

阅读申明

- 1.本站收集的数据手册和产品资料都来自互联网，版权归原作者所有。如读者和版权方有任何异议请及时告之，我们将妥善解决。
- 2.本站提供的中文数据手册是英文数据手册的中文翻译，其目的是协助用户阅读，该译文无法自动跟随原稿更新，同时也可能存在翻译上的不当。建议读者以英文原稿为参考以便获得更精准的信息。
- 3.本站提供的产品资料，来自厂商的技术支持或者使用者的心得体会等，其内容可能存在描述上的差异，建议读者做出适当判断。
- 4.如需与我们联系，请发邮件到marketing@iczoom.com，主题请标有“数据手册”字样。

Read Statement

1. The datasheets and other product information on the site are all from network reference or other public materials, and the copyright belongs to the original author and original published source. If readers and copyright owners have any objections, please contact us and we will deal with it in a timely manner.
2. The Chinese datasheets provided on the website is a Chinese translation of the English datasheets. Its purpose is for reader's learning exchange only and do not involve commercial purposes. The translation cannot be automatically updated with the original manuscript, and there may also be improper translations. Readers are advised to use the English manuscript as a reference for more accurate information.
3. All product information provided on the website refer to solutions from manufacturers' technical support or users the contents may have differences in description, and readers are advised to take the original article as the standard.
4. If you have any questions, please contact us at marketing@iczoom.com and mark the subject with "Datasheets" .

ULTRAFAST SOFT RECOVERY RECTIFIER DIODE

PRODUCT APPLICATIONS

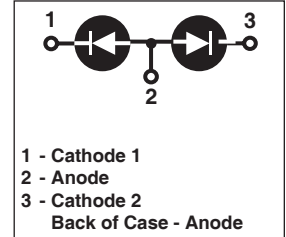
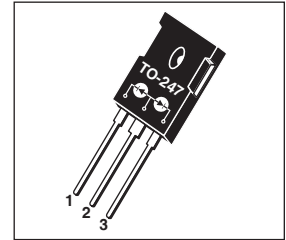
- Parallel Diode
 - Switchmode Power Supply
 - Inverters
- Free Wheeling Diode
 - Motor Controllers
 - Converters
 - Inverters
- Snubber Diode
- PFC

PRODUCT FEATURES

- Ultrafast Recovery Times
- Soft Recovery Characteristics
- Popular TO-247 Package
- Low Forward Voltage
- Low Leakage Current

PRODUCT BENEFITS

- Low Losses
- Low Noise Switching
- Cooler Operation
- Higher Reliability Systems
- Increased System Power Density



MAXIMUM RATINGS

 All Ratings Per Leg: $T_C = 25^\circ\text{C}$ unless otherwise specified.

Symbol	Characteristic / Test Conditions	APT30D100BCA(G)	UNIT
V_R	Maximum D.C. Reverse Voltage	1000	Volts
V_{RRM}	Maximum Peak Repetitive Reverse Voltage		
V_{RWM}	Maximum Working Peak Reverse Voltage		
$I_{F(AV)}$	Maximum Average Forward Current ($T_C = 105^\circ\text{C}$, Duty Cycle = 0.5)	18	Amps
$I_{F(RMS)}$	RMS Forward Current (Square wave, 50% duty)	27	
I_{FSM}	Non-Repetitive Forward Surge Current ($T_J = 45^\circ\text{C}$, 8.3ms)	210	
T_J, T_{STG}	Operating and Storage Temperature Range	-55 to 175	$^\circ\text{C}$
T_L	Lead Temperature for 10 Sec.	300	

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
V_F	Forward Voltage		1.9	2.3	Volts
		$I_F = 30\text{A}$			
		$I_F = 60\text{A}$			
I_{RM}	Maximum Reverse Leakage Current			250	μA
		$V_R = V_R$ Rated			
C_T	Junction Capacitance, $V_R = 200\text{V}$		32		pF
		$V_R = V_R$ Rated, $T_J = 125^\circ\text{C}$		500	

DYNAMIC CHARACTERISTICS

APT30D100BCA(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	$I_F = 30A, di_F/dt = -200A/\mu s, V_R = 667V, T_C = 25^\circ C$	-	290		
Q_{rr}	Reverse Recovery Charge		-	670		nC
I_{RRM}	Maximum Reverse Recovery Current		-	5	-	Amps
t_{rr}	Reverse Recovery Time	$I_F = 30A, di_F/dt = -200A/\mu s, V_R = 667V, T_C = 125^\circ C$	-	390		ns
Q_{rr}	Reverse Recovery Charge		-	2350		nC
I_{RRM}	Maximum Reverse Recovery Current		-	11	-	Amps
t_{rr}	Reverse Recovery Time	$I_F = 30A, di_F/dt = -1000A/\mu s, V_R = 667V, T_C = 125^\circ C$	-	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			1.8	$^\circ C/W$
$R_{\theta JA}$	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.

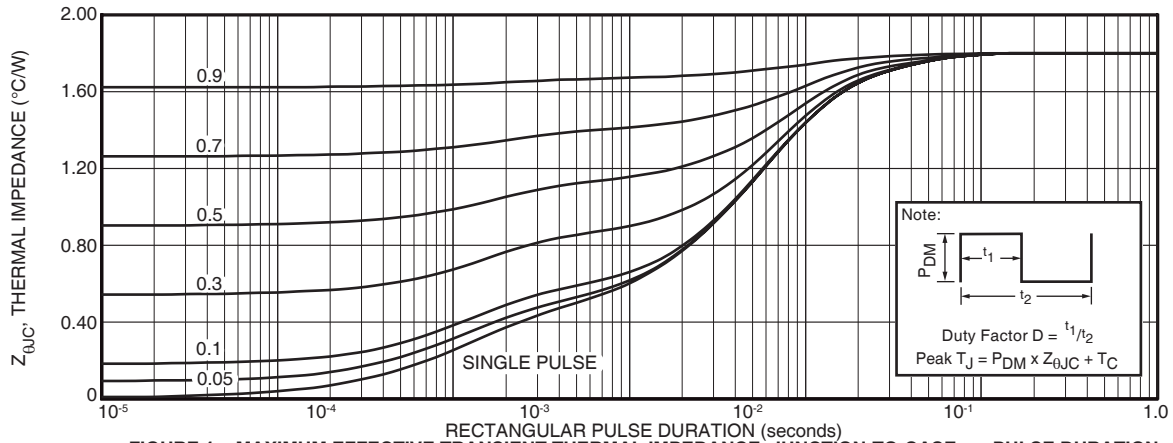


FIGURE 1a. MAXIMUM EFFECTIVE TRANSIENT THERMAL IMPEDANCE, JUNCTION-TO-CASE vs. PULSE DURATION

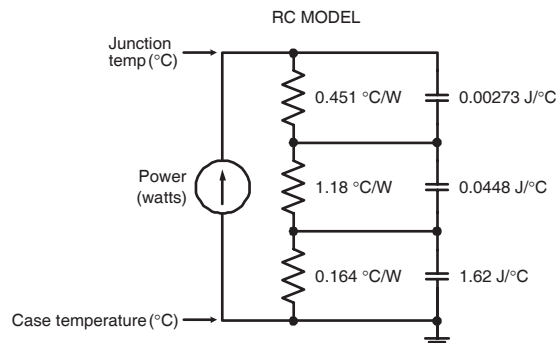


FIGURE 1b, TRANSIENT THERMAL IMPEDANCE MODEL

TYPICAL PERFORMANCE CURVES

APT30D100BCA(G)

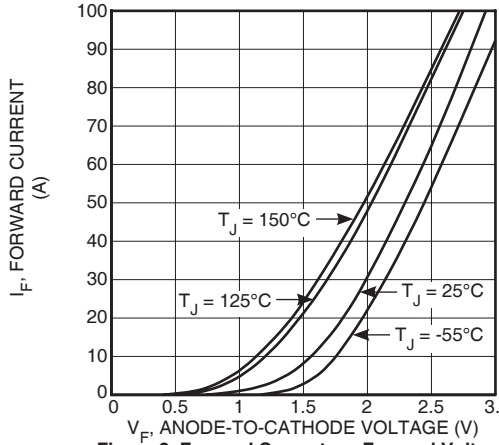


Figure 2. Forward Current vs. Forward Voltage

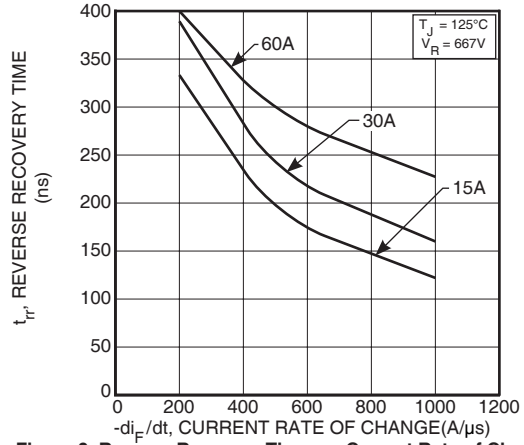


Figure 3. Reverse Recovery Time vs. Current Rate of Change

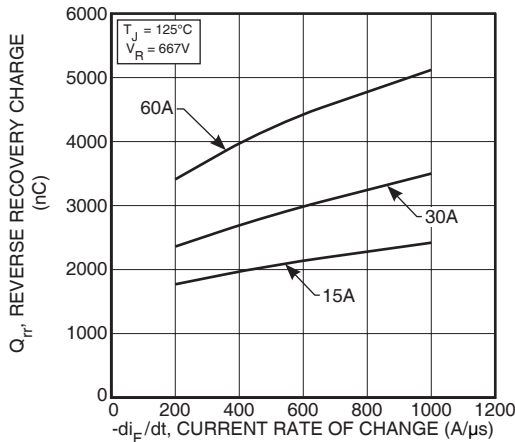


Figure 4. Reverse Recovery Charge vs. Current Rate of Change

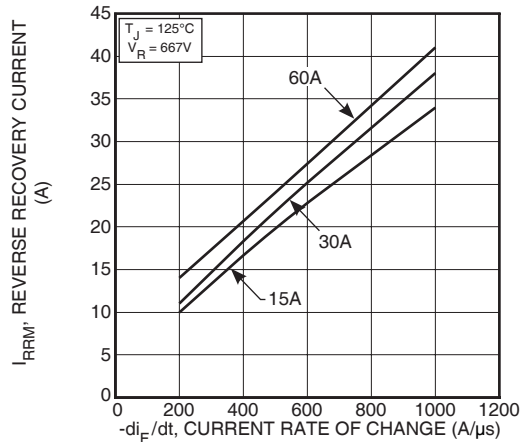


Figure 5. Reverse Recovery Current vs. Current Rate of Change

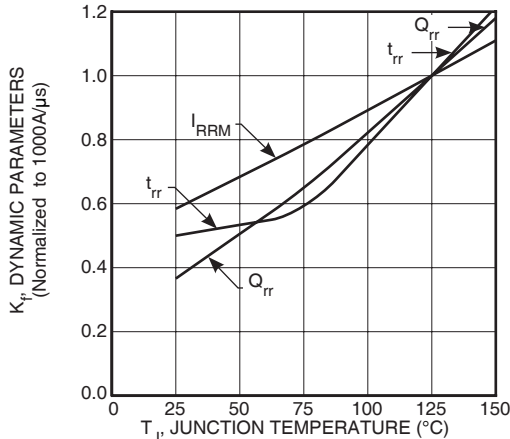


Figure 6. Dynamic Parameters vs. Junction Temperature

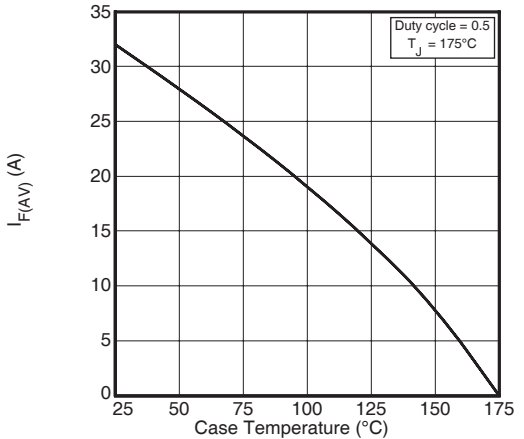


Figure 7. Maximum Average Forward Current vs. Case Temperature

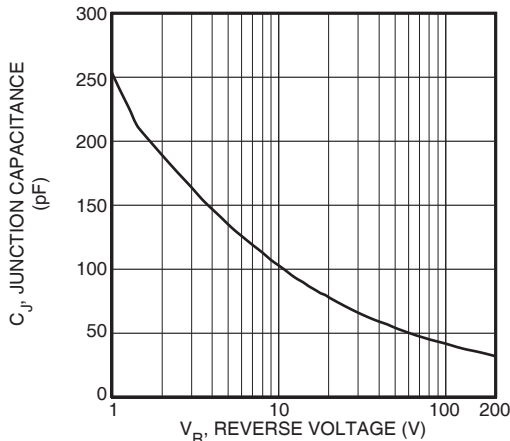


Figure 8. Junction Capacitance vs. Reverse Voltage

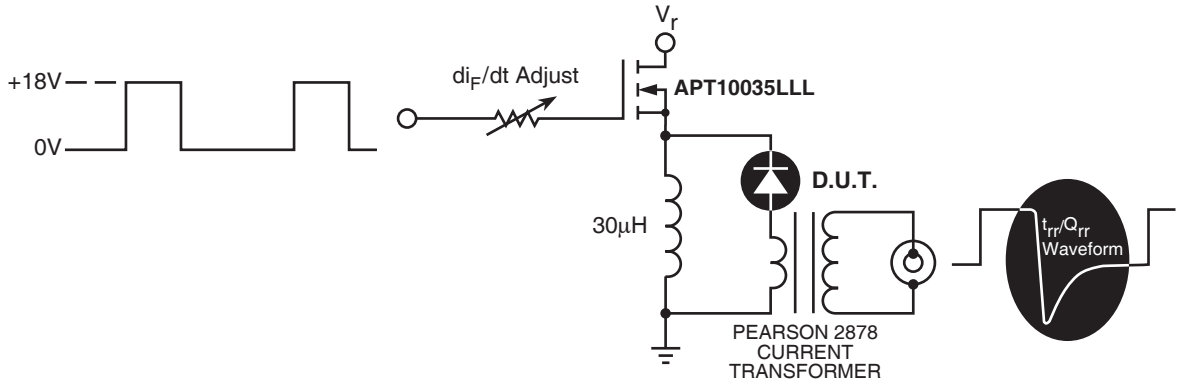


Figure 9. Diode Test Circuit

- 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} .

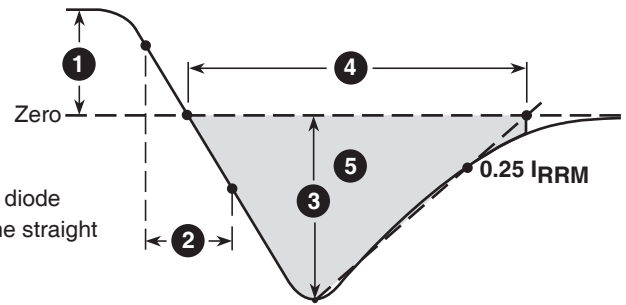
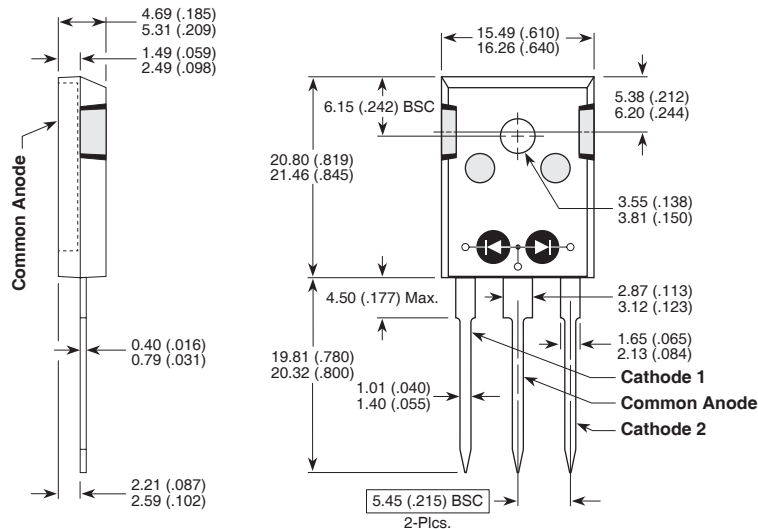


Figure 10, Diode Reverse Recovery Waveform and Definitions

TO-247 Package Outline

(e1) SAC: Tin, Silver, Copper



Dimensions in Millimeters and (Inches)