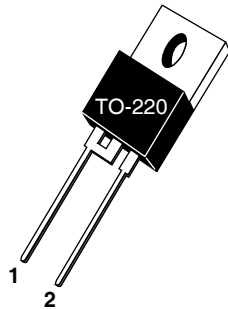


1 - Cathode  
2 - Anode  
Back of Case - Cathode



**ADVANCED  
POWER  
TECHNOLOGY®**  
**APT8DQ60K 600V 8A**

## ULTRAFAST SOFT RECOVERY RECTIFIER DIODE

PRODUCT APPLICATIONS	PRODUCT FEATURES	PRODUCT BENEFITS
<ul style="list-style-type: none"> <li>• Anti-Parallel Diode -Switchmode Power Supply -Inverters</li> <li>• Free Wheeling Diode -Motor Controllers -Converters</li> <li>• Snubber Diode</li> <li>• Uninterruptible Power Supply (UPS)</li> <li>• Induction Heating</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-220 Package</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	APT8DQ60K	UNIT
$V_R$	Maximum D.C. Reverse Voltage	600	Volts
$V_{RRM}$	Maximum Peak Repetitive Reverse Voltage		
$V_{RWM}$	Maximum Working Peak Reverse Voltage		
$I_F(AV)$	Maximum Average Forward Current ( $T_C = 121^\circ\text{C}$ , Duty Cycle = 0.5)	8	Amps
$I_F(RMS)$	RMS Forward Current (Square wave, 50% duty)	14	
$I_{FSM}$	Non-Repetitive Forward Surge Current ( $T_J = 45^\circ\text{C}$ , 8.3ms)	110	
$T_J, T_{STG}$	Operating and Storage Temperature Range	-55 to 175	$^\circ\text{C}$
$T_L$	Lead Temperature for 10 Sec.	300	

### STATIC ELECTRICAL CHARACTERISTICS

Symbol		MIN	TYP	MAX	UNIT
$V_F$	Forward Voltage	$I_F = 8\text{A}$	2.0	2.4	Volts
		$I_F = 16\text{A}$	2.5		
		$I_F = 8\text{A}, T_J = 125^\circ\text{C}$	1.6		
$I_{RM}$	Maximum Reverse Leakage Current	$V_R = V_R$ Rated		150	$\mu\text{A}$
		$V_R = V_R$ Rated, $T_J = 125^\circ\text{C}$		500	
$C_T$	Junction Capacitance, $V_R = 200\text{V}$		15		pF

**DYNAMIC CHARACTERISTICS**

**APT8DQ60K**

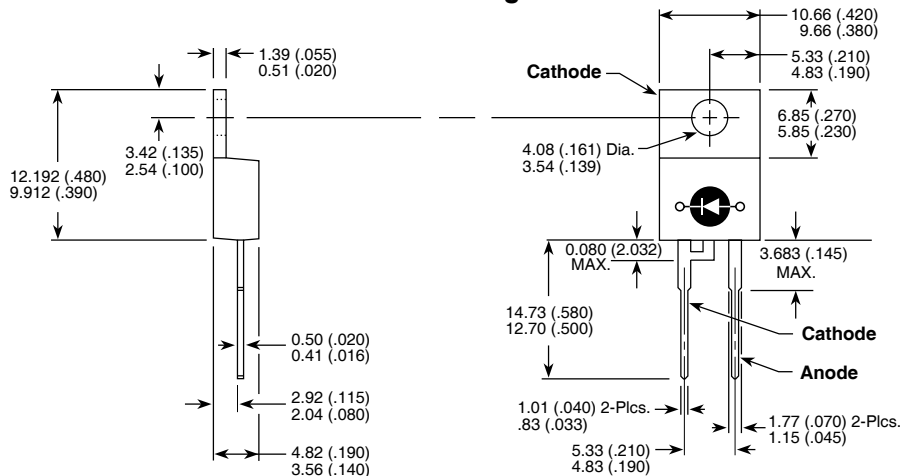
Symbol	Characteristic	Test Conditions	MIN	TYP	MAX	UNIT	
$t_{rr}$	Reverse Recovery Time	$I_F = 1A, di_F/dt = -100A/\mu s, V_R = 30V, T_J = 25^\circ C$	-	15		ns	
$t_{rr}$	Reverse Recovery Time			18			
$Q_{rr}$	Reverse Recovery Charge	$I_F = 8A, di_F/dt = -200A/\mu s, V_R = 400V, T_C = 25^\circ C$	-	20		nC	
$I_{RRM}$	Maximum Reverse Recovery Current			1.8	-	Amps	
$t_{rr}$	Reverse Recovery Time			-	85		ns
$Q_{rr}$	Reverse Recovery Charge	$I_F = 8A, di_F/dt = -200A/\mu s, V_R = 400V, T_C = 125^\circ C$	-	200		nC	
$I_{RRM}$	Maximum Reverse Recovery Current			-	4	-	Amps
$t_{rr}$	Reverse Recovery Time			-	45		ns
$Q_{rr}$	Reverse Recovery Charge	$I_F = 8A, di_F/dt = -1000A/\mu s, V_R = 400V, T_C = 125^\circ C$	-	300		nC	
$I_{RRM}$	Maximum Reverse Recovery Current			-	11		Amps

**THERMAL AND MECHANICAL CHARACTERISTICS**

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Junction-to-Case Thermal Resistance			2.70	°C/W
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance			80	
$W_T$	Package Weight		0.07		oz
			1.2		g
Torque	Maximum Mounting Torque			10	lb•in
				1.1	N•m

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

**TO-220AB Package Outline**



Dimensions in Millimeters and (Inches)

APT's products are covered by one or more of U.S. patents 4,895,810 5,045,903 5,089,434 5,182,234 5,019,522 5,262,336 6,503,786 5,256,583 4,748,103 5,283,202 5,231,474 5,434,095 5,528,058 and foreign patents. US and Foreign patents pending. All Rights Reserved.



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