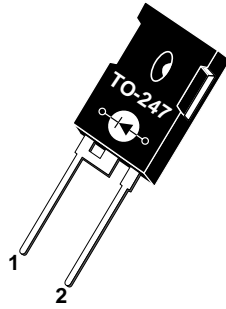


1 - Cathode  
2 - Anode  
Back of Case - Cathode



**ADVANCED  
POWER  
TECHNOLOGY®**  
**APT100S20B 200V 100A**

## HIGH VOLTAGE SCHOTTKY DIODE

PRODUCT APPLICATIONS	PRODUCT FEATURES	PRODUCT BENEFITS
<ul style="list-style-type: none"> <li>• Parallel Diode               <ul style="list-style-type: none"> <li>-Switchmode Power Supply</li> <li>-Inverters</li> </ul> </li> <li>• Free Wheeling Diode               <ul style="list-style-type: none"> <li>-Motor Controllers</li> <li>-Converters</li> </ul> </li> <li>• Snubber Diode</li> <li>• Uninterruptible Power Supply (UPS)</li> <li>• 48 Volt Output Rectifiers</li> <li>• High Speed Rectifiers</li> </ul>	<ul style="list-style-type: none"> <li>• Ultrafast Recovery Times</li> <li>• Soft Recovery Characteristics</li> <li>• Popular TO-247 Package</li> <li>• Rugged - Avalanche Energy Rated</li> <li>• Low Forward Voltage</li> <li>• High Blocking Voltage</li> <li>• Low Leakage Current</li> </ul>	<ul style="list-style-type: none"> <li>• Low Losses</li> <li>• Low Noise Switching</li> <li>• Cooler Operation</li> <li>• Higher Reliability Systems</li> <li>• Increased System Power Density</li> </ul>

### MAXIMUM RATINGS

All Ratings:  $T_C = 25^\circ\text{C}$  unless otherwise specified.

Symbol	Characteristic / Test Conditions	APT100S20B	UNIT
$V_R$	Maximum D.C. Reverse Voltage	200	Volts
$V_{RRM}$	Maximum Peak Repetitive Reverse Voltage		
$V_{RWM}$	Maximum Working Peak Reverse Voltage		
$I_F(AV)$	Maximum Average Forward Current ( $T_C = 125^\circ\text{C}$ , Duty Cycle = 0.5) <sup>①</sup>	100	Amps
$I_F(RMS)$	RMS Forward Current <sup>①</sup>	100	
$I_{FSM}$	Non-Repetitive Forward Surge Current ( $T_J = 45^\circ\text{C}$ , 8.3ms)	1000	
$T_J, T_{STG}$	Operating and Storage Temperature Range	-55 to 150	°C
$T_L$	Lead Temperature: 0.063" from Case for 10 Sec.	300	
$E_{AVL}$	Avalanche Energy (2A, 50 mH)	100	mJ

### STATIC ELECTRICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
$V_F$	Maximum Forward Voltage	$I_F = 100\text{A}$	0.89	0.95	Volts
		$I_F = 200\text{A}$	1.18		
		$I_F = 100\text{A}, T_J = 150^\circ\text{C}$		0.80	
$I_{RM}$	Maximum Reverse Leakage Current	$V_R = V_R$ Rated		2	mA
		$V_R = V_R$ Rated, $T_J = 125^\circ\text{C}$		50	
$C_T$	Junction Capacitance, $V_R = 200\text{V}$		470		pF
$L_S$	Series Inductance (Lead to Lead 5mm from Base)		10		nH

APT Website - <http://www.advancedpower.com>

USA 405 S.W. Columbia Street  
EUROPE Chemin de Magret

Bend, Oregon 97702-1035  
F-33700 Merignac - France

Phone: (541) 382-8028  
Phone: (33) 5 57 92 15 15

FAX: (541) 388-0364  
FAX: (33) 5 56 47 97 61

**DYNAMIC CHARACTERISTICS**

**APT100S20B**

Symbol	Characteristic	MIN	TYP	MAX	UNIT
$t_{rr1}$	Reverse Recovery Time, $I_F = 1.0A$ , $di_F/dt = -15A/\mu s$ , $V_R = 30V$ , $T_J = 25^\circ C$		110		ns
$t_{rr2}$	Reverse Recovery Time		88		
$t_{rr3}$	$I_F = 100A$ , $di_F/dt = -100A/\mu s$ , $V_R = 100V$		123		
$t_{fr1}$	Forward Recovery Time		1600		
$t_{fr2}$	$I_F = 100A$ , $di_F/dt = 100A/\mu s$ , $V_R = 100V$		1600		
$I_{RRM1}$	Reverse Recovery Current		5		Amps
$I_{RRM2}$	$I_F = 100A$ , $di_F/dt = -100A/\mu s$ , $V_R = 100V$		7		
$Q_{rr1}$	Recovery Charge		253		nC
$Q_{rr2}$	$I_F = 100A$ , $di_F/dt = -100A/\mu s$ , $V_R = 100V$		490		
$V_{fr1}$	Forward Recovery Voltage		6.0		Volts
$V_{fr2}$	$I_F = 100A$ , $di_F/dt = 100A/\mu s$ , $V_R = 100V$		6.0		
$diM/dt$	Rate of Fall of Recovery Current		210		A/ $\mu s$
	$I_F = 100A$ , $di_F/dt = -100A/\mu s$ , $V_R = 100V$		250		

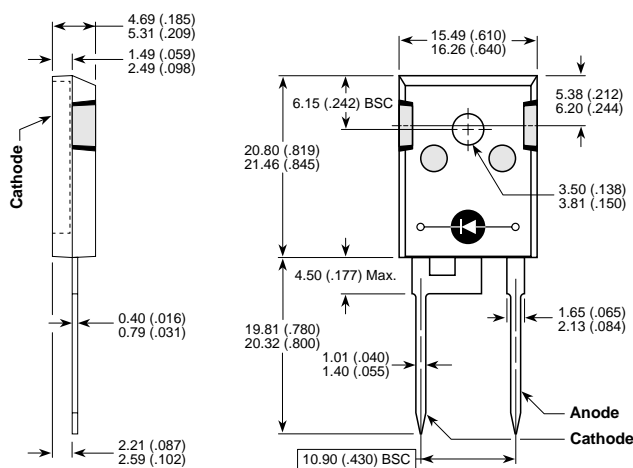
**THERMAL AND MECHANICAL CHARACTERISTICS**

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Junction-to-Case Thermal Resistance			.24	$^\circ C/W$
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance			40	
$W_T$	Package Weight		0.35		oz
			9.9		gm
Torque	Maximum Mounting Torque (Screw Type = 6-32 or 3mm Machine)			10	lb•in
				1.1	N•m

① The maximum current is limited by lead temperature

APT Reserves the right to change, without notice, the specifications and information contained herein.

**TO-247 Package Outline**



Dimensions in Millimeters and (Inches)

APT's devices are covered by one or more of the following U.S.patents:

- 4,895,810
- 5,045,903
- 5,089,434
- 5,182,234
- 5,019,522
- 5,262,336
- 5,256,583
- 4,748,103
- 5,283,202
- 5,231,474
- 5,434,095
- 5,528,058