

**DYNAMIC CHARACTERISTICS**

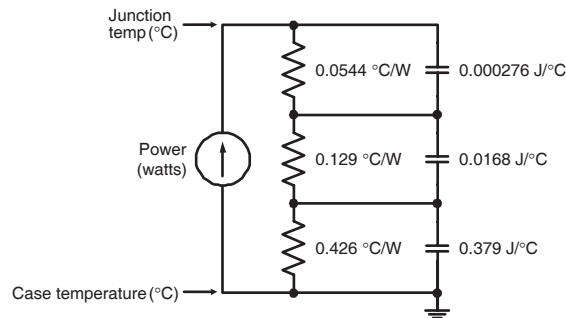
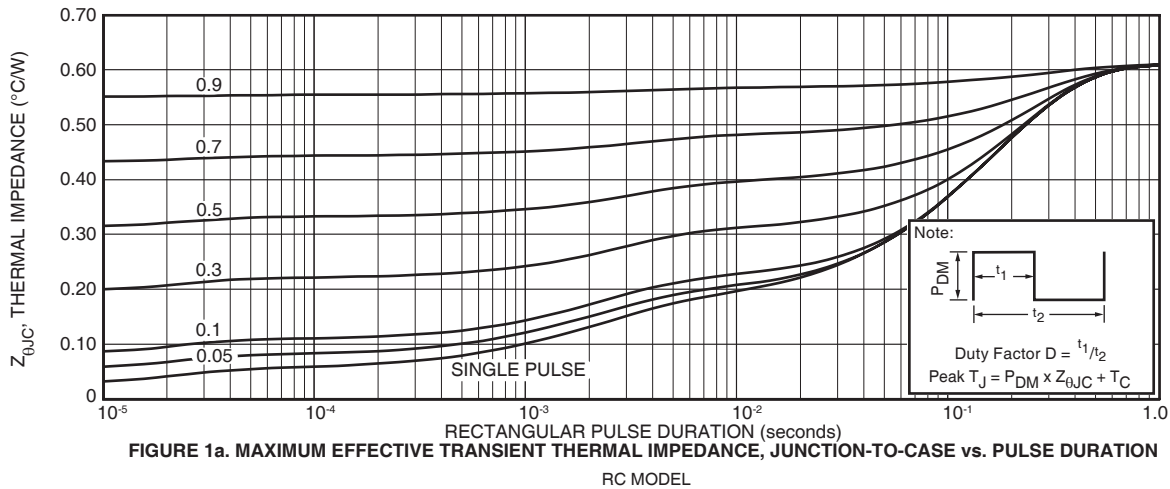
**APT30D100BCT(G)**

Symbol	Characteristic	Test Conditions	MIN	TYP	MAX	UNIT
$t_{rr}$	Reverse Recovery Time	$I_F = 1A, di_F/dt = -100A/\mu s, V_R = 30V, T_J = 25^\circ C$	-	29		ns
$t_{rr}$	Reverse Recovery Time	$I_F = XA, di_F/dt = -200A/\mu s, V_R = X00V, T_C = 25^\circ C$	-	290		
$Q_{rr}$	Reverse Recovery Charge		-	670		nC
$I_{RRM}$	Maximum Reverse Recovery Current		-	5	-	Amps
$t_{rr}$	Reverse Recovery Time	$I_F = XA, di_F/dt = -200A/\mu s, V_R = X00V, T_C = 125^\circ C$	-	390		ns
$Q_{rr}$	Reverse Recovery Charge		-	2350		nC
$I_{RRM}$	Maximum Reverse Recovery Current		-	11	-	Amps
$t_{rr}$	Reverse Recovery Time	$I_F = XA, di_F/dt = -X000A/\mu s, V_R = X00V, T_C = 125^\circ C$	-	160		ns
$Q_{rr}$	Reverse Recovery Charge		-	3500		nC
$I_{RRM}$	Maximum Reverse Recovery Current		-	38		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.



# TYPICAL PERFORMANCE CURVES

APT30D100BCT(G)

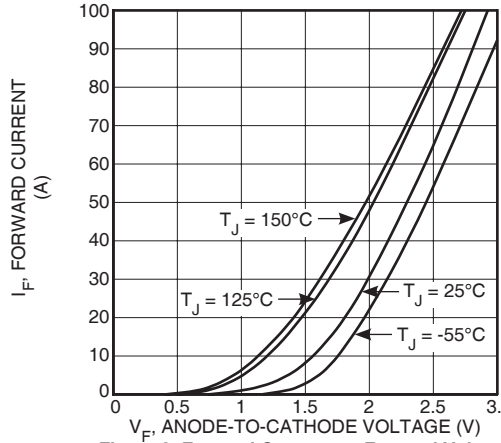


Figure 2. Forward Current vs. Forward Voltage

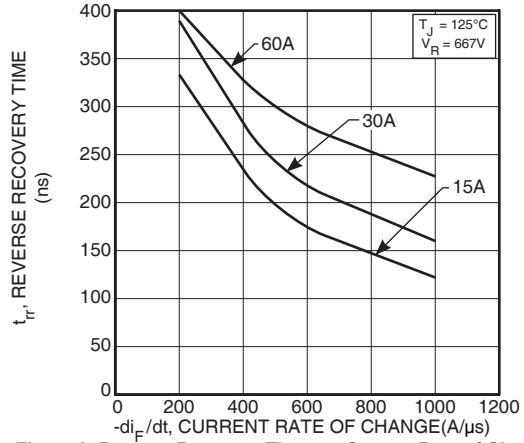


Figure 3. Reverse Recovery Time vs. Current Rate of Change

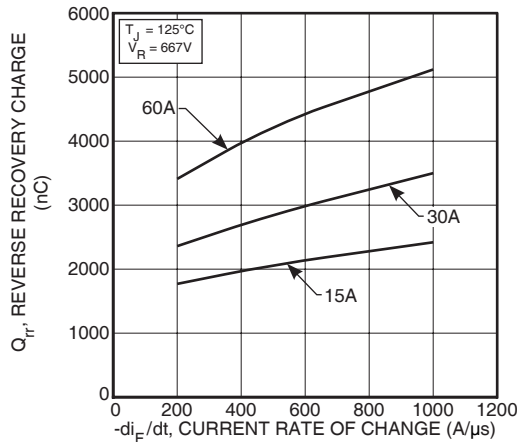


Figure 4. Reverse Recovery Charge vs. Current Rate of Change

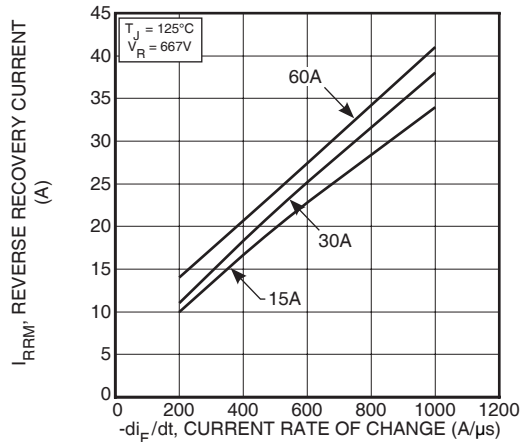


Figure 5. Reverse Recovery Current vs. Current Rate of Change

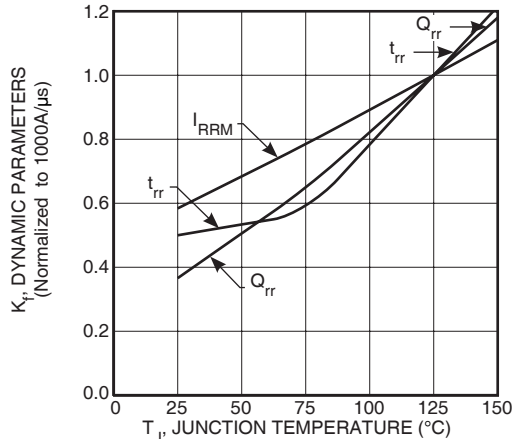


Figure 6. Dynamic Parameters vs. Junction Temperature

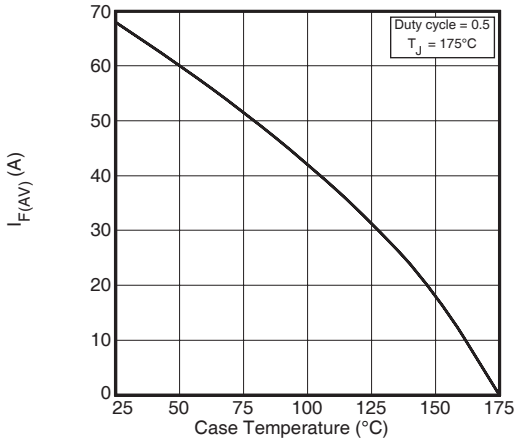


Figure 7. Maximum Average Forward Current vs. Case Temperature

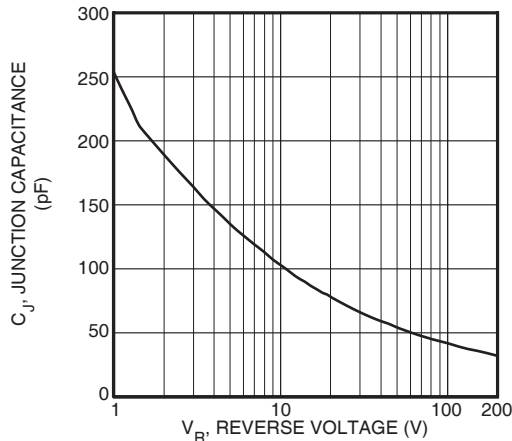


Figure 8. Junction Capacitance vs. Reverse Voltage

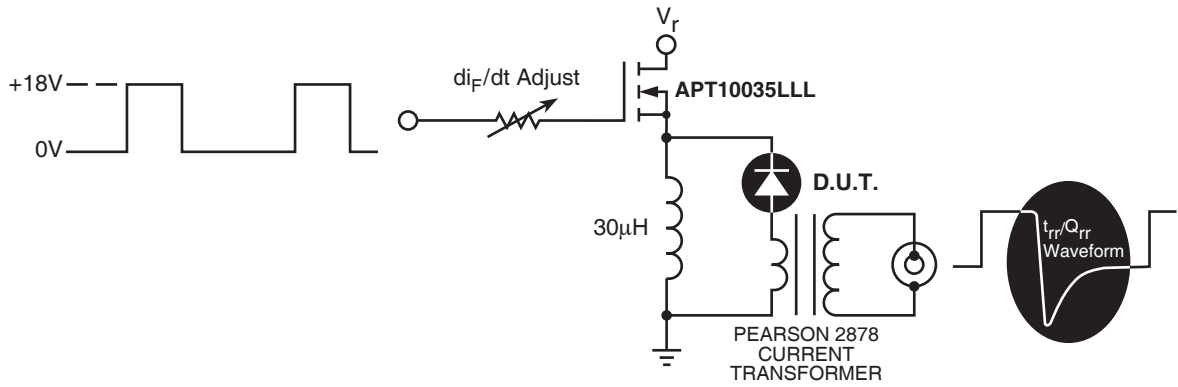


Figure 9. Diode Test Circuit

- 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  $t_{rr}$ .

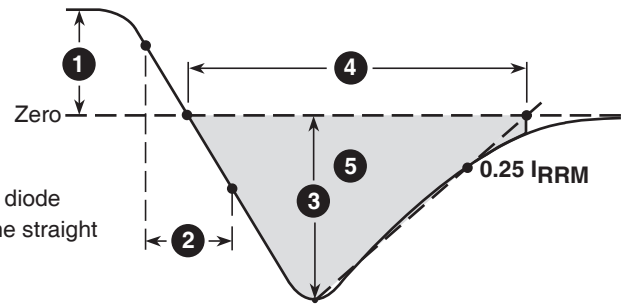
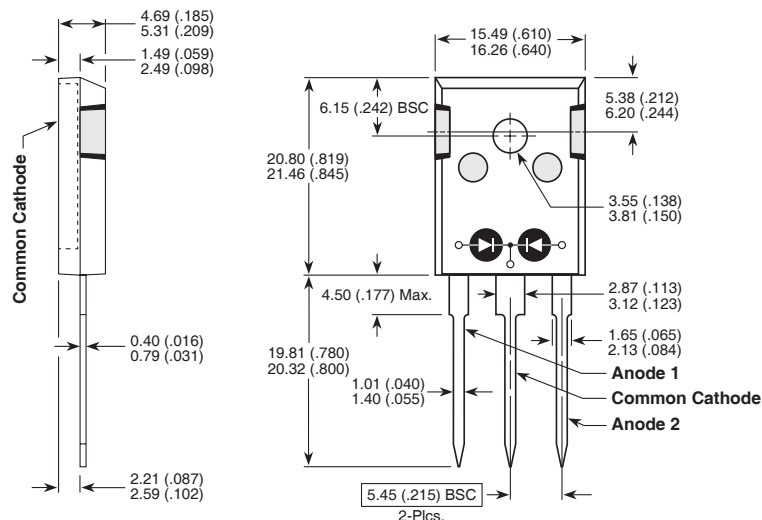


Figure 10, Diode Reverse Recovery Waveform and Definitions

### TO-247 Package Outline

Ⓧ1 SAC: Tin, Silver, Copper



Dimensions in Millimeters and (Inches)

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