

DYNAMIC CHARACTERISTICS

APT30D120B(G)_S(G)

Symbol	Characteristic	Test Conditions	MIN	TYP	MAX	UNIT
t_{rr}	Reverse Recovery Time	$I_F = 1A$, $di_F/dt = -100A/\mu s$, $V_R = 30V$, $T_J = 25^\circ C$	-	31		ns
t_{rr}	Reverse Recovery Time	$I_F = 30A$, $di_F/dt = -200A/\mu s$ $V_R = 800V$, $T_C = 25^\circ C$	-	370		
Q_{rr}	Reverse Recovery Charge		-	660		nC
I_{RRM}	Maximum Reverse Recovery Current		-	5	-	Amps
t_{rr}	Reverse Recovery Time	$I_F = 30A$, $di_F/dt = -200A/\mu s$ $V_R = 800V$, $T_C = 125^\circ C$	-	500		ns
Q_{rr}	Reverse Recovery Charge		-	3450		nC
I_{RRM}	Maximum Reverse Recovery Current		-	12	-	Amps
t_{rr}	Reverse Recovery Time	$I_F = 30A$, $di_F/dt = -1000A/\mu s$ $V_R = 800V$, $T_C = 125^\circ C$	-	220		ns
Q_{rr}	Reverse Recovery Charge		-	4650		nC
I_{RRM}	Maximum Reverse Recovery Current		-	37		Amps

THERMAL AND MECHANICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Junction-to-Case Thermal Resistance			.61	$^\circ C/W$
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance			40	
W_T	Package Weight		0.22		oz
			5.9		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.

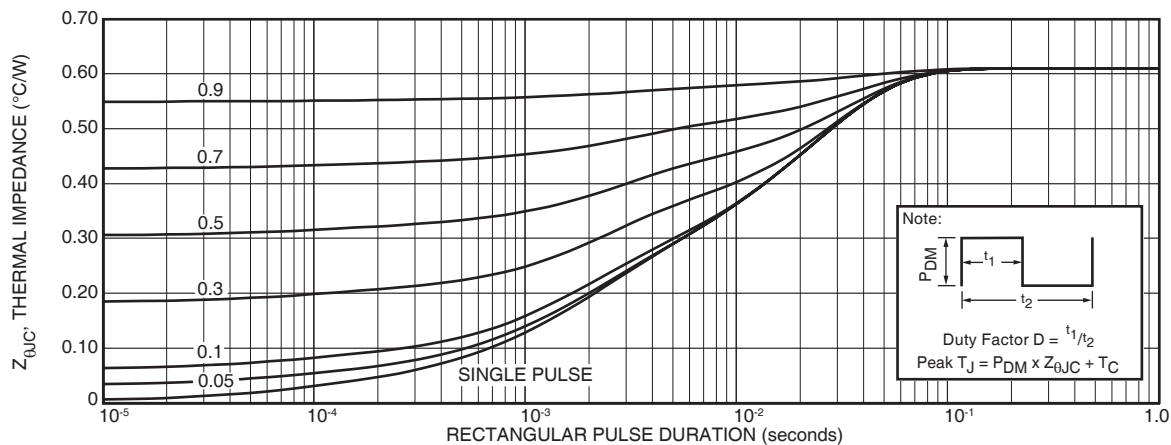


FIGURE 1a. MAXIMUM EFFECTIVE TRANSIENT THERMAL IMPEDANCE, JUNCTION-TO-CASE vs. PULSE DURATION

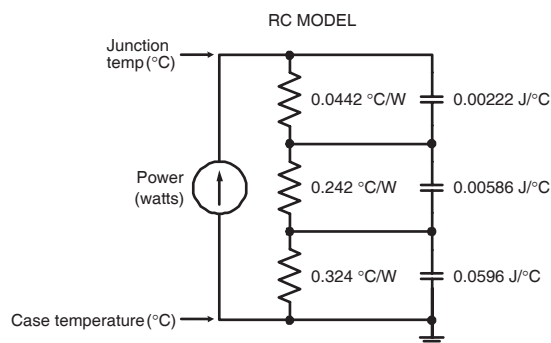


FIGURE 1b. TRANSIENT THERMAL IMPEDANCE MODEL

TYPICAL PERFORMANCE CURVES

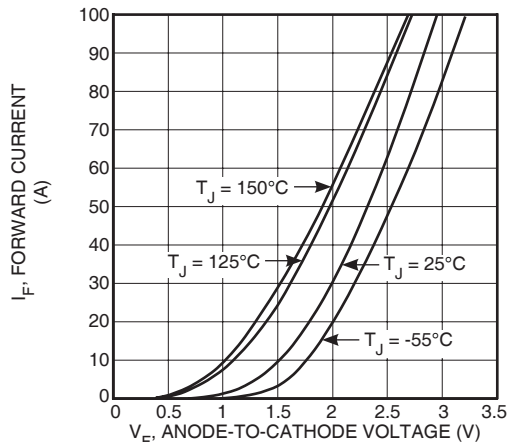


Figure 2. Forward Current vs. Forward Voltage

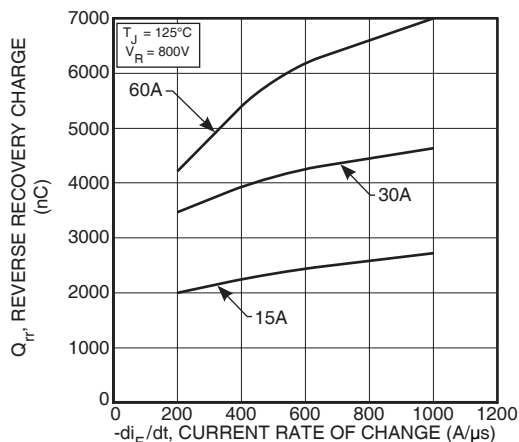


Figure 4. Reverse Recovery Charge vs. Current Rate of Change

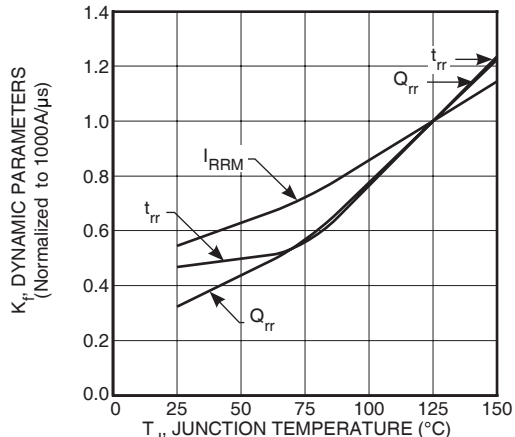


Figure 6. Dynamic Parameters vs. Junction Temperature

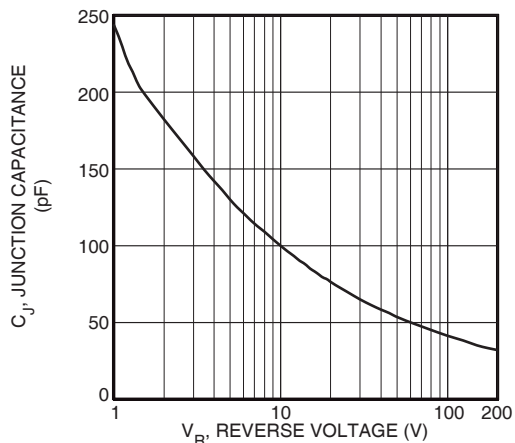


Figure 8. Junction Capacitance vs. Reverse Voltage

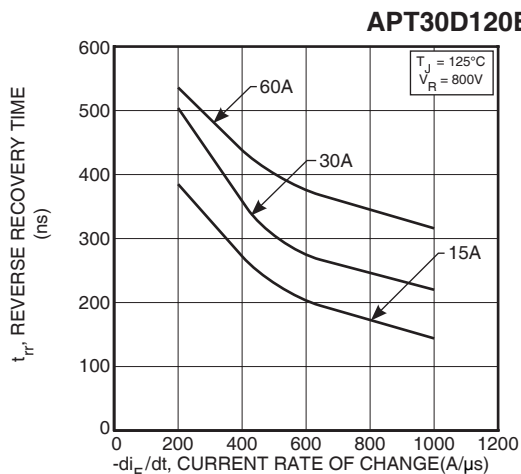


Figure 3. Reverse Recovery Time vs. Current Rate of Change

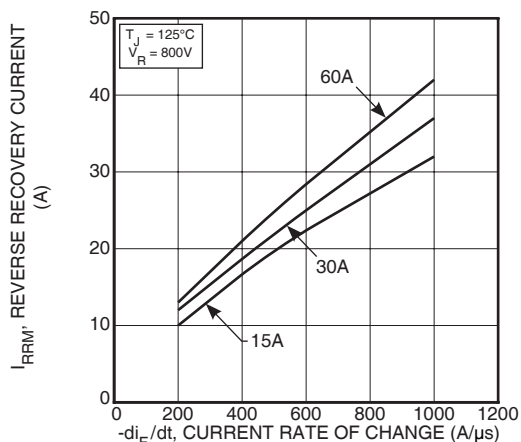


Figure 5. Reverse Recovery Current vs. Current Rate of Change

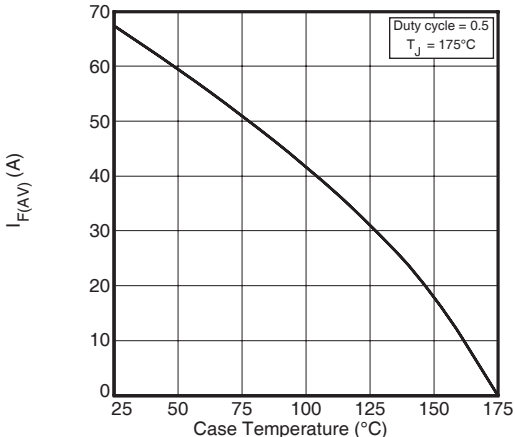


Figure 7. Maximum Average Forward Current vs. Case Temperature

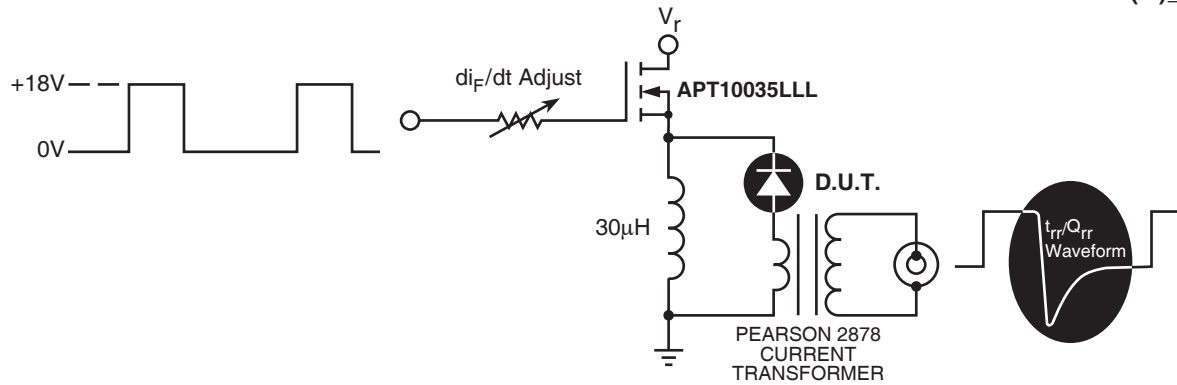


Figure 9. Diode Test Circuit

- 1 I_F - Forward Conduction Current
- 2 di_F/dt - Rate of Diode Current Change Through Zero Crossing.
- 3 I_{RRM} - Maximum Reverse Recovery Current.
- 4 t_{rr} - Reverse Recovery Time, measured from zero crossing where diode current goes from positive to negative, to the point at which the straight line through I_{RRM} and $0.25 \cdot I_{RRM}$ passes through zero.
- 5 Q_{rr} - Area Under the Curve Defined by I_{RRM} and t_{rr} .

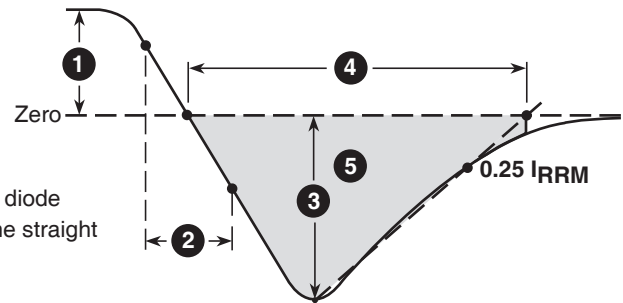
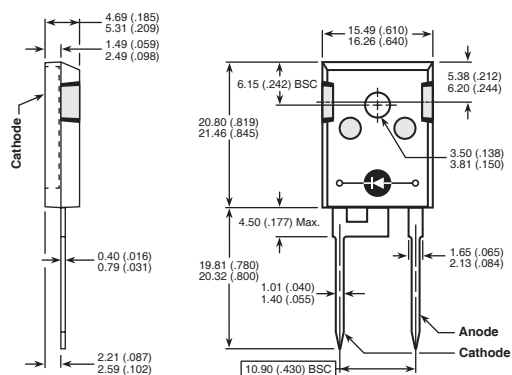


Figure 10. Diode Reverse Recovery Waveform and Definitions

TO-247 Package Outline

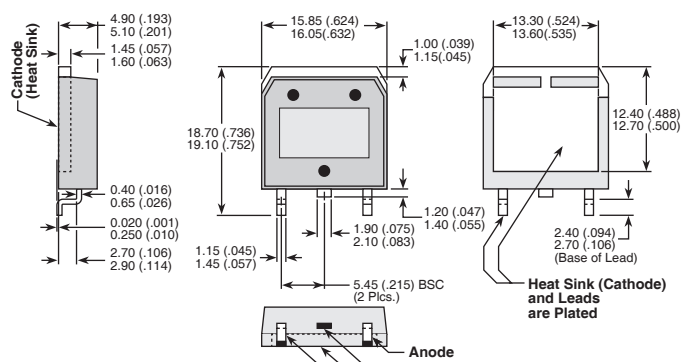
Ⓔ1 SAC: Tin, Silver, Copper



Dimensions in Millimeters and (Inches)

D³PAK Package Outline

Ⓔ3 100% Sn



Dimensions in Millimeters (Inches)