30A SBR®
SUPER BARRIER RECTIFIER

NEW PRODUCT

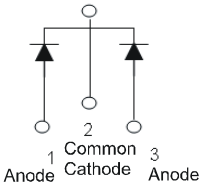
Features

- Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150ºC Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: TO263 (D^2Pak)
- 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)

Top View



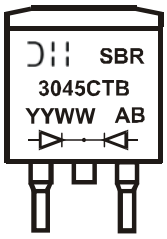
Package Pin-Out Configuration

Ordering Information (Note 2)

Part Number	Qualification	Case	Packaging
SBR3045CTB	Commercial	TO263	50 pieces/tube
SBR3045CTB-13	Commercial	TO263	800/Tape & Reel
SBR3045CTBQ-13	Automotive	TO263	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 packaging details, go to our website at http://www.diodes.com.

Marking Information



SBR3045CTB = 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)

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Maximum Ratings @T_A = 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_{RRM} V_{RWM} V_{RM}	45	V
Average Rectified Output Current @ T_C = 150ºC	Per Leg Total	I_O	15 30	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load		I_{FSM}	180	A
Repetitive Peak Avalanche Power (1μs, 25ºC)		P_{ARM}	7000	W

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	2	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	ºC

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop (per leg)	V_F	-	-	0.70	V	I_F = 15A, T_J = 25ºC
		-	-	0.66		I_F = 15A, T_J = 125ºC
Leakage Current (Note 3)	I_R	-	-	0.5	mA	V_R = 45V, T_J = 25ºC
		-	-	80		V_R = 45V, T_J = 125ºC

Notes: 3. Short duration pulse test used to minimize self-heating effect.

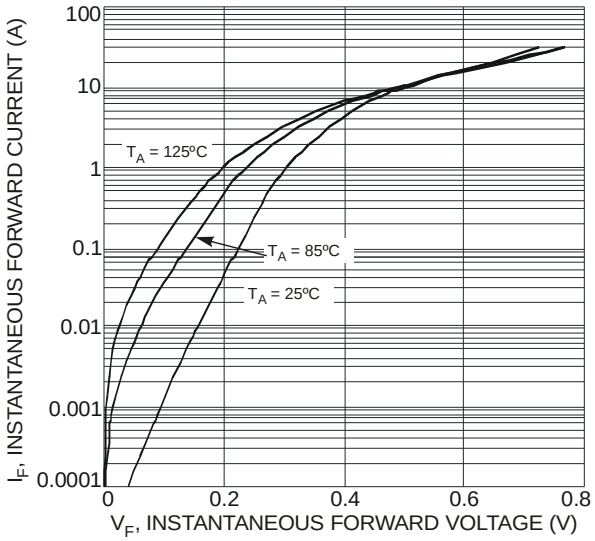

Fig. 1 Typical Forward Characteristics, Per Element

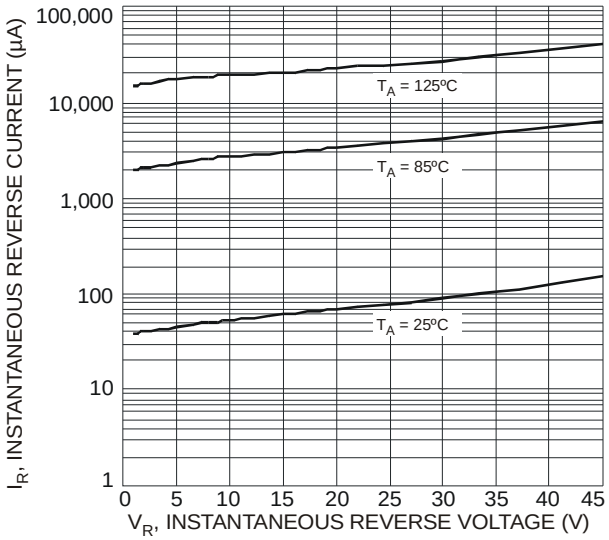

Fig. 2 Typical Reverse Characteristics, Per Element

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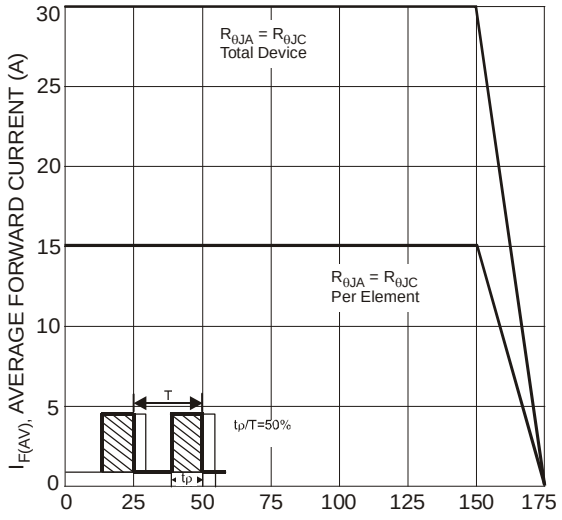


Fig. 3 Forward Current Derating Curve

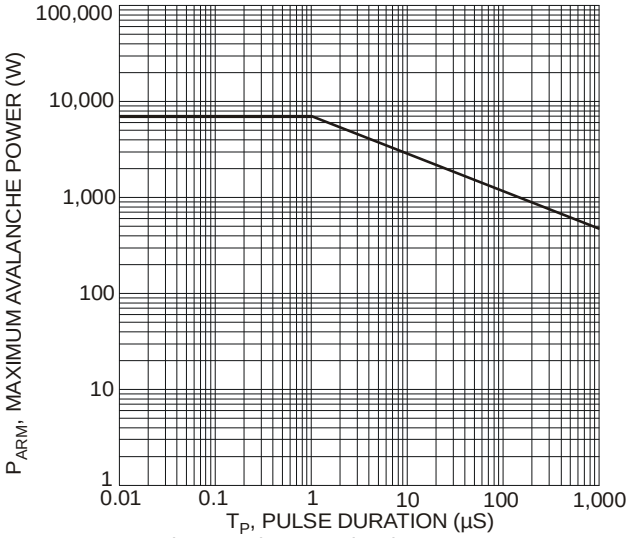
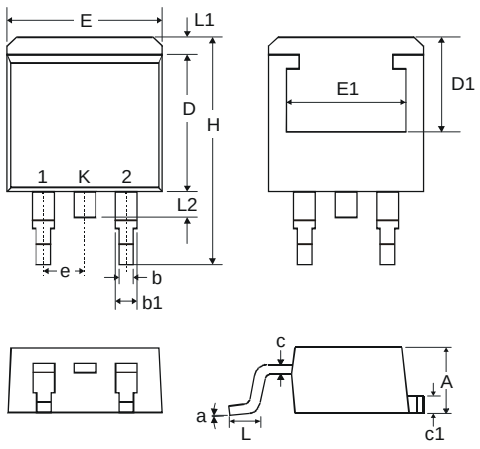


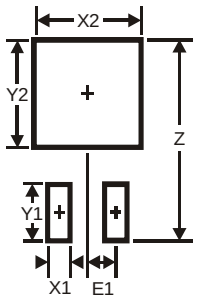
Fig. 4 Maximum Avalanche Power Curve

Package Outline Dimensions



TO263		
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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