



10A SBR[®] SUPER BARRIER RECTIFIER

Product Summary (@ T_A = +25°C)

V _{RRM} (V)	I _O (A)	V _{F(MAX)} (V)	I _{R(MAX)} (mA)
45	10	0.57	0.5

Features and Benefits

- Ultra-Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)

Applications

- Switching Power Supplies
- DC-DC Converter
- Freewheeling Diodes

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
- Terminals: Matte Tin Finish Annealed over Copper Leadframe.
 Solderable per MIL-STD-202, Method 208@3
- · Polarity: See Below
- Weight: 0.4 grams (Approximate)



Top View



Package Pin Out Configuration

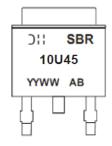
Ordering Information (Note 4)

- 1			
	Part Number	Case	Packaging
	SBR10U45D1-13	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



SBR10U45 = Product Type Marking Code AB = Foundry and Assembly Code YYWW = Date Code Marking YY = Last Two Digits of Year, (ex: 14 = 2014) 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
RMS Reverse Voltage	V _{R(RMS)}	31	V
Average Rectified Output Current @T _C = +110°C	Io	10	Α
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	125	А

Thermal Characteristics @T_A = +25°C unless otherwise specified

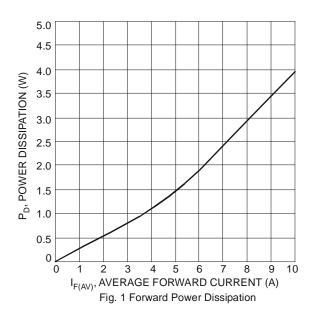
Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Thermal Resistance Junction to Case	R _{eJC}	6.0	°C/W
Thermal Resistance Junction to Case Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	35	O/ VV
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

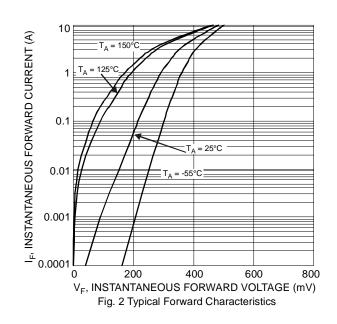
Electrical Characteristics @TA = +25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Forward Voltage Drop	\/_		-	0.57	V	$I_F = 10A, T_J = 25^{\circ}C$
	VF	-	-	0.54		I _F = 10A, T _J = 125°C
Leakage Current (Note 6)	I _R	=	-	0.5	mA	$V_R = 45V, T_J = 25^{\circ}C$

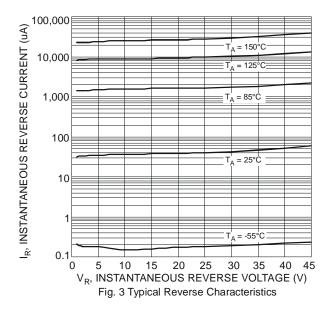
Notes: 5. Device mounted on 2inch sq. Al board, minimum recommended pad layout as shown on Diodes Inc., suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com.

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









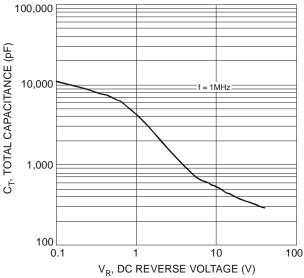
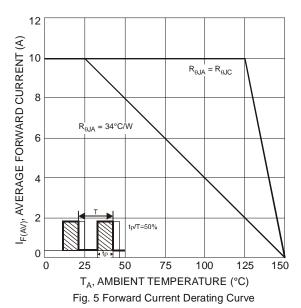
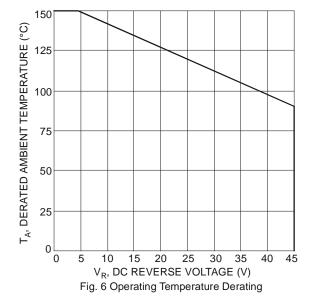


Fig. 4 Total Capacitance vs. Reverse Voltage

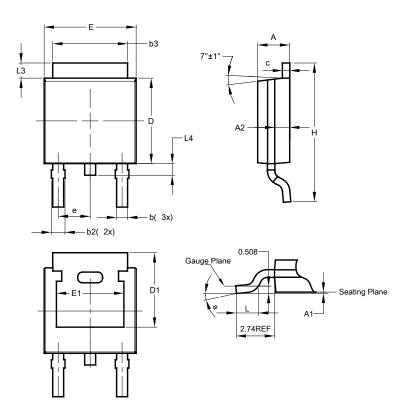






Package Outline Dimensions

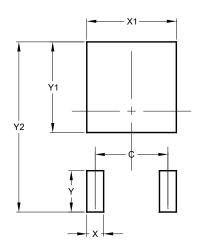
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



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 AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for latest version.



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



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