

# 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	40	A
$V_{RRM}$	45	V
$V_F @ 20A, T_j = 125^\circ C$	0.40	V, typ
$T_j$ (operating/storage)	-65 to 150	$^\circ C$

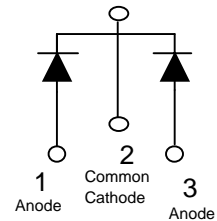
**Device optimized for low forward voltage drop to maximize efficiency in Power Supply applications**

### MECHANICAL:

\* Molded Plastic TO-220 package

### ELECTRICAL:

- \* Low Forward Voltage Drop
- \* Reliable High Temperature Operation
- \* Super Barrier Design
- \* Softest, fast switching capability
- \*  $150^\circ C$  Operating Junction Temperature



## Maximum Ratings and Electrical Characteristics

(at  $25^\circ C$  unless otherwise specified)

	SYMBOL			UNITS
DC Blocking Voltage	$V_{RM}$	45		Volts
Working Peak Reverse Voltage	$V_{RWM}$			
Peak Repetitive Reverse Voltage	$V_{RRM}$			
Average Rectified Forward Current (Rated $V_R$ -20Khz Square Wave) - 50% duty cycle	$I_O$	40		Amps
Peak Forward Surge Current - 1/2 60hz	$I_{FSM}$	300		Amps
Peak Repetitive Reverse Surge Current (2uS-1Khz)	$I_{RRM}$	3		Amps
Instantaneous Forward Voltage (per leg) $I_F = 20A; T_j = 25^\circ C$ $I_F = 20A; T_j = 125^\circ C$	$V_F^*$	Typ --- ---	Max 0.56 0.46	Volts
Maximum Instantaneous Reverse Current at Rated $V_{RM}$ $T_j = 25^\circ C$ $T_j = 125^\circ C$	$I_R$	Typ --- ---	Max 0.5 100	mA mA
Maximum Rate of Voltage Change (at Rated $V_R$ )	dv/dt	10,000		V/uS
Maximum Thermal Resistance JC (per leg)	$R_{\theta_{JC}}$	2		$^\circ C/W$
Operating and Storage Junction Temperature	$T_j$	-65 to +150		$^\circ C$

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

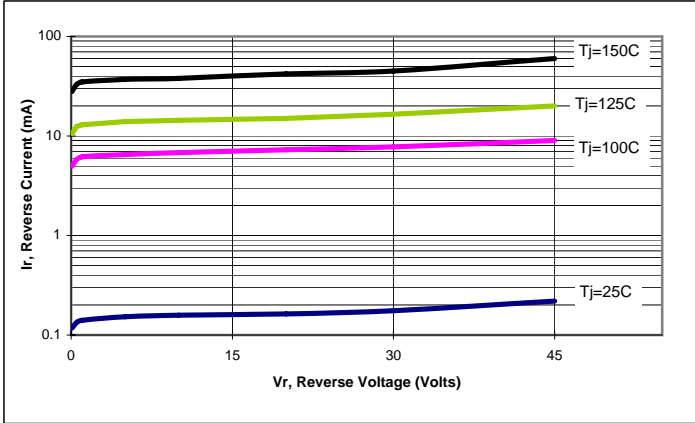


Figure 1: Typical Reverse Current (per leg)

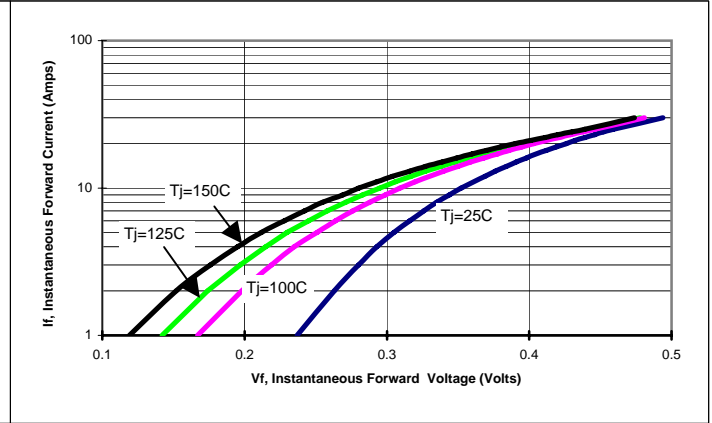


Figure 2: Typical Forward Voltage (per leg)

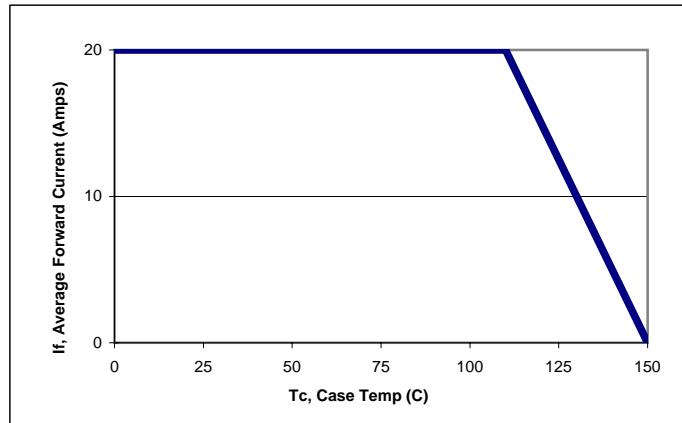


Figure 3: Current Derating, Case (per leg)

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APD Semiconductor, Inc.

1 Lagoon Drive, Suite 410, Redwood City, CA 94065, USA  
 Ph: 650 508 8896 FAX: 650 508 8865  
 Homepage: [www.apdsemi.com](http://www.apdsemi.com)  
 email: [info@apdsemi.com](mailto:info@apdsemi.com)