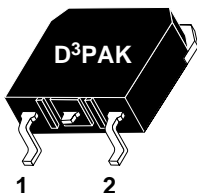


1 - Cathode  
2 - Anode  
Back of Case - Cathode



**ADVANCED  
POWER  
TECHNOLOGY®**  
**APT60S20S 200V 60A**

## HIGH VOLTAGE SCHOTTKY DIODE

### PRODUCT APPLICATIONS

- Parallel Diode
  - Switchmode Power Supply
  - Inverters
- Free Wheeling Diode
  - Motor Controllers
  - Converters
- Snubber Diode
- Uninterruptible Power Supply (UPS)
- 48 Volt Output Rectifiers
- High Speed Rectifiers

### PRODUCT FEATURES

- Ultrafast Recovery Times
- Soft Recovery Characteristics
- Surface Mount D<sup>3</sup>PAK
- Low Forward Voltage
- High Blocking Voltage
- Low Leakage Current

### PRODUCT BENEFITS

- 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	APT60S20S	UNIT
$V_R$	Maximum D.C. Reverse Voltage	200	Volts
$V_{RRM}$	Maximum Peak Repetitive Reverse Voltage		
$V_{RWM}$	Maximum Working Peak Reverse Voltage		
$I_F(\text{AV})$	Maximum Average Forward Current ( $T_C = 125^\circ\text{C}$ , Duty Cycle = 0.5)	60	Amps
$I_F(\text{RMS})$	RMS Forward Current (Max. Current Limited by Lead Temperature)	TBD	
$I_{FSM}$	Non-Repetitive Forward Surge Current ( $T_J = 45^\circ\text{C}$ , 8.3ms)	TBD	
$T_J, T_{STG}$	Operating and Storage Temperature Range	-55 to 150	$^\circ\text{C}$
$T_L$	Lead Temperature: 0.063" from Case for 10 Sec.	300	
$E_{AVL}$	Avalanche Energy (2A, 30mH)	60	mJ

### STATIC ELECTRICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
$V_F$	Maximum Forward Voltage		$I_F = 60\text{A}$	0.83	Volts
			$I_F = 120\text{A}$	0.96	
			$I_F = 60\text{A}, T_J = 150^\circ\text{C}$	0.80	
$I_{RM}$	Maximum Reverse Leakage Current		$V_R = V_R \text{ Rated}$	1	mA
			$V_R = V_R \text{ Rated}, T_J = 125^\circ\text{C}$	25	
$C_T$	Junction Capacitance, $V_R = 100\text{V}$		285		pF
$L_S$	Series Inductance (Lead to Lead 5mm from Base)		10		nH

# DYNAMIC CHARACTERISTICS

APT60S20S

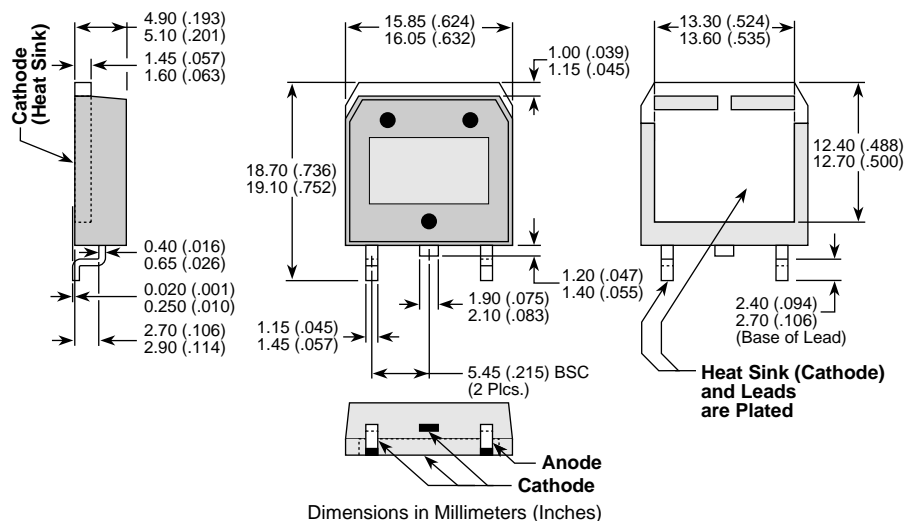
Symbol	Characteristic	MIN	TYP	MAX	UNIT
$t_{rr1}$	Reverse Recovery Time, $I_F = 1.0A$ , $di_F/dt = -15A/\mu s$ , $V_R = 30V$ , $T_J = 25^\circ C$		TBD	TBD	ns
$t_{rr2}$	Reverse Recovery Time		65		
$t_{rr3}$	$I_F = 60A$ , $di_F/dt = -100A/\mu s$ , $V_R = 100V$		94		
$t_{fr1}$	Forward Recovery Time		TBD		
$t_{fr2}$	$I_F = 60A$ , $di_F/dt = 100A/\mu s$ , $V_R = 100V$		TBD		
$I_{RRM1}$	Reverse Recovery Current		3.6		Amps
$I_{RRM2}$	$I_F = 60A$ , $di_F/dt = -100A/\mu s$ , $V_R = 100V$		5.5		
$Q_{rr1}$	Recovery Charge		140		nC
$Q_{rr2}$	$I_F = 60A$ , $di_F/dt = -100A/\mu s$ , $V_R = 100V$		305		
$V_{fr1}$	Forward Recovery Voltage		TBD		Volts
$V_{fr2}$	$I_F = 60A$ , $di_F/dt = 100A/\mu s$ , $V_R = 100V$		TBD		
$diM/dt$	Rate of Fall of Recovery Current		TBD		A/ $\mu s$
	$I_F = 60A$ , $di_F/dt = -100A/\mu s$ , $V_R = 100V$		TBD		

# THERMAL AND MECHANICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Junction-to-Case Thermal Resistance			0.4	$^\circ C/W$
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance			40	
$W_T$	Package Weight		0.14		oz
			3.9		gm

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

## D<sup>3</sup>PAK Package Outline



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