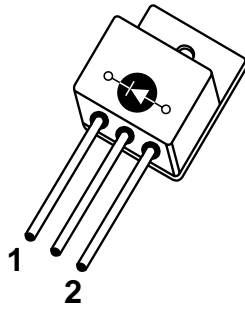


1 - Cathode
2 - Anode
Case Isolated



**ADVANCED
POWER
TECHNOLOGY®**
APT30D40H 400V 30A

ULTRAFAST SOFT RECOVERY RECTIFIER DIODE

PRODUCT APPLICATIONS	PRODUCT FEATURES	PRODUCT BENEFITS
<ul style="list-style-type: none"> • Anti-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) • Induction Heating • High Speed Rectifiers 	<ul style="list-style-type: none"> • Ultrafast Recovery Times • Soft Recovery Characteristics • Popular TO-258 Package • 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	APT30D40H	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 ($T_C = 105^\circ\text{C}$, Duty Cycle = 0.5)	30	Amps
$I_F(RMS)$	RMS Forward Current	70	
I_{FSM}	Non-Repetitive Forward Surge Current ($T_J = 45^\circ\text{C}$, 8.3ms)	320	
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			1.75	Volts
				$I_F = 30\text{A}$	
				$I_F = 60\text{A}$	
I_{RM}	Maximum Reverse Leakage Current			250	μA
				$V_R = V_R$ Rated	
				$V_R = V_R$ Rated, $T_J = 125^\circ\text{C}$	
C_T	Junction Capacitance, $V_R = 200\text{V}$		52		pF
L_S	Series Inductance (Lead to Lead 5mm from Base)		10		nH

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DYNAMIC CHARACTERISTICS

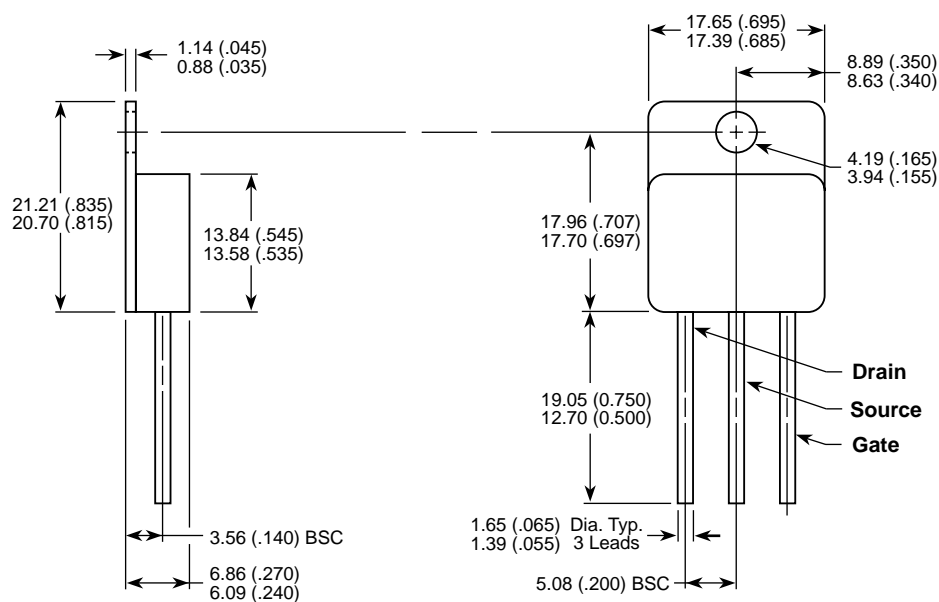
APT30D40H

Symbol	Characteristic	MIN	TYP	MAX	UNIT
t_{rr1}	Reverse Recovery Time, $I_F = 1.0A$, $di_F/dt = -15A/\mu s$, $V_R = 30V$, $T_J = 25^\circ C$		45	65	ns
t_{rr2}	Reverse Recovery Time	$T_J = 25^\circ C$	45		
t_{rr3}	$I_F = 30A$, $di_F/dt = -240A/\mu s$, $V_R = 240V$	$T_J = 100^\circ C$	70		
t_{fr1}	Forward Recovery Time	$T_J = 25^\circ C$	150		
t_{fr2}	$I_F = 30A$, $di_F/dt = 240A/\mu s$, $V_R = 240V$	$T_J = 100^\circ C$	150		
I_{RRM1}	Reverse Recovery Current	$T_J = 25^\circ C$	6	10	Amps
I_{RRM2}	$I_F = 30A$, $di_F/dt = -240A/\mu s$, $V_R = 240V$	$T_J = 100^\circ C$	10	18	
Q_{rr1}	Recovery Charge	$T_J = 25^\circ C$	135		nC
Q_{rr2}	$I_F = 30A$, $di_F/dt = -240A/\mu s$, $V_R = 240V$	$T_J = 100^\circ C$	350		
V_{fr1}	Forward Recovery Voltage	$T_J = 25^\circ C$	3.2		Volts
V_{fr2}	$I_F = 30A$, $di_F/dt = 240A/\mu s$, $V_R = 240V$	$T_J = 100^\circ C$	3.2		
diM/dt	Rate of Fall of Recovery Current	$T_J = 25^\circ C$	500		A/ μs
	$I_F = 30A$, $di_F/dt = -240A/\mu s$, $V_R = 240V$ (See Figure 10)	$T_J = 100^\circ C$	500		

THERMAL AND MECHANICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Junction-to-Case Thermal Resistance			0.90	$^\circ C/W$
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance			40	
W_T	Package Weight		0.22		oz
			6.1		gm

TO-258 Package Outline



Dimensions in Millimeters and (Inches)