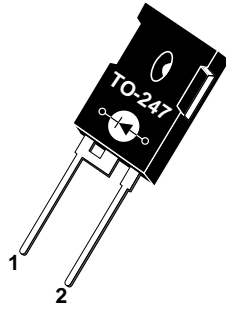


1 - Cathode
2 - Anode
Back of Case - Cathode



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

HIGH VOLTAGE SCHOTTKY DIODE

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

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) ^①	100	Amps
$I_F(RMS)$	RMS Forward Current ^①	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>

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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/ μs
	$I_F = 100A$, $di_F/dt = -100A/\mu s$, $V_R = 100V$		250		

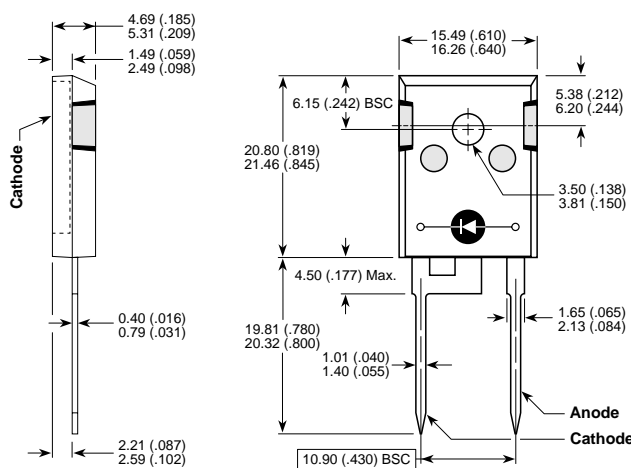
THERMAL AND MECHANICAL CHARACTERISTICS

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



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