APD Semiconductor, Inc.

SBR40U45CT

Super Barrier Rectifier ™

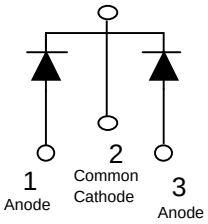
Using state-of-the-art SBR IC process technology,
the following features are made possible in a single device:

Major ratings and characteristics

Characteristics	Values	Units
$I_{F(AV)}$ Rectangular Waveform	40	A
V_{RRM}	45	V
V_F@20A, Tj=125^{O}C	0.40	V, typ
Tj (operating/storage)	-65 to 150	^{O}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^{O}C Operating Junction Temperature

Maximum Ratings and Electrical Characteristics
(at 25^{O}C unless otherwise specified)

	SYMBOL			UNITS
DC Blocking Voltage Working Peak Reverse Voltage Peak Repetitive Reverse Voltage	V_{RM} V_{RWM} V_{RRM}	45		Volts
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^{O}C I_F = 20A; T_J= 125^{O}C	V_F*	Typ --- ---	Max 0.56 0.46	Volts
Maximum Instantaneous Reverse Current at Rated V_{RM} T_J = 25^{O}C T_J = 125^{O}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		^{O}C/W
Operating and Storage Junction Temperature	T_J	-65 to +150		^{O}C

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

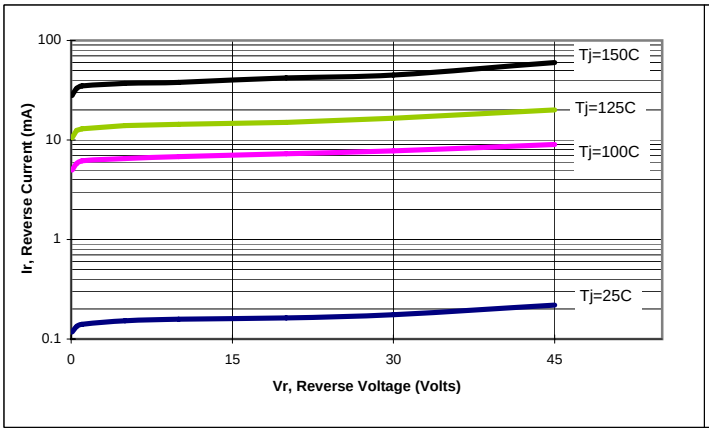


Figure 1: Typical Reverse Current (per leg)

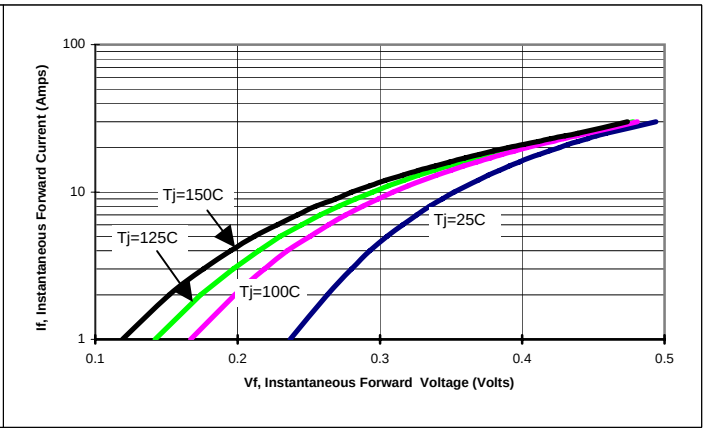


Figure 2: Typical Forward Voltage (per leg)

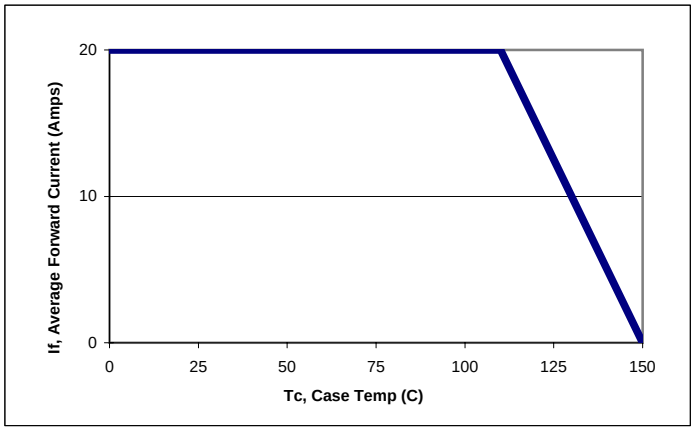


Figure 3: Current Derating, Case (per leg)

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
email: info@apdsemi.com