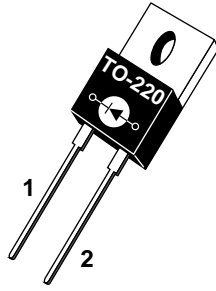


1 - Cathode
2 - Anode
Back of Case - Cathode



**ADVANCED
POWER
TECHNOLOGY®**
APT15D40K 400V 15A

ULTRAFAST SOFT RECOVERY RECTIFIER DIODE

PRODUCT APPLICATIONS

- Anti-Parallel Diode
 - Switchmode Power Supply
 - Inverters
- Free Wheeling Diode
 - Motor Controllers
 - Converters
- Snubber Diode
- Uninterruptible Power Supply (UPS)
- Induction Heating
- High Speed Rectifiers

PRODUCT FEATURES

- Ultrafast Recovery Times
- Soft Recovery Characteristics
- Popular TO-220 Package
- 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	APT15D40K	UNIT
V_R	Maximum D.C. Reverse Voltage	400	Volts
V_{RRM}	Maximum Peak Repetitive Reverse Voltage		
V_{RWM}	Maximum Working Peak Reverse Voltage		
$I_F(AV)$	Maximum Average Forward Current ($T_C = 100^\circ\text{C}$, Duty Cycle = 0.5)	15	Amps
$I_F(RMS)$	RMS Forward Current	25	
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 150	$^\circ\text{C}$
T_L	Lead Temperature: 0.063" from Case for 10 Sec.	300	

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
V_F	Maximum Forward Voltage			1.5	Volts
				$I_F = 15\text{A}$	
				$I_F = 30\text{A}$	
I_{RM}	Maximum Reverse Leakage Current			150	μA
				$V_R = V_R$ Rated	
C_T	Junction Capacitance, $V_R = 200\text{V}$		N/A	500	pF
				$V_R = V_R$ Rated, $T_J = 125^\circ\text{C}$	
L_S	Series Inductance (Lead to Lead 5mm from Base)		N/A		nH

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DYNAMIC CHARACTERISTICS

APT15D40K

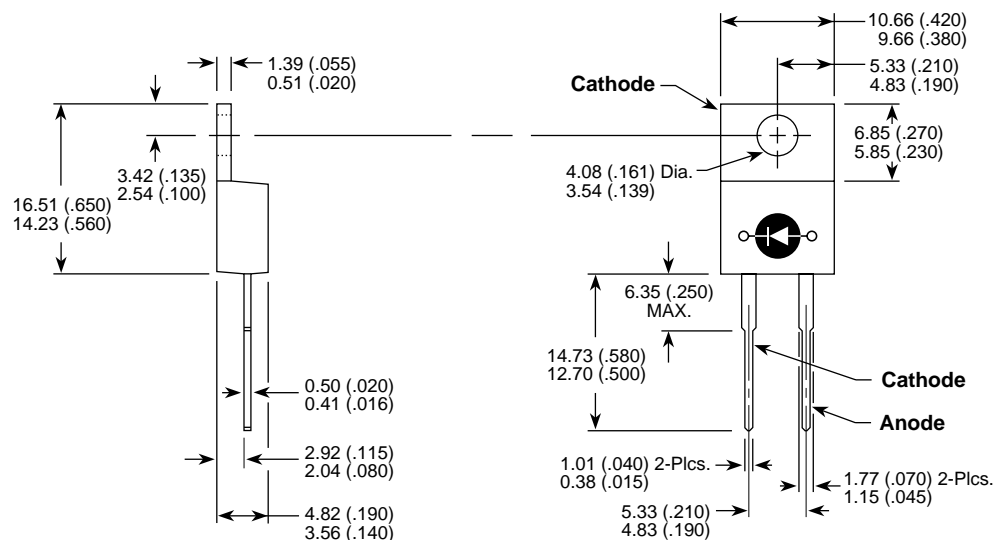
Symbol	Characteristic	MIN	TYP	MAX	UNIT
t_{rr1}	Reverse Recovery Time, $I_F = 1.0A$, $di_F/dt = -15A/\mu s$, $V_R = 30V$, $T_J = 25^\circ C$		40	50	ns
t_{rr2}	Reverse Recovery Time	$T_J = 25^\circ C$	40		
t_{rr3}	$I_F = 15A$, $di_F/dt = -100A/\mu s$, $V_R = 240V$	$T_J = 100^\circ C$	70		
t_{fr1}	Forward Recovery Time	$T_J = 25^\circ C$	170		
t_{fr2}	$I_F = 15A$, $di_F/dt = 100A/\mu s$, $V_R = 240V$	$T_J = 100^\circ C$	170		
I_{RRM1}	Reverse Recovery Current	$T_J = 25^\circ C$	2.8	5	Amps
I_{RRM2}	$I_F = 15A$, $di_F/dt = -100A/\mu s$, $V_R = 240V$	$T_J = 100^\circ C$	5	10	
Q_{rr1}	Recovery Charge	$T_J = 25^\circ C$	56		nC
Q_{rr2}	$I_F = 15A$, $di_F/dt = -100A/\mu s$, $V_R = 240V$	$T_J = 100^\circ C$	175		
V_{fr1}	Forward Recovery Voltage	$T_J = 25^\circ C$	1.6		Volts
V_{fr2}	$I_F = 15A$, $di_F/dt = 100A/\mu s$, $V_R = 240V$	$T_J = 100^\circ C$	1.6		
diM/dt	Rate of Fall of Recovery Current	$T_J = 25^\circ C$	150		A/ μs
	$I_F = 15A$, $di_F/dt = -100A/\mu s$, $V_R = 240V$ (See Figure 10)	$T_J = 100^\circ C$	100		

THERMAL AND MECHANICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Junction-to-Case Thermal Resistance			1.7	$^\circ C/W$
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance			80	
W_T	Package Weight		0.07		oz
				1.9	gm
Torque	Maximum Mounting Torque (Screw Type = 6-32 or 3.5mm Machine)			6.4	lb•in
				0.7	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)