

Product Summary

V_R (V)	I_O (A)	V_F Max (V) @ +25°C	I_R Max (mA) @ +25°C
45	15 (Per leg) 30 (Total)	0.7	0.5

Applications

- Flywheel Diodes
- Blocking Diodes
- AC-DC
- DC-DC



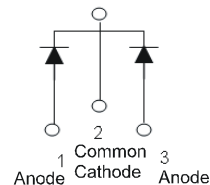
Top View

Features and Benefits

- Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier SBR® Technology
- Soft, Fast Switching Capability
- +150°C Operating Junction Temperature
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **PPAP Capable (Note 4)**

Mechanical Data

- Case: TO263AB (D2PAK)
- Case Material: Molded Plastic, "Green" Molding Compound.
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Annealed over Copper Leadframe
Solderable per MIL-STD-202, Method 208 @3
- Polarity: See Below
- Weight: 1.6 grams (Approximate)

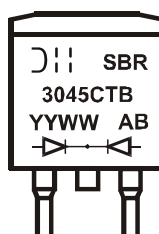

 Package Pin-Out
Configuration

Ordering Information (Note 5)

Part Number	Qualification	Case	Packaging
SBR3045CTBQ-13	Automotive	TO263AB (D2PAK)	800/Tape & Reel

- 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. Automotive products are AEC-Q101 qualified and are PPAP capable. Refer to http://www.diodes.com/quality/product_compliance_definitions/.
 5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information



SBR3045CTB = 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- 53)

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 = +150°C	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, +25°C)	P _{ARM}	7,000	W

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Per Leg)	R _{θJC}	2	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

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 = +25°C
		—	—	0.66		I _F = 15A, T _J = +125°C
Leakage Current (Note 6)	I _R	—	—	0.5	mA	V _R = 45V, T _J = +25°C
		—	—	80		V _R = 45V, T _J = +125°C

Note: 6. Short duration pulse test used to minimize self-heating effect.

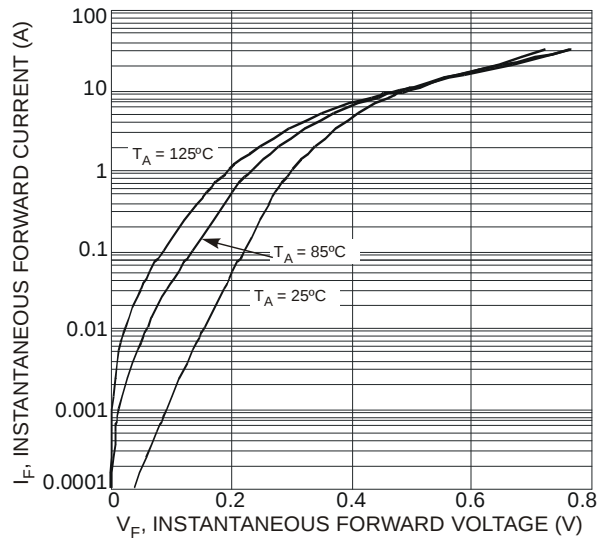


Fig. 1 Typical Forward Characteristics, Per Element

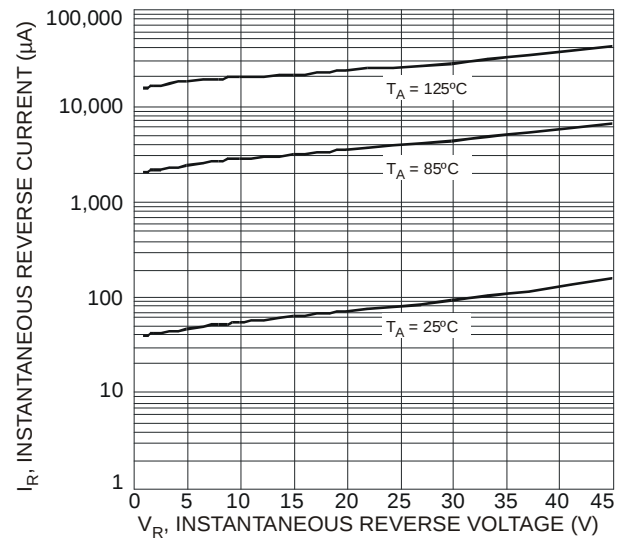


Fig. 2 Typical Reverse Characteristics, Per Element

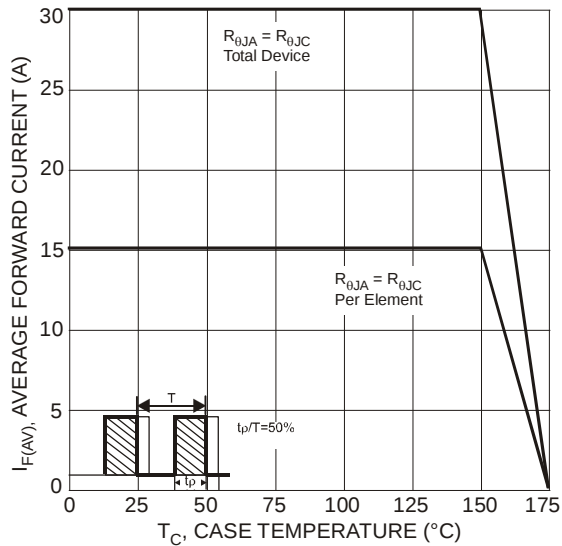


Fig. 3 Forward Current Derating Curve

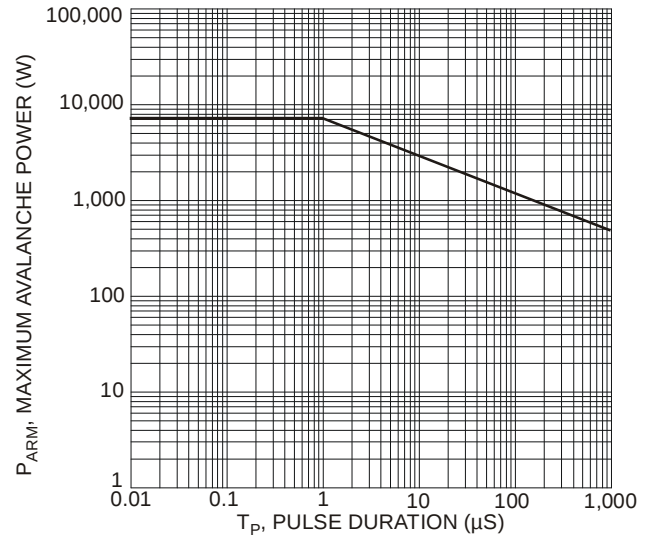
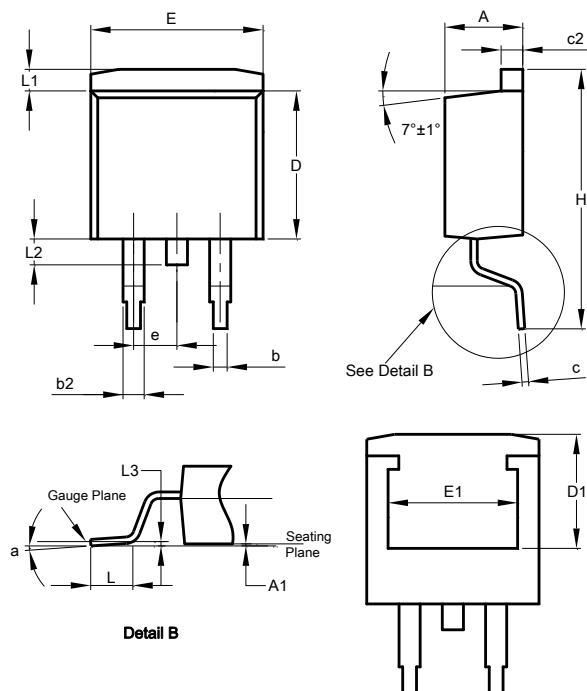


Fig. 4 Maximum Avalanche Power Curve

Package Outline Dimensions

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

TO263AB (D2PAK)

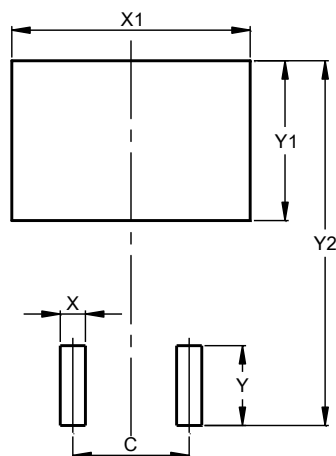


TO263AB (D2PAK)			
Dim	Min	Max	Typ
A	4.07	4.82	—
A1	0.00	0.25	—
b	0.51	0.99	—
b2	1.15	1.77	—
c	0.356	0.73	—
c2	1.143	1.65	—
D	8.39	9.65	—
D1	6.55	6.95	—
e	2.54 TYP		
E	9.66	10.66	—
E1	6.23	8.23	—
H	14.61	15.87	—
L	1.78	2.79	—
L1	—	1.67	—
L2	—	1.77	—
L3	—	—	0.254
a	0°	8°	—
All Dimensions in mm			

Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.

TO263AB (D2PAK)



Dimensions	Value (in mm)
C	5.08
X	1.10
X1	10.41
Y	3.50
Y1	7.01
Y2	15.99

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