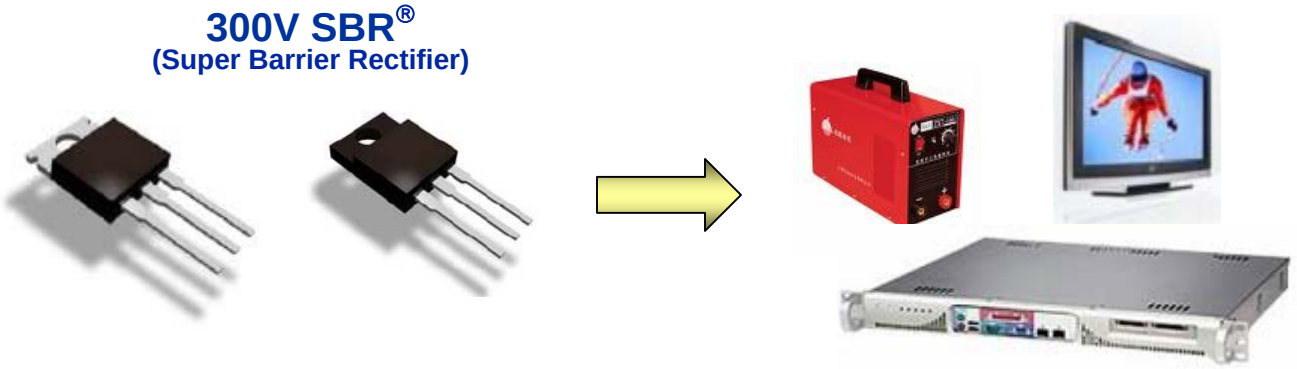
New Product Announcement

August 10, 2007

Diodes Introduces First Break-Through 300V SBR® Rectifiers with Industry Leading Performance

300V SBR®
(Super Barrier Rectifier)



Introducing NEW 300V SBR® Product Offerings for Industrial Servers, Welding Equipment, and LCD Power Supplies

New 300V SBR® Ultra-Low VF Product Family for SMPS							
Part No.	Description	Package	Max T_J	V_F @ rated current 125°C, Typ	I_R @ rated voltage, 125°C, Typ	Samples Availability	Production Lead Time
SBR10U300CT	10 Amperes / 300 Volts, Ultra-Low VF SBR®	TO-220AB	175C	0.64V	0.25mA	Available Now!	8 -12 wks
SBR10U300CTFP	10 Amperes / 300 Volts, Ultra-Low VF SBR®	ITO-220AB	175C	0.64V	0.25mA	Available Now!	8 -12 wks
SBR20A300CT	20 Amperes / 300 Volts, Low VF SBR®	TO-220AB	175C	0.70V	0.25mA	Available Now!	8 -12 wks
SBR20A300CTFP	20 Amperes / 300 Volts, Low VF SBR®	ITO-220AB	175C	0.70V	0.25mA	Available Now!	8 -12 wks
SBR30300CT	30 Amperes / 300 Volts, SBR®	TO-220AB	175C	0.76V	0.25mA	Available Now!	8 -12 wks
SBR30300CTFP	30 Amperes / 300 Volts, SBR®	ITO-220AB	175C	0.76V	0.25mA	Available Now!	8 -12 wks
SBR40U300CT	40 Amperes / 300 Volts, Ultra-Low VF SBR®	TO-220AB	175C	0.73V	2.0mA	Available Now!	8 -12 wks
SBR60A300CT	60 Amperes / 300 Volts, Low VF SBR®	TO-220AB	175C	0.78V	2.0mA	Available Now!	8 -12 wks

New 300V SBR® Product Family

The new 300V SBR® Product Family is the only technology today to combine both the low Schottky-like forward voltage drop V_F with the thermal stability of a Fast Recovery Rectifier (FRD) at a reverse voltage of 300V.

Features and Advantages of New 300V SBR® Product Family

- 300V SBR® Ultra-Low V_F "U" and Low V_F "A" version packaged in standard TO-220AB and ITO-220AB packages with wide current offering from 10A to 60A
- A significant 20-25% improvement in forward voltage drop (VF) compared to traditional Ultra-Fast rectifiers with similar switching speed
- Industry first 60A current rating (SBR60A300CT) with a reverse voltage of 300V and a maximum junction temperature of 175°C
- Large safe operating area (SOA) with maximum junction temperature of 175°C provides extra margin for high temperature applications
- Fast switching speed 50 nS (maximum value) and faster for RG1 test conditions (I_F = 0.5A, I_{RR} = 0.25A, I_R = 1A)
- Ideal for end user applications like industrial and telecom +48V power supplies, welding equipment and LCD televisions
- Ideal cost replacement for 200V breakdown rectifiers to simplify design by removing bulky costly snubber circuits that suppress large voltage spikes

Availability

- **Samples:** *Now* Available!
- **Production Quantity Lead Time:** 8 – 12 weeks
- **Data Sheets Available *NOW* at: www.diodes.com**

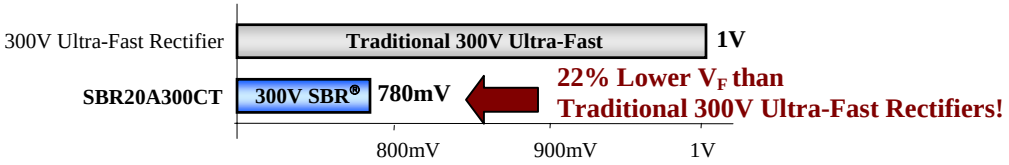
To download selected data sheet, enter p/n in our website Product Data Sheet search, or click**,**

SBR10U300CT/CTFP	10 Amperes / 300 Volts Ultra-Low V_F SBR®
SBR20A300CT/CTFP	20 Amperes / 300 Volts Low V_F SBR®
SBR30300CT/CTFP	30 Amperes / 300 Volts Standard SBR®
SBR40U300CT	40 Amperes / 300 Volts Ultra-Low V_F SBR®
SBR60A300CT	60 Amperes / 300 Volts Low V_F SBR®

Key Parameter: Ultra-Low Forward Voltage, V_F

One of the key advantages of the 300V SBR® Product Family compared to traditional Ultra-Fast Rectifiers is having a much lower forward voltage drop, V_F. The typical V_F improvement is in the range of 20-25%.

Maximum V_F at 10A, 125°C, mV

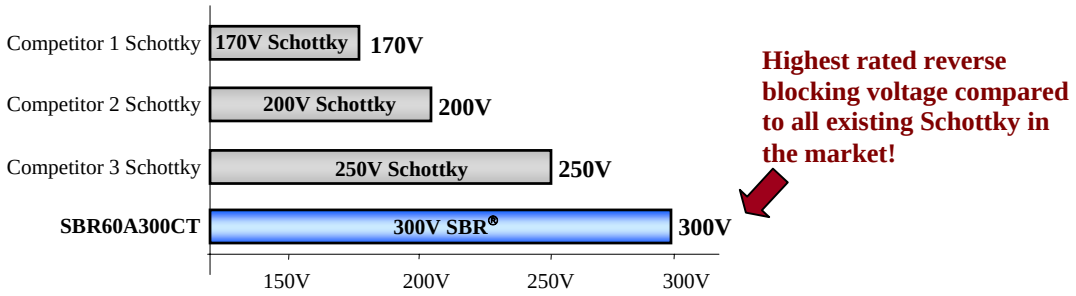


With a 22% lower V_F improvement, the 300V SBR®product family offers the lowest V_F for any rectifier in the market. This V_F improvement can result in a significant efficiency improvement and a much higher output current rating in a smaller package type (60A for TO-220AB).

Benchmark: SBR vs. Schottky

Due to the metal barrier, Schottky rectifiers are unable to reach a reliable maximum blocking voltage of 300V. The leading Schottky competitors in the industry are only able to reach a range of 170V to 250V without any degradation in performance or yield consistency.

Maximum Repetitive Blocking Voltage V_B, (Volts)

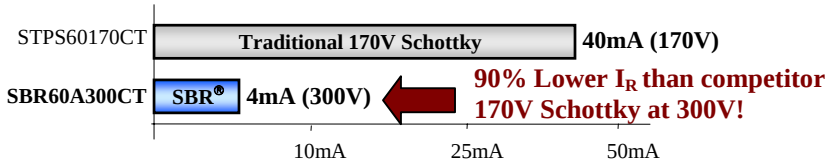


The 300V SBR® Product family is the only technology in the market to offer a rated 300V maximum reverse blocking voltage with Schottky like forward voltage loss, V_F.

Thermal Performance Benefits

The 300V SBR® technology also offers substantially lower high-temperature reverse leakage (I_R) for more thermal stability and safe operating area (SOA) as compared with Schottky rectifiers.

Typical I_R at Rated Voltage, 150°C, mA



Crosses from Industry Parts

The table (below) provides a comparison between our parts and similar competitive product series families. Please refer to product datasheets for direct comparisons and product specifications.

Diodes		ST Microelectronics		Vishay (IRF)	On Semi
P/N	Package	Direct Cross	V_B Optimized Cross*	Direct Cross	V_B Optimized Cross*
SBR10U300CT	TO-220AB	-	STPS10170CT	BYT28-300	-
SBR10U300CTFP	ITO-220AB		-	BYT28F-300	
SBR20A300CT	TO-220AB	STTH2003CT	STPS20170CT	UH20FCT	BYV32-200
SBR20A300CTFP	ITO-220AB	STTH2003CFP	STPS20170CFP	-	-
SBR30300CT	TO-220AB	-	-		
SBR30300CTFP	ITO-220AB				
SBR40U300CT	TO-220AB		STPS40170CT		MBR40250T
SBR60A300CT	TO-220AB		STPS60170CT		-

*For Optimized Cross, please refer to the datasheet specifications for V_F to determine exact performance difference of replacing a lower voltage rectifier with a 300V SBR device.

End-User Applications

- Industrial and Telecom Power Supplies
- Welding Applications
- LCD TVs
- Medical Power Supplies
- DC/DC Converters
- Un-interruptible Power Supplies

Circuit Applications

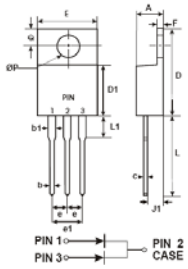
- Output Rectifiers
- Free-Wheeling Diode
- Boost Diode

Solderability & Environmental Highlights

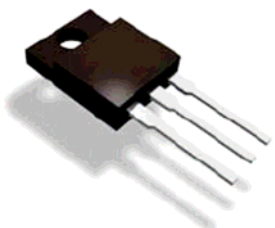
- RoHS Compliant
- Matte Tin Finish annealed over Copper Lead frame
- Withstands 260°C Solder Reflow
- Meets Moisture Sensitivity Level (MSL) 1

Package Outline Dimensions (mm)

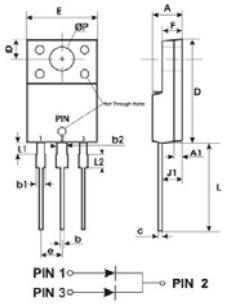
TO-220AB



TO-220AB		
DIM.	MIN.	MAX.
A	4.47	4.67
b	0.71	0.91
b1	1.17	1.37
c	0.31	0.53
D	14.65	15.35
D1	8.50	8.90
E	10.01	10.31
e	2.54 typ	
e1	4.98	5.18
F	1.17	1.37
J1	2.52	2.82
L	13.40	13.80
L1	3.56	3.96
ØP	3.735	3.935
Q	2.59	2.89
All Dimensions in Millimeters		



ITO-220AB



ITO-220AB		
DIM.	MIN.	MAX.
A	4.30	4.70
b	0.50	0.75
b1	1.10	1.35
b2	1.50	1.75
c	0.50	0.75
D	14.80	15.20
E	9.96	10.36
e	2.54 typ	
F	2.80	3.20
J1	2.50	2.90
L	12.80	13.60
L1	1.70	1.90
ØP	3.50 typ	
Q	2.70 typ	
All Dimensions in Millimeters		