



**THE DATASHEET OF  
SBR1040CTB-13**



## Features

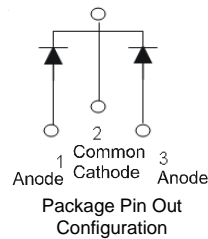
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **Also Available in Green Molding Compound (Note 2)**

## Mechanical Data

- Case: D<sup>2</sup>PAK
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 **(e3)**
- Weight: 1.6 grams (approximate)



D<sup>2</sup>PAK

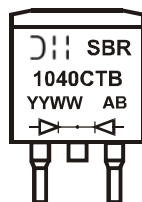


## Ordering Information (Notes 2 & 3)

Part Number	Case	Packaging
SBR1040CTB	D <sup>2</sup> Pak (TO-263)	50 pieces/tube
SBR1040CTB-G	D <sup>2</sup> Pak (TO-263)	50 pieces/tube
SBR1040CTB-13	D <sup>2</sup> Pak (TO-263)	800 / Tape & Reel
SBR1040CTB-13-G	D <sup>2</sup> Pak (TO-263)	800 / Tape & Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes
  2. For Green Molding Compound version part numbers, add "-G" suffix to part number above. Examples: SBR1040CTB-G.
  3. For packaging details, go to our website at <http://www.diodes.com>.

## Marking Information



SBR1040CTB = Product Type Marking Code  
 AB = Foundry and Assembly Code  
 YYWW = Date Code Marking  
 YY = Last two digits of year (ex: 08 = 2008)  
 WW = Week (01 - 53)

### Maximum Ratings (Per Leg) @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	V <sub>RRM</sub>	40	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current	I <sub>O</sub>	5	A
Per Leg		10	
Total			
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	85	A

### Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance (Note 4)	R <sub>θJC</sub>	6	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +175	°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>	-	0.53	0.60	V	I <sub>F</sub> = 5A, T <sub>J</sub> = 25°C
Leakage Current (Note 5)	I <sub>R</sub>	-	-	0.5	mA	V <sub>R</sub> = 40V, T <sub>J</sub> = 25°C

Notes: 4. Polyimide PCB, 2oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheet/ap2001.pdf>  
5. Short duration pulse test used to minimize self-heating effect.

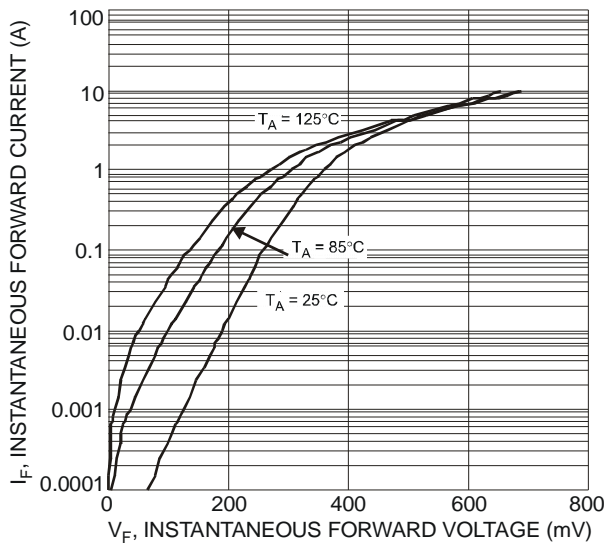


Fig. 1 Typical Forward Characteristics

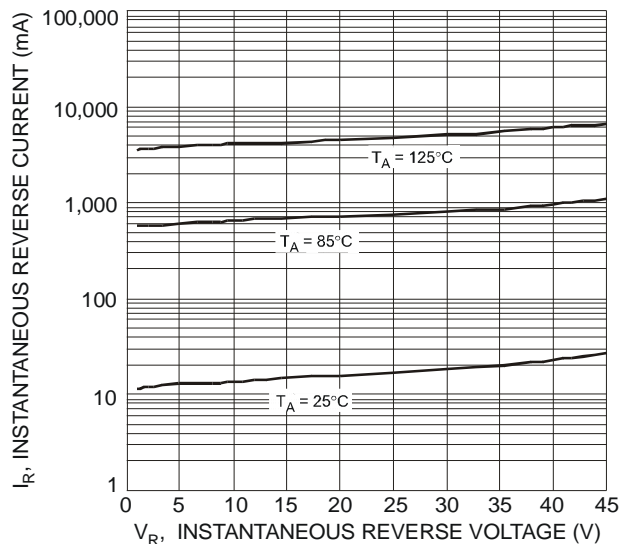


Fig. 2 Typical Reverse Characteristics

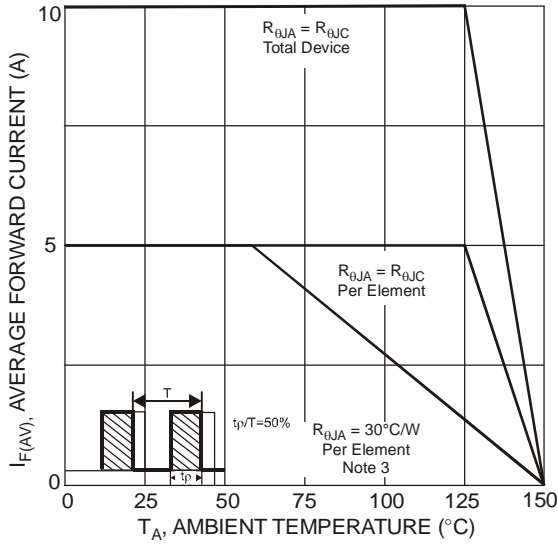
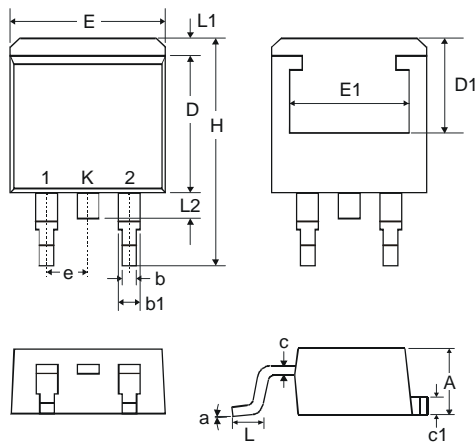


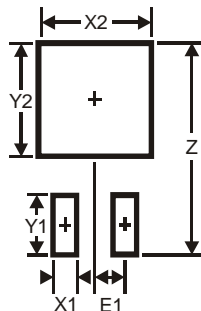
Fig. 3 Forward Current Derating Curve

**Package Outline Dimensions**



D <sup>2</sup> PAK		
Dim	Min	Max
A	4.07	4.82
b	0.51	0.99
b1	1.15	1.77
c	0.356	0.58
c1	1.143	1.65
D	8.39	9.65
D1	6.55	—
E	9.66	10.66
E1	6.23	—
e	2.54 Typ	
H	14.61	15.87
L	1.78	2.79
L1	—	1.67
L2	—	1.77
a	0°	8°
All Dimensions in mm		

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	16.9
X1	1.1
X2	10.8
Y1	3.5
Y2	7.01
E1	2.5

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