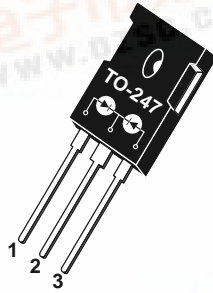


- 1 - Anode 1
- 2 - Common Cathode
Back of Case - Cathode
- 3 - Anode 2



ULTRAFAST SOFT RECOVERY RECTIFIER DIODES

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) • Induction Heating • High Speed Rectifiers 	<ul style="list-style-type: none"> • Ultrafast Recovery Times • Soft Recovery Characteristics • Popular TO-247 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 Are Per Leg: $T_C = 25^\circ\text{C}$ unless otherwise specified.

Symbol	Characteristic / Test Conditions	APT30D20BCT	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 ($T_C = 85^\circ\text{C}$, 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			$I_F = 30\text{A}$	1.15
				$I_F = 60\text{A}$	1.05
				$I_F = 30\text{A}, T_J = 150^\circ\text{C}$	1.0
I_{RM}	Maximum Reverse Leakage Current			$V_R = V_R \text{ Rated}$	250
				$V_R = V_R \text{ Rated}, T_J = 125^\circ\text{C}$	500
C_T	Junction Capacitance, $V_R = 150\text{V}$		110		pF
L_S	Series Inductance (Lead to Lead 5mm from Base)		10		nH



DYNAMIC CHARACTERISTICS

APT30D20BCT

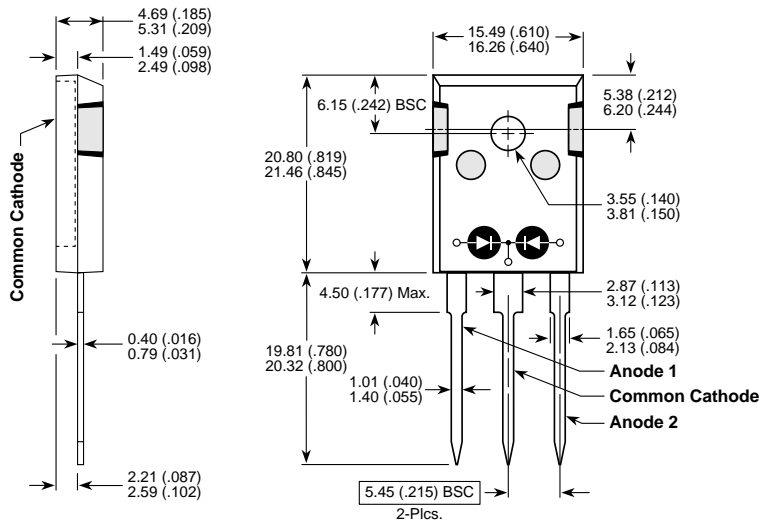
Symbol	Characteristic	MIN	TYP	MAX	UNIT
t_{rr1}	Reverse Recovery Time, $I_F = 1.0A$, $di_F/dt = -15A/\mu s$, $V_R = 30V$, $T_J = 25^\circ C$		35	50	ns
t_{rr2}	Reverse Recovery Time	$T_J = 25^\circ C$	40		
t_{rr3}	$I_F = 30A$, $di_F/dt = -240A/\mu s$, $V_R = 100V$	$T_J = 100^\circ C$	60		
t_{fr1}	Forward Recovery Time	$T_J = 25^\circ C$	155		
t_{fr2}	$I_F = 30A$, $di_F/dt = 240A/\mu s$, $V_R = 100V$	$T_J = 100^\circ C$	155		
I_{RRM1}	Reverse Recovery Current	$T_J = 25^\circ C$	6	8	Amps
I_{RRM2}	$I_F = 30A$, $di_F/dt = -240A/\mu s$, $V_R = 100V$	$T_J = 100^\circ C$	10	13	
Q_{rr1}	Recovery Charge	$T_J = 25^\circ C$	120		nC
Q_{rr2}	$I_F = 30A$, $di_F/dt = -240A/\mu s$, $V_R = 100V$	$T_J = 100^\circ C$	300		
V_{fr1}	Forward Recovery Voltage	$T_J = 25^\circ C$	2.5		Volts
V_{fr2}	$I_F = 30A$, $di_F/dt = 240A/\mu s$, $V_R = 100V$	$T_J = 100^\circ C$	2.5		
diM/dt	Rate of Fall of Recovery Current	$T_J = 25^\circ C$	300		A/ μs
	$I_F = 30A$, $di_F/dt = -240A/\mu s$, $V_R = 100V$ (See Figure 10)	$T_J = 100^\circ C$	600		

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
Torque	Maximum Mounting Torque (Screw Type = 6-32 or 3mm Machine)			10	lb•in
				1.1	N•m

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

TO-247AD Package Outline



Dimensions in Millimeters and (Inches)