

Symbol	Characteristic	Test Conditions	MIN	TYP	MAX	UNIT
t_{rr}	Reverse Recovery Time	$I_F = 1A$, $di_F/dt = -100A/\mu s$, $V_R = 30V$, $T_J = 25^\circ C$	-	60		ns
t_{rr}	Reverse Recovery Time	$I_F = 60A$, $di_F/dt = -200A/\mu s$ $V_R = 800V$, $T_C = 25^\circ C$	-	265		
Q_{rr}	Reverse Recovery Charge		-	560		nC
I_{RRM}	Maximum Reverse Recovery Current		-	5	-	Amps
t_{rr}	Reverse Recovery Time	$I_F = 60A$, $di_F/dt = -200A/\mu s$ $V_R = 800V$, $T_C = 125^\circ C$	-	350		ns
Q_{rr}	Reverse Recovery Charge		-	2890		nC
I_{RRM}	Maximum Reverse Recovery Current		-	13	-	Amps
t_{rr}	Reverse Recovery Time	$I_F = 60A$, $di_F/dt = -1000A/\mu s$ $V_R = 800V$, $T_C = 125^\circ C$	-	150		ns
Q_{rr}	Reverse Recovery Charge		-	4720		nC
I_{RRM}	Maximum Reverse Recovery Current		-	40		Amps

THERMAL AND MECHANICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Junction-to-Case Thermal Resistance			.56	$^\circ C/W$
$V_{Isolation}$	RMS Voltage (50-60Hz Sinusoidal Waveform from Terminals to Mounting Base for 1 Min.)	2500			Volts
W_T	Package Weight		1.03		oz
			29.2		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.

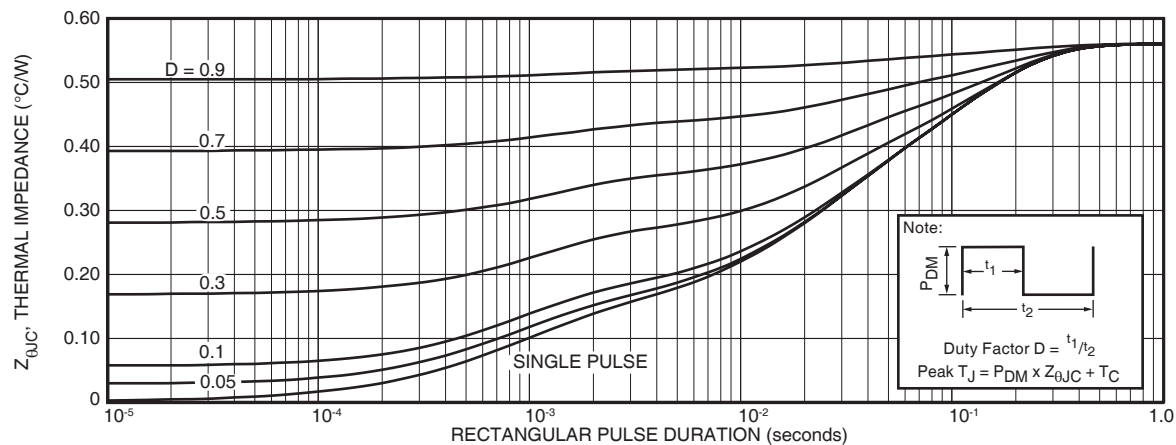


FIGURE 1a. MAXIMUM EFFECTIVE TRANSIENT THERMAL IMPEDANCE, JUNCTION-TO-CASE vs. PULSE DURATION

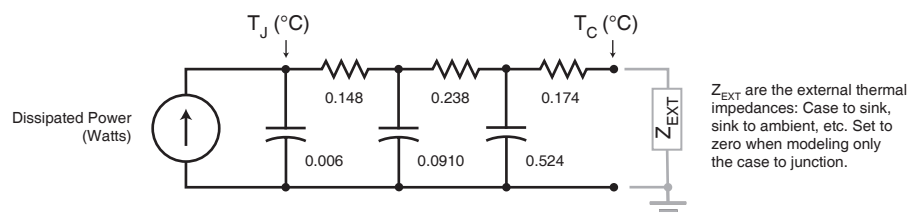


FIGURE 1b. TRANSIENT THERMAL IMPEDANCE MODEL

TYPICAL PERFORMANCE CURVES

APT2x61_60DQ120J

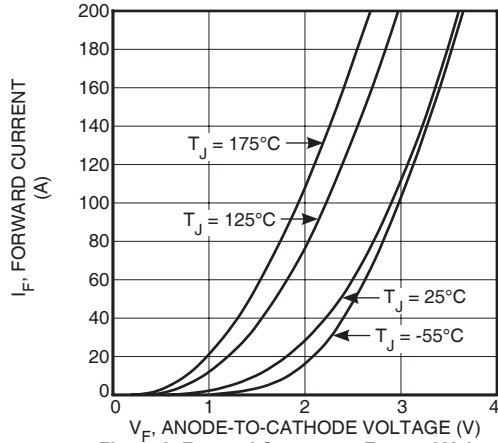


Figure 2. Forward Current vs. Forward Voltage

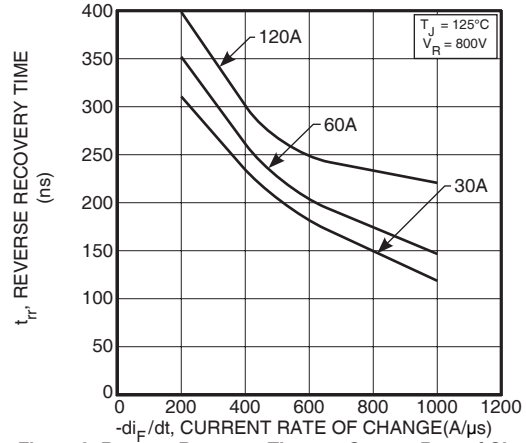


Figure 3. Reverse Recovery Time vs. Current Rate of Change

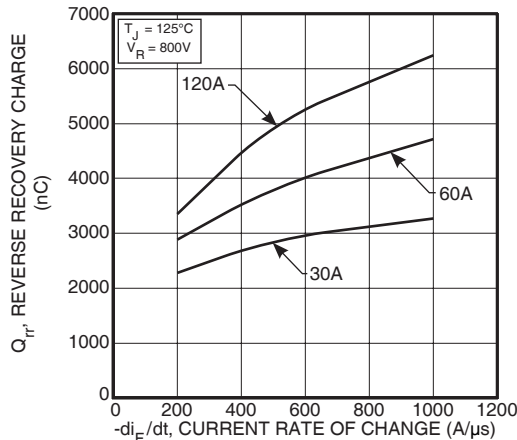


Figure 4. Reverse Recovery Charge vs. Current Rate of Change

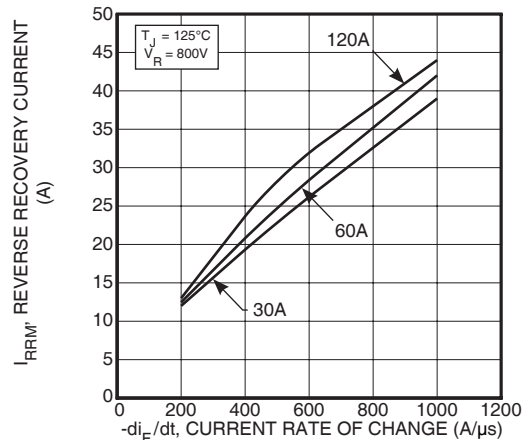


Figure 5. Reverse Recovery Current vs. Current Rate of Change

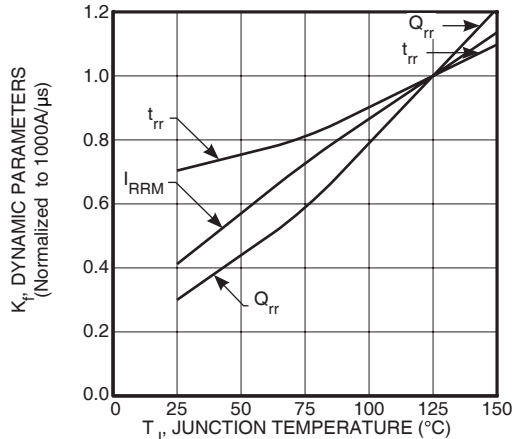


Figure 6. Dynamic Parameters vs. Junction Temperature

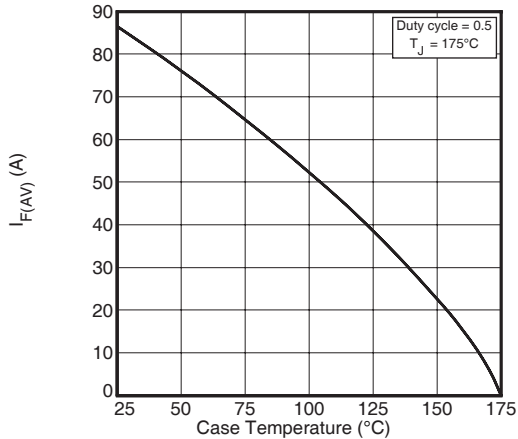


Figure 7. Maximum Average Forward Current vs. Case Temperature

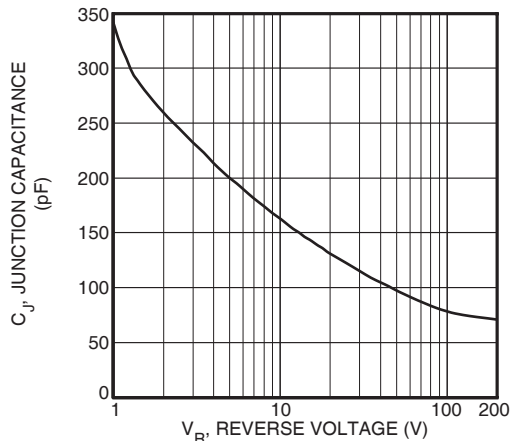


Figure 8. Junction Capacitance vs. Reverse Voltage



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Figure 10, Diode Reverse Recovery Waveform and Definitions

Technical drawing of the APT2x60DQ120J and APT2x61DQ120J components, showing dimensions in millimeters and inches.

Top View Dimensions:

- Overall width: 31.5 (1.240) / 31.7 (1.248)
- Distance between top features: 7.8 (.307) / 8.2 (.322)
- Radius: $r = 4.0 (.157)$ (2 places)
- Distance between bottom features: 4.0 (.157) / 4.2 (.165) (2 places)
- Distance between side features: 3.3 (.129) / 3.6 (.143)
- Distance between top features (inner): 14.9 (.587) / 15.1 (.594)
- Distance between bottom features (inner): 30.1 (1.185) / 30.3 (1.193)
- Overall width (inner): 38.0 (1.496) / 38.2 (1.504)

Side View Dimensions:

- Top width: 11.8 (.463) / 12.2 (.480)
- Distance between top features: 8.9 (.350) / 9.6 (.378)
- Hex Nut M4 H100 (4 places)
- Distance between bottom features: 0.75 (.030) / 0.85 (.033)
- Distance between top features (inner): 12.6 (.496) / 12.8 (.504)
- Overall height: 25.2 (0.992) / 25.4 (1.000)
- Bottom width: 1.95 (.077) / 2.14 (.084)

Cross-Sectional Views:

- Anti-parallel APT2x60DQ120J:** Shows the internal structure with Anode 2, Cathode 1, Cathode 2, and Anode 1.
- Parallel APT2x61DQ120J:** Shows the internal structure with Cathode 1, Anode 1, Cathode 2, and Anode 2.

Dimensions in Millimeters and (Inches)

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