Data

- Package: TO252
- Package 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
- Polarity: See Below
- Weight: 0.33 grams (Approximate)

TO252 (DPAK)



Top View



Package Pin-Out Configuration

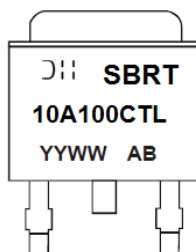
### Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
SBRT10A100CTL-13	TO252 (DPAK)	2,500	Tape & Reel, 13 inch

- 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

TO252 (DPAK)



- ⌋⌋ = Manufacturer's Marking
- SBRT10A100CTL = Product Type Marking Code
- AB = Foundry and Assembly Code
- YYWW = Date Code Marking
- YY = Last Two Digits of Year (ex: 23 = 2023)
- WW = Week (01 to 53)

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**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	V <sub>RRM</sub>	100	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current (Per Leg)	I <sub>o</sub>	5	A
(Total)		10	
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine Wave Superimposed on Rated Load (Per Leg)	I <sub>FSM</sub>	85	A

**Thermal Characteristics (Per Leg)**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Note 5)	R <sub>θJC</sub>	4	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 5)	R <sub>θJA</sub>	23	°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 (Note 6)	V <sub>F</sub>	—	0.56	0.64	V	I <sub>F</sub> = 3A, T <sub>J</sub> = +25°C
		—	—	0.78		I <sub>F</sub> = 5A, T <sub>J</sub> = +25°C
		—	—	0.63		I <sub>F</sub> = 3A, T <sub>J</sub> = +125°C
Leakage Current (Note 6)	I <sub>R</sub>	—	25	180	μA	V <sub>R</sub> = 100V, T <sub>J</sub> = +25°C
		—	—	15		mA

Notes: 5. Device mounted on aluminum 2 inch sq. substrate board, 2oz.  
6. Short duration pulse test used to minimize self-heating effect.

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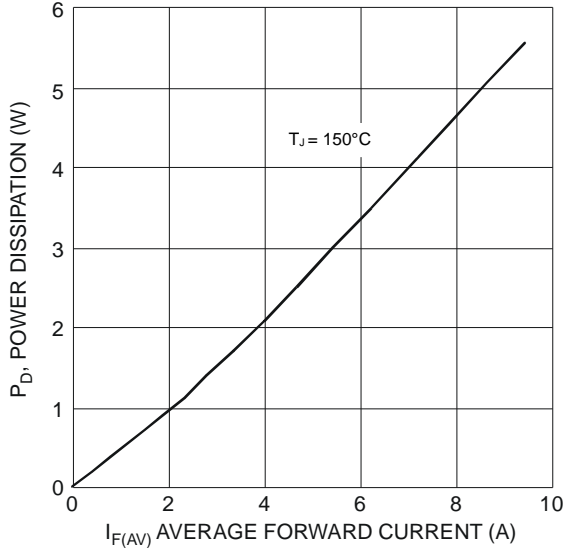


Figure 1 Forward Power Dissipation

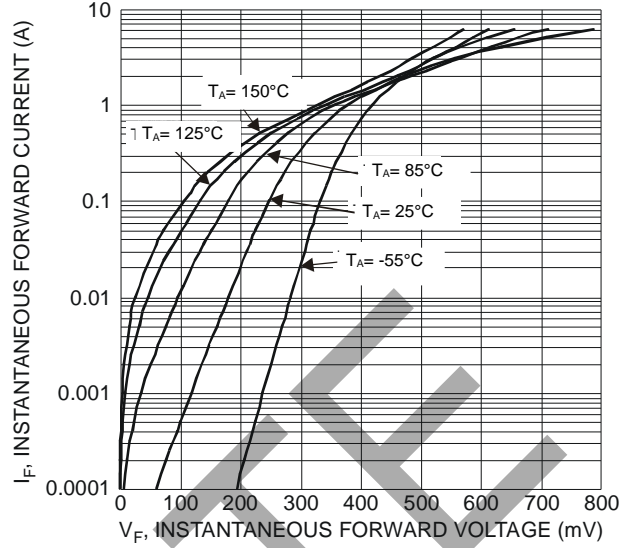


Figure 2 Typical Forward Characteristics

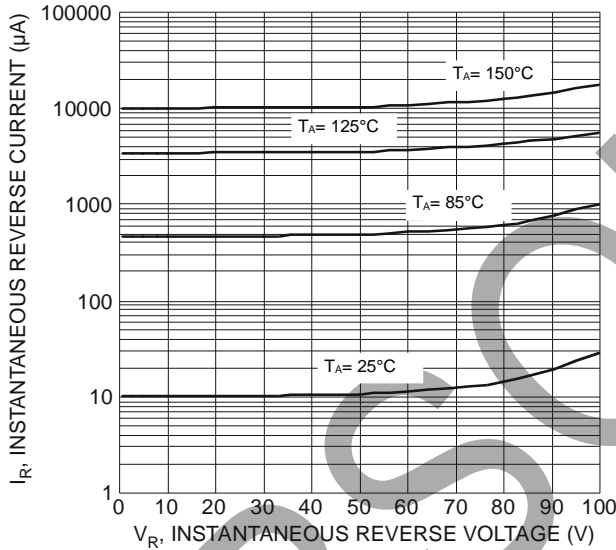


Figure 3 Typical Reverse Characteristics

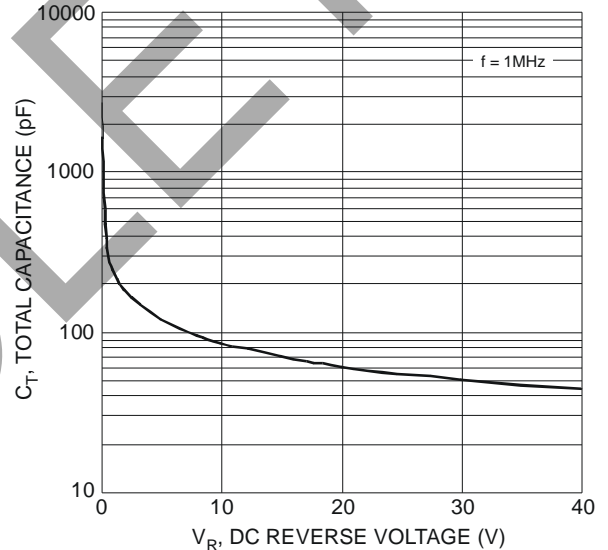


Figure 4 Total Capacitance vs. Reverse Voltage

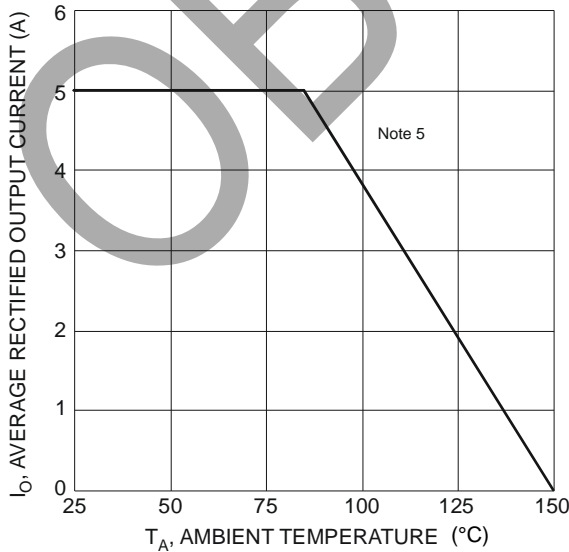


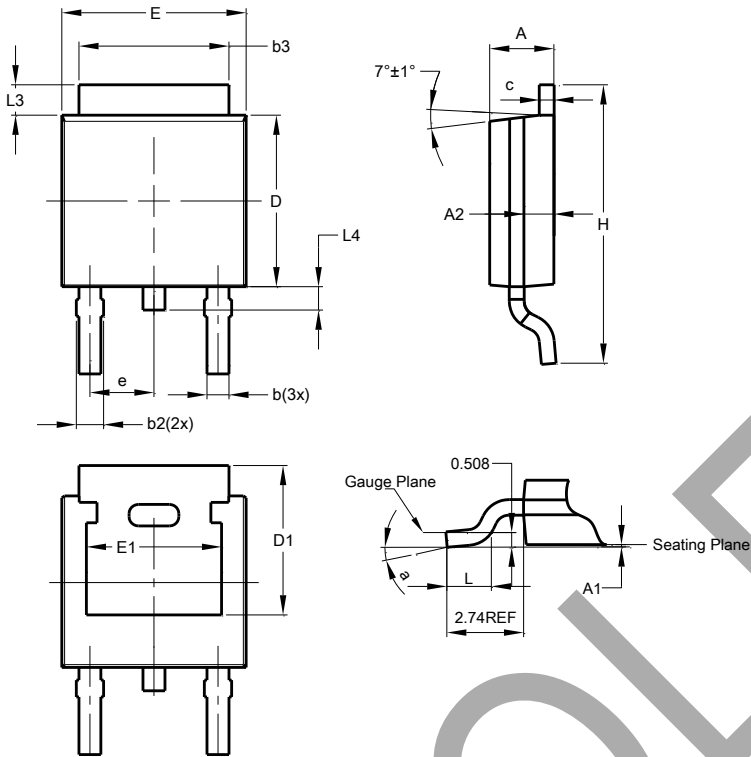
Figure 5 Forward Current Derating Curve

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**Package Outline Dimensions**

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

**TO252 (DPAK)**

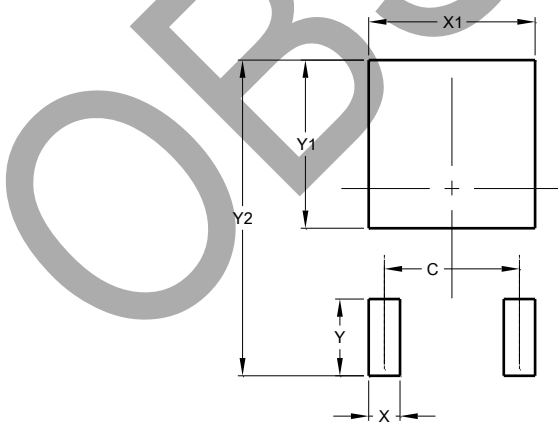


TO252 (DPAK)			
Dim	Min	Max	Typ
A	2.19	2.39	2.29
A1	0.00	0.13	0.08
A2	0.97	1.17	1.07
b	0.64	0.88	0.783
b2	0.76	1.14	0.95
b3	5.21	5.50	5.33
c	0.45	0.58	0.531
D	6.00	6.20	6.10
D1	5.21	--	--
e	2.286 BSC		
E	6.45	6.70	6.58
E1	4.32	--	--
H	9.40	10.41	9.91
L	1.40	1.78	1.59
L3	0.88	1.27	1.08
L4	0.64	1.02	0.83
a	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)
C	4.572
X	1.060
X1	5.632
Y	2.600
Y1	5.700
Y2	10.700

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