

DYNAMIC CHARACTERISTICS

APT15DQ60(B/S)G

Symbol	Characteristic	Test Conditions	MIN	TYP	MAX	UNIT
t_{rr}	Reverse Recovery Time	$I_F = 1A, di_F/dt = -100A/\mu s, V_R = 30V, T_J = 25^\circ C$	-	15		ns
t_{rr}	Reverse Recovery Time		-	19		
Q_{rr}	Reverse Recovery Charge	$I_F = 15A, di_F/dt = -200A/\mu s, V_R = 400V, T_C = 25^\circ C$	-	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		0.22		oz
			5.9		g
Torque	Maximum Mounting Torque			10	lb•in
				1.1	N•m

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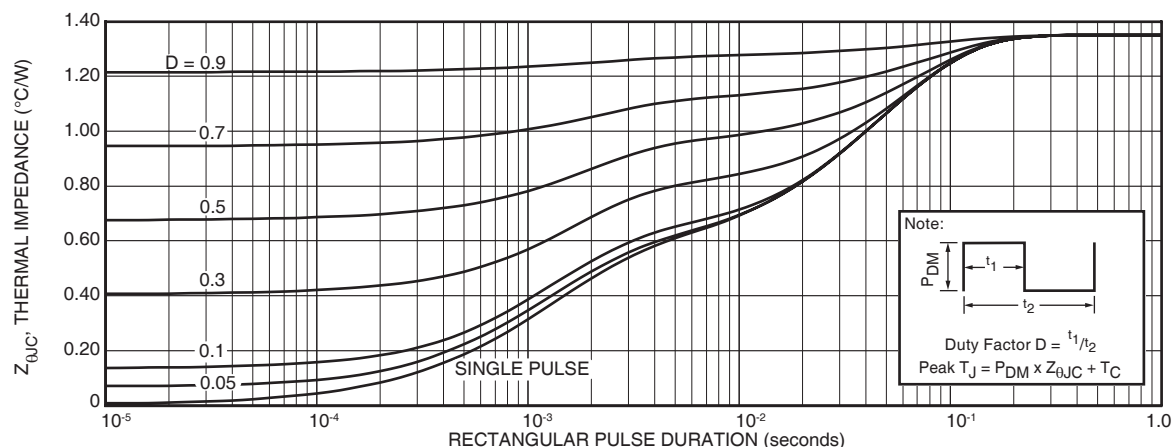


FIGURE 1a. MAXIMUM EFFECTIVE TRANSIENT THERMAL IMPEDANCE, JUNCTION-TO-CASE vs. PULSE DURATION

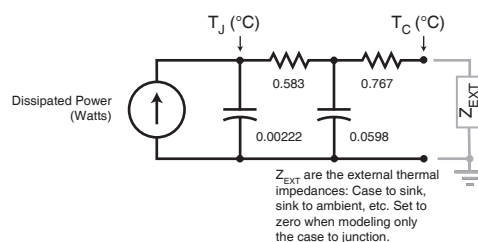


FIGURE 1b, TRANSIENT THERMAL IMPEDANCE MODEL

TYPICAL PERFORMANCE CURVES

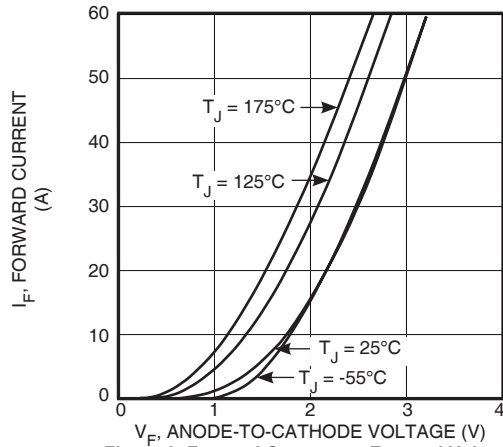


Figure 2. Forward Current vs. Forward Voltage

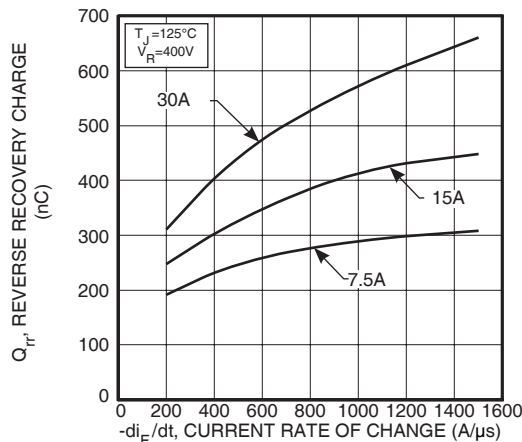


Figure 4. Reverse Recovery Charge vs. Current Rate of Change

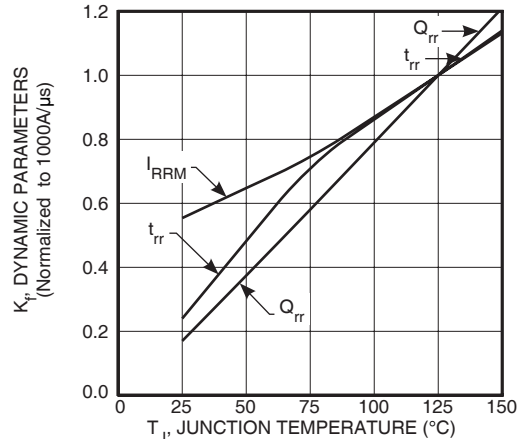


Figure 6. Dynamic Parameters vs. Junction Temperature

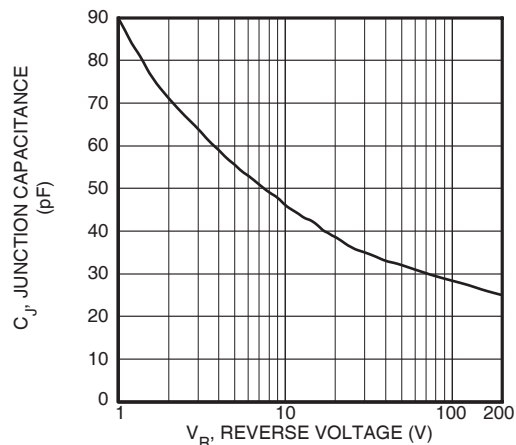


Figure 8. Junction Capacitance vs. Reverse Voltage

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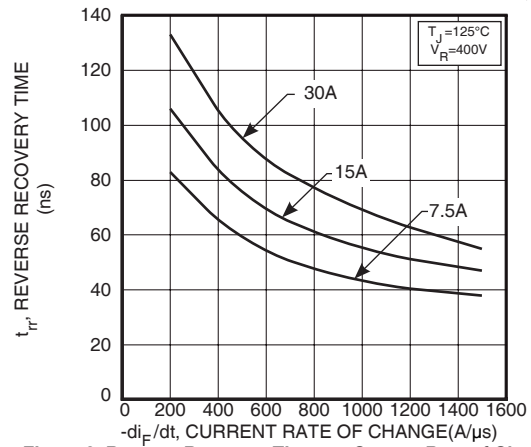


Figure 3. Reverse Recovery Time vs. Current Rate of Change

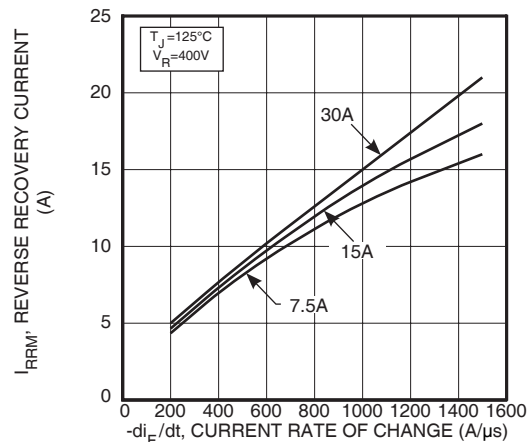


Figure 5. Reverse Recovery Current vs. Current Rate of Change

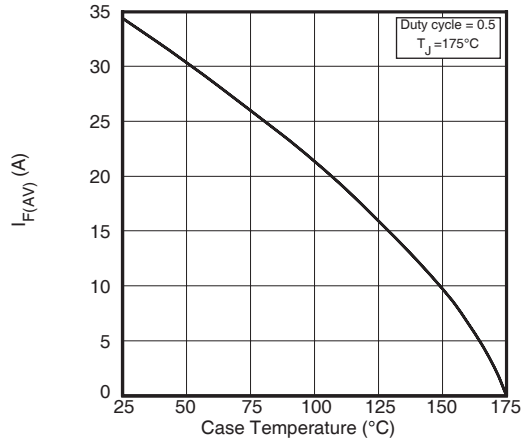


Figure 7. Maximum Average Forward Current vs. Case Temperature



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Figure 10, Diode Reverse Recovery Waveform and Definitions

D³PAK Package Outline

Technical drawing of the 1000 Series Cathode and Anode Assembly. The drawing shows a side view of the cathode on the left and a top view of the anode assembly on the right. Dimensions are provided in millimeters and inches. The cathode has a diameter of 4.69 (185) mm and 5.31 (.209) inches. The anode assembly has a diameter of 15.49 (.610) mm and 16.26 (.640) inches. The cathode is labeled 'Cathode' and the anode is labeled 'Anode'. The drawing also shows a 'Cathode' label at the bottom right. The dimensions are: 4.69 (185) mm, 5.31 (.209) inches, 1.49 (.059) mm, 2.49 (.098) inches, 15.49 (.610) mm, 16.26 (.640) inches, 6.15 (.242) BSC, 5.38 (.212) mm, 6.20 (.244) inches, 20.80 (.819) mm, 21.46 (.845) inches, 3.50 (.138) mm, 3.81 (.150) inches, 4.50 (.177) Max., 1.981 (.780) mm, 20.32 (.800) inches, 1.01 (.040) mm, 1.40 (.055) inches, 0.40 (.016) mm, 1.016 (.040) inches, 2.21 (.087) mm, 2.59 (.102) inches, 1.65 (.065) mm, 2.13 (.084) inches, 10.90 (.430) BSC.

Dimensions in Millimeters and (Inches)

Figure 1: Dimensions of the Cathode (Heat Sink) and Leads

Dimensions in Millimeters (Inches)

Side View Dimensions:

- Cathode (Heat Sink) height: 4.90 (.193), 5.10 (.201), 1.45 (.057), 1.60 (.063)
- Lead height: 0.40 (.016), 0.65 (.026), 0.020 (.001), 0.250 (.010)
- Lead width: 2.70 (.106), 2.90 (.114)

Top View Dimensions:

- Overall width: 15.85 (.624), 16.05 (.632)
- Lead width: 1.00 (.039), 1.15 (.045)
- Lead spacing: 1.20 (.047), 1.40 (.055)
- Lead width (Base of Lead): 2.40 (.094), 2.70 (.106)
- Overall height: 13.30 (.524), 13.60 (.535)
- Internal height: 12.40 (.488), 12.70 (.500)

Bottom View Dimensions:

- Lead width: 1.15 (.045), 1.45 (.057)
- Lead spacing: 1.90 (.075), 2.10 (.083)
- Lead width: 1.20 (.047), 1.40 (.055)
- Lead width (Base of Lead): 2.40 (.094), 2.70 (.106)
- Lead spacing: 5.45 (.215) BSC (2 Plcs.)

Labels:

- Cathode (Heat Sink)
- Heat Sink (Cathode) and Leads are Plated
- Anode Cathode



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