

10A TrenchSBR TRENCH SUPER BARRIER RECTIFIER

Product Summary

V _{RRM} (V)	I _O (A)	V _{F max} (V)	I _{R max} (mA)
60	10	0.52	0.4

Features and Benefits

- Reduced Ultra-Low Forward Voltage Drop (V_F).
 Better Efficiency and Cooler Operation.
- Reduced High Temperature Reverse Leakage.

 Increased Reliability Against Thermal Runaway Failure in High Temperature Operation.
- Patented Super Barrier Rectifier Technology (SBR®)
- 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)

Description

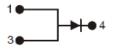
Packaged in the robust industry-standard TO252 (DPAK) package, the SBRT10U60D1Q provides very low V_{F} and excellent reverse leakage stability at high temperatures.

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.
 Solderable per MIL-STD-202, Method 208 (3)
- Weight: 0.4 grams (Approximate)



Top View



Package Pin-Out Configuration

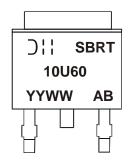
Ordering Information (Note 5)

Part Number	Compliance	Case	Packaging	
SBRT10U60D1Q-13	Automotive	TO252 (DPAK)	2500 pieces/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/product_compliance_definitions.html.
- 5. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information



SBRT10U60 = Product Type Marking Code AB = Foundry and Assembly Code YYWW = Date Code Marking YY = Last Two Digits of Year (ex: 17 = 2017) WW = Week (01 to 53)



Maximum Ratings (@ $T_A = +25$ °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 Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _{RM}	60	>
Average Rectified Output Current	Io	10	Α
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	140	А

Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 6)	$R_{\theta JA}$	18	°C/W
Typical Thermal Resistance Junction to Case (Note 6)		2	°C/W
Operating and Storage Temperature Range	$T_{J_i} T_{STG}$	-55 to +150	°C

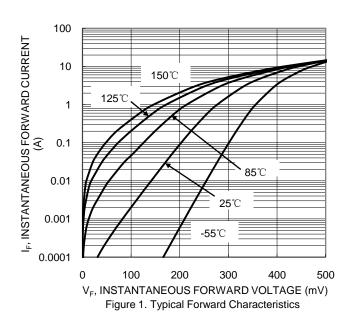
Electrical Characteristics (Per Leg) (@TA = +25°C, unless otherwise specified.)

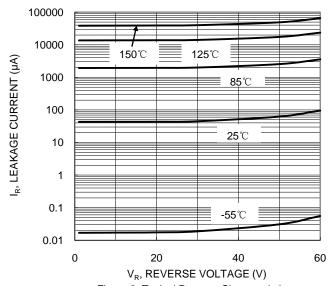
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Forward Voltage Drop	V-	_	0.44	0.52	V	$I_F = 10A$, $T_J = +25$ °C
	VF	_	_	0.50		I _F = 10A, T _J = +125°C
Lookaga Current (Note 7)	I _R	_	0.08	0.4	mA	V _R = 60V, T _J = +25°C
Leakage Current (Note 7)		_	_	70	mA	$V_R = 60V, T_J = +125$ °C

at http://www.diodes.com/package-outlines.html.7. Short duration pulse test used to minimize self-heating effect.

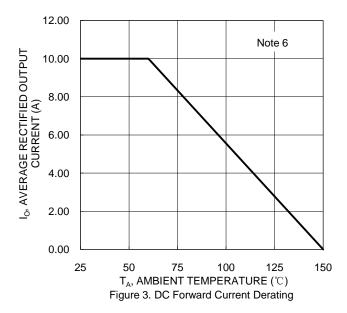
Notes:

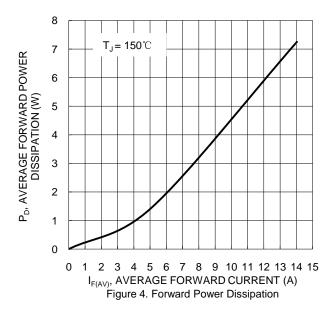
^{6. 2}inch*2inch Al board, minimum recommended pad layout as shown in Diodes Incorporated's package outline PDFs, which can be found on our website at http://www.diodes.com/package-outlines.html.

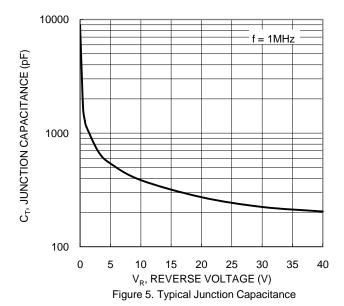










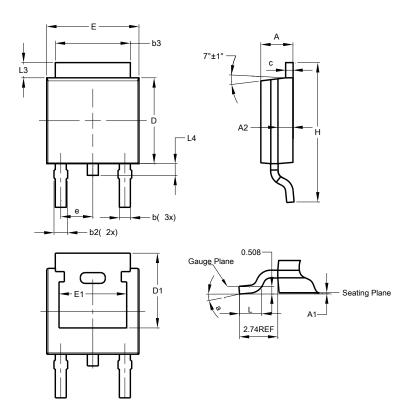




Package Outline Dimensions

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

TO252 (DPAK)

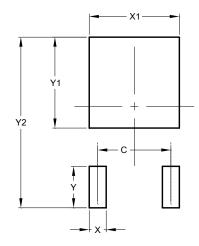


TO252 (DPAK)					
Dim	Min	Max	Тур		
Α	2.19	2.39	2.29		
A1	0.00	0.13	0.08		
A2	0.97	1.17	1.07		
b	0.64	0.88	0.783		
b2	0.76	1.14	0.95		
b3	5.21	5.46	5.33		
С	0.45	0.58	0.531		
D	6.00	6.20	6.10		
D1	5.21	-	-		
е	-	-	2.286		
Е	6.45	6.70	6.58		
E1	4.32	-	-		
Н	9.40	10.41	9.91		
L	1.40	1.78	1.59		
L3	0.88	1.27	1.08		
L4	0.64	1.02	0.83		
а	0°	10°	-		
All Dimensions in mm					

Suggested Pad Layout

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

TO252 (DPAK)



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



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Офис по работе с юридическими лицами:

105318, г. Москва, ул. Щербаковская д. 3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru moschip.ru_6 moschip.ru 4 moschip.ru 9