

DYNAMIC CHARACTERISTICS

APT15DQ60K

Symbol	Characteristic	Test Conditions	MIN	TYP	MAX	UNIT
t_{rr}	Reverse Recovery Time	$I_F = 1A$, $di_F/dt = -100A/\mu s$, $V_R = 30V$, $T_J = 25^\circ C$	-	15		ns
t_{rr}	Reverse Recovery Time	$I_F = 15A$, $di_F/dt = -200A/\mu s$ $V_R = 400V$, $T_C = 25^\circ C$	-	19		
Q_{rr}	Reverse Recovery Charge		-	21		nC
I_{RRM}	Maximum Reverse Recovery Current		-	2	-	Amps
t_{rr}	Reverse Recovery Time	$I_F = 15A$, $di_F/dt = -200A/\mu s$ $V_R = 400V$, $T_C = 125^\circ C$	-	105		ns
Q_{rr}	Reverse Recovery Charge		-	250		nC
I_{RRM}	Maximum Reverse Recovery Current		-	5	-	Amps
t_{rr}	Reverse Recovery Time	$I_F = 15A$, $di_F/dt = -1000A/\mu s$ $V_R = 400V$, $T_C = 125^\circ C$	-	55		ns
Q_{rr}	Reverse Recovery Charge		-	420		nC
I_{RRM}	Maximum Reverse Recovery Current		-	15		Amps

THERMAL AND MECHANICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Junction-to-Case Thermal Resistance			1.35	$^\circ C/W$
W_T	Package Weight		0.07		oz
			1.9		g
Torque	Maximum Mounting Torque			10	lb•in
				1.1	N•m

Microsemi reserves the right to change, without notice, the specifications and information contained herein.

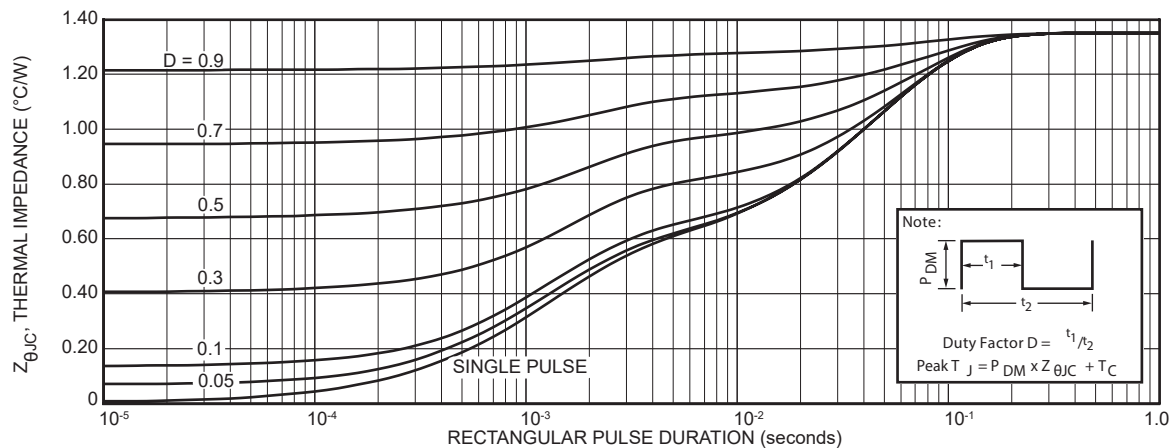


FIGURE 1a. MAXIMUM EFFECTIVE TRANSIENT THERMAL IMPEDANCE, JUNCTION-TO-CASE vs. PULSE DURATION

TYPICAL PERFORMANCE CURVES

APT15DQ60K(G)

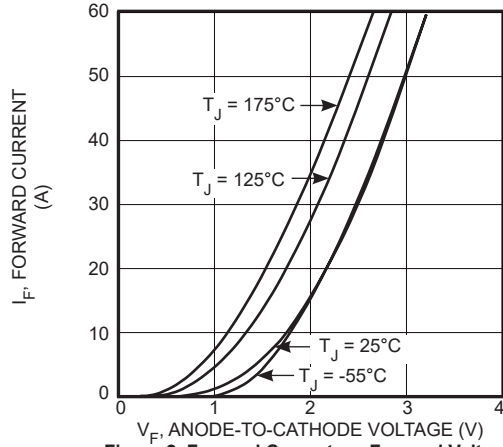


Figure 2. Forward Current vs. Forward Voltage

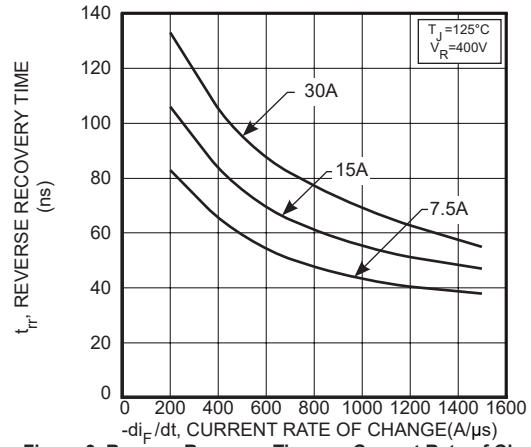


Figure 3. Reverse Recovery Time vs. Current Rate of Change

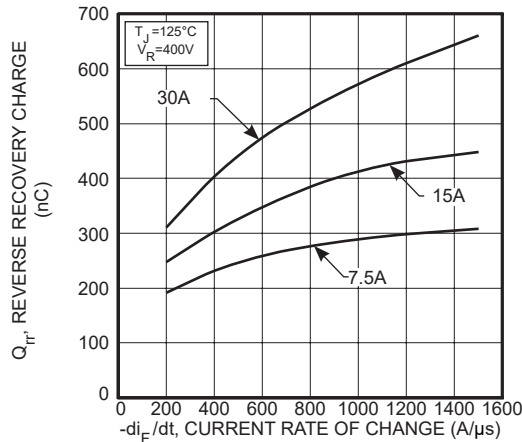


Figure 4. Reverse Recovery Charge vs. Current Rate of Change

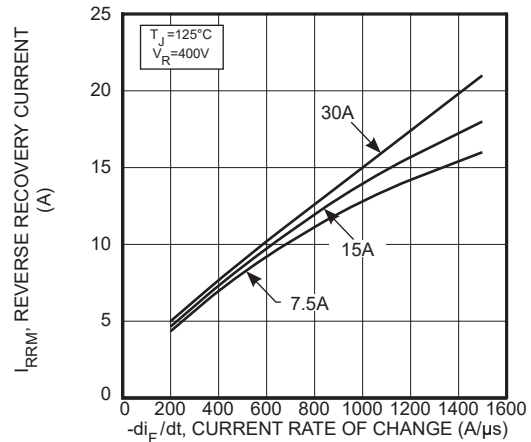


Figure 5. Reverse Recovery Current vs. Current Rate of Change

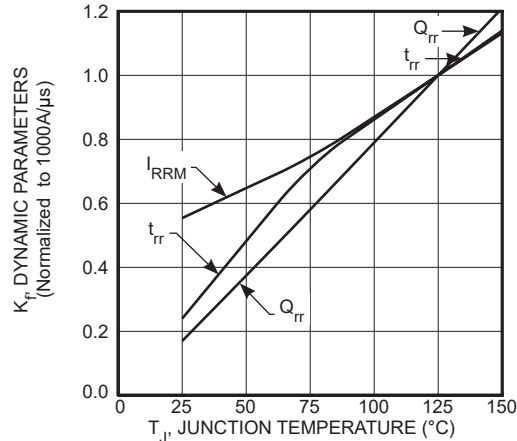


Figure 6. Dynamic Parameters vs. Junction Temperature

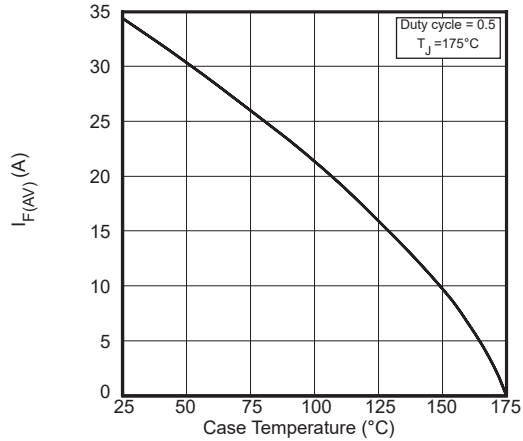


Figure 7. Maximum Average Forward Current vs. Case Temperature

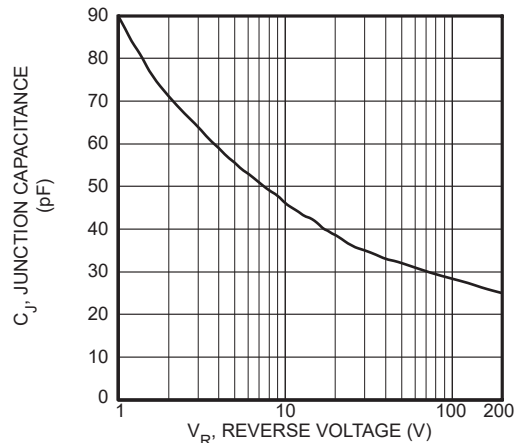


Figure 8. Junction Capacitance vs. Reverse Voltage

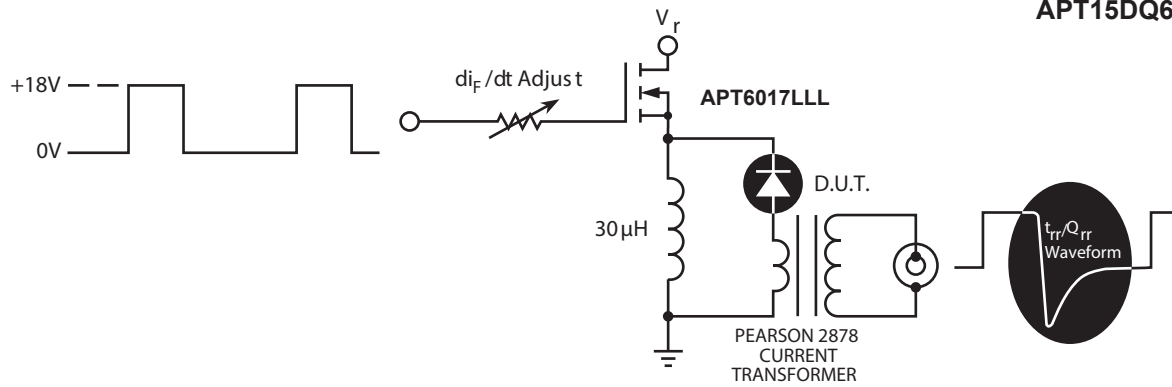


Figure 9. Diode Test Circuit

- 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 $0.25 I_{RRM}$ passes through zero.
- 5 Q_{rr} - Area Under the Curve Defined by I_{RRM} and t_{rr} .

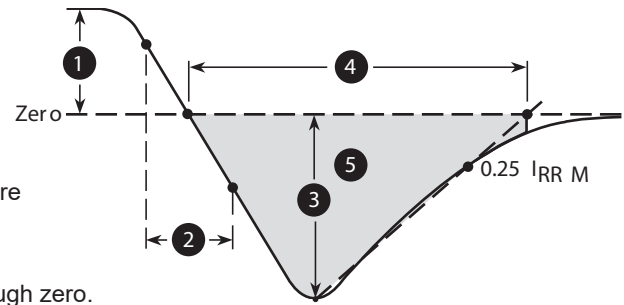
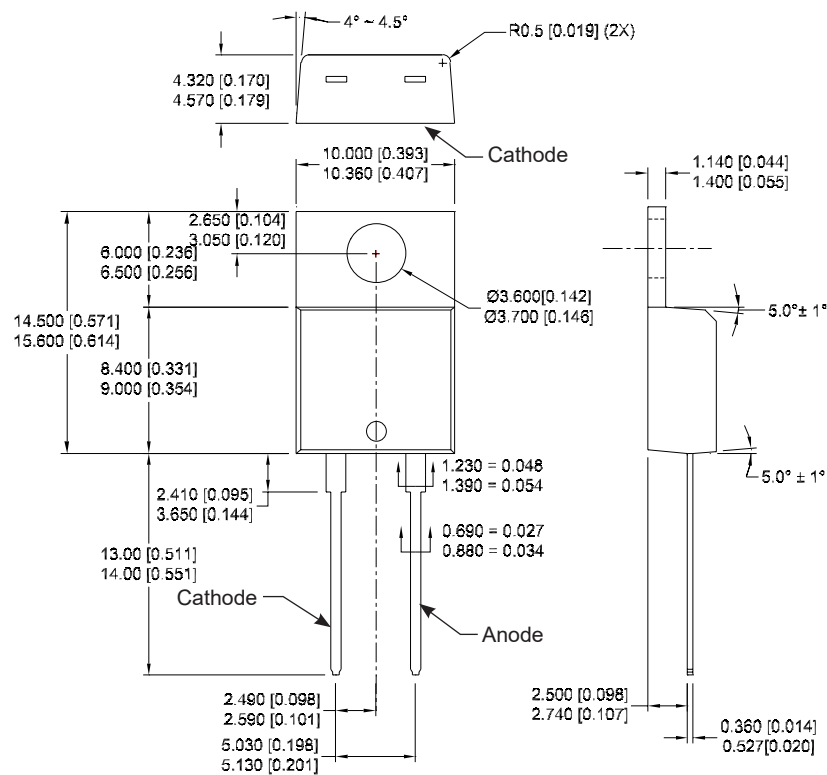


Figure 10. Diode Reverse Recovery Waveform Definition

TO-220 (K) Package Outline

e3 100% Sn



Dimensions in millimeters and [inches]