

# Super Barrier Rectifier™

Using state-of-the-art SBR IC process technology,  
the following features are made possible in a single device:

### Major ratings and characteristics

Characteristics	Values	Units
$I_{F(AV)}$ Rectangular Waveform	20	A
$V_{RRM}$	100	V
$V_F @ 10A, T_j = 125^\circ C$	0.67	V, typ
$T_j$ (operating/storage)	-65 to 175	$^\circ C$


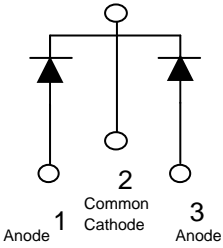

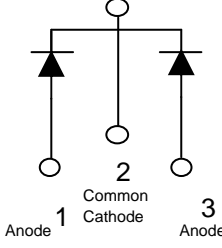

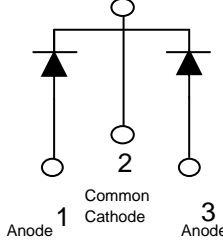

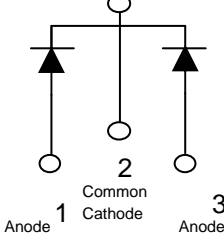
**Device optimized for high temperature  
Power Supply applications**

### ELECTRICAL:

- \* Low Forward Voltage Drop
- \* Reliable High Temperature Operation
- \* Super Barrier Design
- \* Softest, Fast Switching Capability
- \* 175 $^\circ C$  Operating Junction Temperature

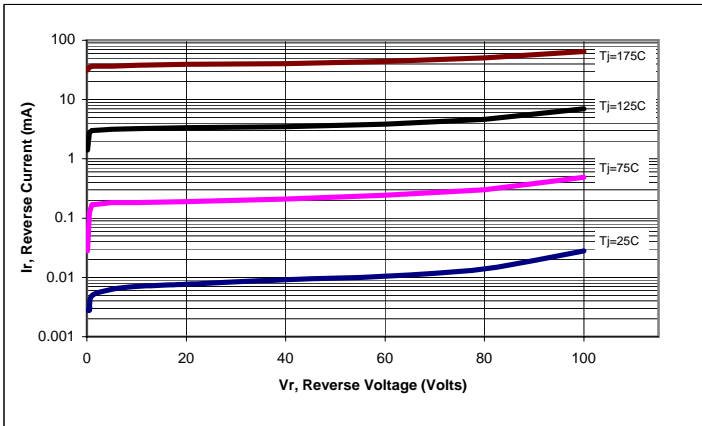
### MECHANICAL:

- \* Molded Plastic TO-220AB, TO-262, TO-263, and ITO-220 packages

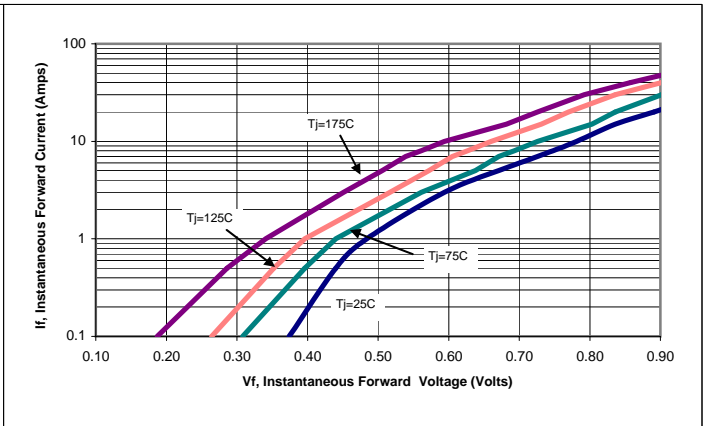
Case Styles			
SBR20100CT	SBR20100CTF	SBR20100CTI	SBR20100CTB
  	  	  	  
TO-220AB	ITO-220	TO-262	TO-263

<b>Maximum Ratings and Electrical Characteristics</b> (at 25°C unless otherwise specified)				
	<b>SYMBOL</b>			<b>UNITS</b>
DC Blocking Voltage Working Peak Reverse Voltage Peak Repetitive Reverse Voltage	$V_{RM}$ $V_{RWM}$ $V_{RRM}$	100		Volts
Average Rectified Forward Current (Rated $V_R$ -20Khz Square Wave) - 50% duty cycle	$I_O$	20		Amps
Peak Forward Surge Current - 1/2 60hz	$I_{FSM}$	120		Amps
Peak Repetitive Reverse Surge Current (2uS-1Khz)	$I_{RRM}$	2		Amps
Instantaneous Forward Voltage (per leg) $I_F = 10A; T_J = 25^\circ C$ $I_F = 10A; T_J = 125^\circ C$	$V_F$	Typ --- ---	Max 0.82 0.75	Volts
Maximum Instantaneous Reverse Current at Rated $V_{RM}$ $T_J = 25^\circ C$ $T_J = 125^\circ C$	$I_R^*$	Typ --- ---	Max 100 10	uA mA
Maximum Rate of Voltage Change (at Rated $V_R$ )	dv/dt	10,000		V/uS
Maximum Thermal Resistance JC (per leg) Package = TO-220AB, TO-262, & TO-263 Package = ITO-220	$R_{\theta JC}$	2 4		°C/W
Operating and Storage Junction Temperature	$T_J$	-65 to +175		°C

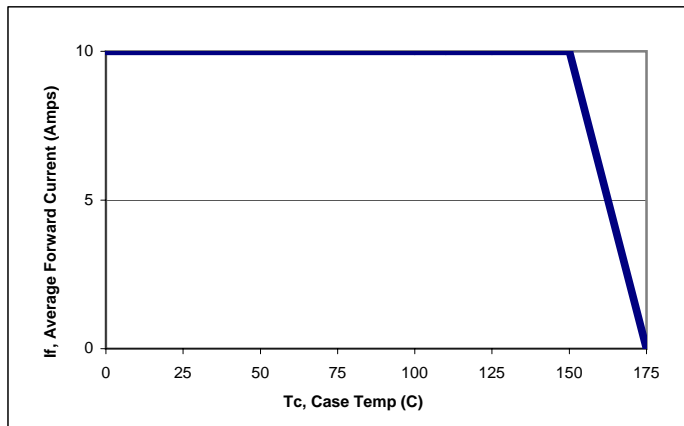
\* Pulse width < 300 uS, Duty cycle < 2%



**Figure 1: Typical Reverse Current**



**Figure 2: Typical Forward Voltage**



**Figure 3: Current Derating, Case**

APD SEMICONDUCTOR reserves the right to make changes without further notice to any products herein. APD SEMICONDUCTOR makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does APD SEMICONDUCTOR assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in APD SEMICONDUCTOR data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. APD SEMICONDUCTOR does not convey any license under its patent rights nor the rights of others. APD SEMICONDUCTOR products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the APD SEMICONDUCTOR product could create a situation where personal injury or death may occur. Should Buyer purchase or use APD SEMICONDUCTOR products for any such unintended or unauthorized application, Buyer shall indemnify and hold APD SEMICONDUCTOR and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that APD SEMICONDUCTOR was negligent regarding the design or manufacture of the part.