

# 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
$V_{RRM}$	150	V
$I_R$ @ 150V, $T_j=25^\circ\text{C}$	12	nA, typ
$T_j$ (operating/storage)	-65 to 200	$^\circ\text{C}$


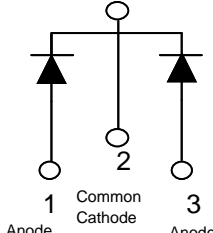

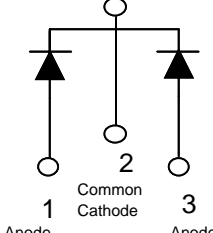
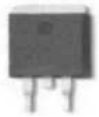
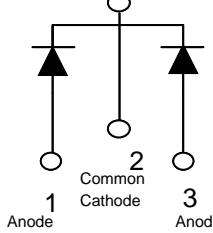
**Device optimized for high temperature  
Power Supply applications**

## MECHANICAL:

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

## ELECTRICAL:

- \* Ultra High Thermal Reliability
- \* Low Reverse Leakage
- \* Reliable High Temperature Operation
- \* Super Barrier Design
- \* Softest, fast switching capability
- \* 200 $^\circ\text{C}$  Operating Junction Temperature

Case Styles		
SBR20150CT	SBR20150CTI	SBR20150CTB
  <b>TO-220AB</b>	  <b>TO-262</b>	  <b>TO-263</b>

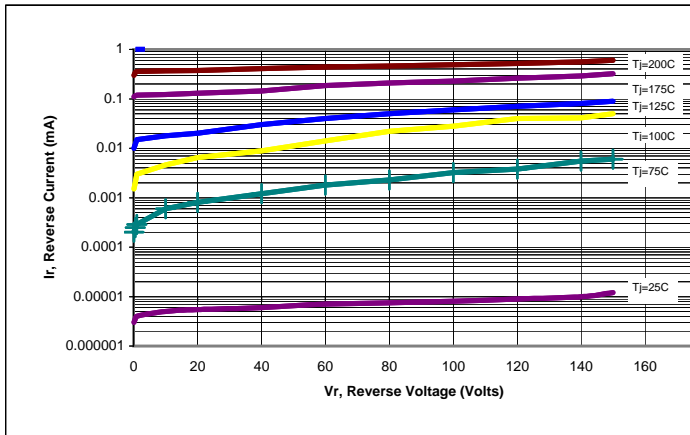
**Maximum Ratings and Electrical Characteristics**

(at 25°C unless otherwise specified)

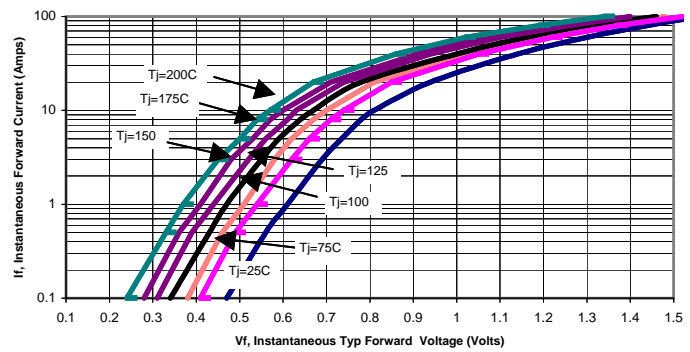
	SYMBOL			UNITS
DC Blocking Voltage Working Peak Reverse Voltage Peak Repetitive Reverse Voltage	$V_{RM}$ $V_{RWM}$ $V_{RRM}$	150		Volts
RMS Reverse Voltage	$V_{R(RMS)}$	150		Volts
Average Rectified Forward Current (Rated $V_R$ -20Khz Square Wave)-50% duty cycle	$I_O$	20		Amps
Peak Forward Surge Current - 1/2 60hz	$I_{FSM}$	180		Amps
Peak Repetitive Reverse Surge Current (2uS-2Khz)	$I_{RRM}$	3		Amps
Instantaneous Forward Voltage (per leg) $I_F = 10A$ ; $T_J = 25^\circ C$ $I_F = 20A$ ; $T_J = 25^\circ C$ $I_F = 10A$ ; $T_J = 125^\circ C$	$V_F$	Typ 0.82 0.94 0.67	Max 0.86 0.98 0.71	Volts
Maximum Instantaneous Reverse Current at Rated $V_{RM}$ $T_J = 25^\circ C$ $T_J = 125^\circ C$	$I_R^*$	Typ 0.012 0.09	Max 5 1	uA mA
Maximum Rate of Voltage Change (at Rated $V_R$ )	dv/dt	10,000		V/uS
Maximum Thermal Resistance JC	$R\theta_{JC}$	2		°C/W
Operating and Storage Junction Temperature	$T_J$	-65 to +200		°C

NOTE: Dice are available for customer applications.

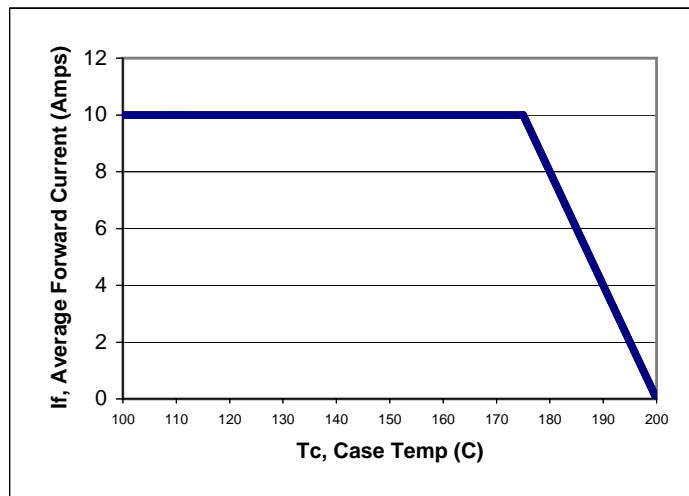
\* Pulse width &lt; 300 uS, Duty cycle &lt; 2%



**Figure 1: Typical Reverse Current**



**Figure 2: Typical Forward Voltage**



**Figure 3: Current Derating, Case**

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