APD Semiconductor, Inc.

SBR20A45CT
SBR20A45CTF
SBR20A45CTI
SBR20A45CTB

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

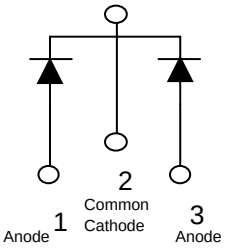
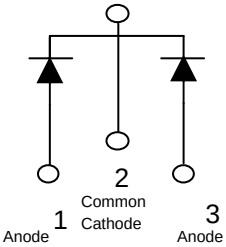
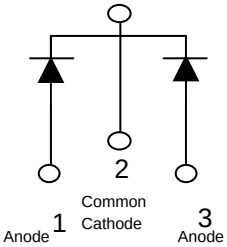
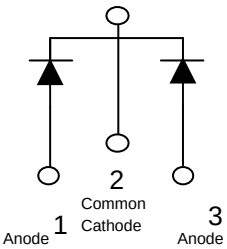
Characteristics	Values	Units
$I_{F(AV)}$ Rectangular Waveform	20	A
V_{RRM}	45	V
V_F@10A, Tj=125^{O}C	0.41	V, typ
Tj (operating/storage)	-65 to 150	^{O}C

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

ELECTRICAL:
- ***** Low Forward Voltage Drop
- ***** Reliable High Temperature Operation
- ***** Super Barrier Design
- ***** Softest, fast switching capability
- * 150^{O}C Operating Junction Temperature

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

Case Styles

SBR20A45CT	SBR20A45CTF	SBR20A45CTI	SBR20A45CTB
			
TO-220AB	ITO-220	TO-262	TO-263

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}	45		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-1Khz)	I_{RRM}	3		Amps
Instantaneous Forward Voltage (per leg) I_F = 10A; T_J = 25°C I_F = 20A; T_J = 25°C I_F = 10A; T_J = 125°C	V_F	Typ --- --- ---	Max 0.50 0.60 0.47	Volts
Maximum Instantaneous Reverse Current at Rated V_{RM} T_J = 25°C T_J = 125°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) 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 +150		°C

NOTE: Dice are available for customer applications.

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

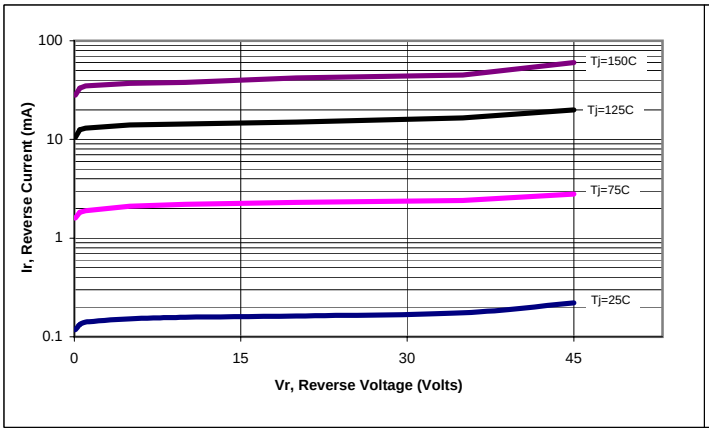


Figure 1: Typical Reverse Current

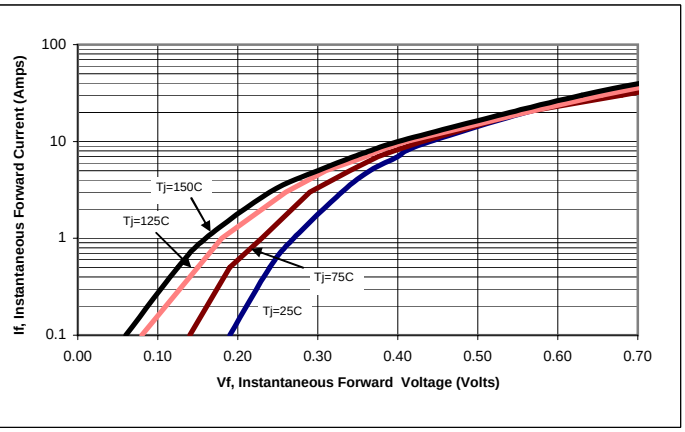


Figure 2: Typical Forward Voltage

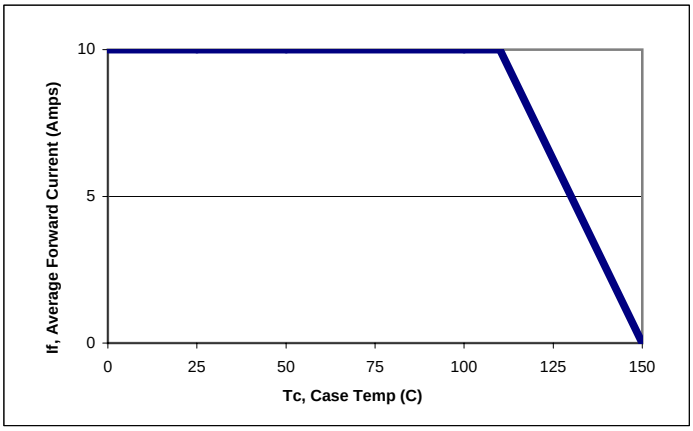


Figure 3: Current Derating, Case

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