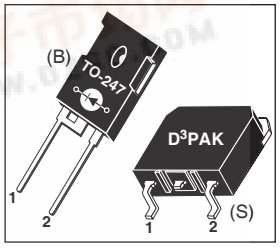
ADVANCED POWER TECHNOLOGY®

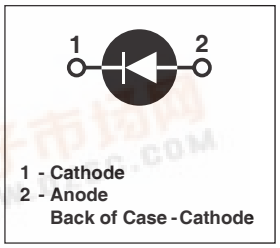
1000V 30A

APT30DQ100B APT30DQ100S
APT30DQ100BG* APT30DQ100SG*

*G Denotes RoHS Compliant, Pb Free Terminal Finish.

ULTRAFAST SOFT RECOVERY RECTIFIER DIODE





PRODUCT APPLICATIONS

- Anti-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 or Surface Mount D³PAK Package
- Low Forward Voltage
- Low Leakage Current
- Avalanche Energy Rated

PRODUCT BENEFITS

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

MAXIMUM RATINGS

All Ratings: T_C = 25°C unless otherwise specified.

Symbol	Characteristic / Test Conditions	APT30DQ100B_S(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 = 120°C, Duty Cycle = 0.5)	30	Amps
$I_{F(RMS)}$	RMS Forward Current (Square wave, 50% duty)	40	
I_{FSM}	Non-Repetitive Forward Surge Current (T_J = 45°C, 8.3ms)	150	
E_{AVL}	Avalanche Energy (1A, 40mH)	20	mJ
T_J,T_{STG}	Operating and StorageTemperature Range	-55 to 175	°C
T_L	Lead Temperature for 10 Sec.	300	

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions		MIN	TYP	MAX	UNIT
V_F	Forward Voltage	I_F = 30A		2.5	3.0	Volts
		I_F = 60A		3.06		
		I_F = 30A, T_J = 125°C		1.92		
I_{RM}	Maximum Reverse Leakage Current	V_R = 1000V			100	µA
		V_R = 1000V, T_J = 125°C			500	
C_T	Junction Capacitance, V_R = 200V			25		pF

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DYNAMIC CHARACTERISTICS

APT30DQ100B_S(G)

Symbol	Characteristic	Test Conditions	MIN	TYP	MAX	UNIT
t_{rr}	Reverse Recovery Time	I_F = 1A, di_F/dt = -100A/µs, V_R = 30V, T_J = 25°C	-	22		ns
t_{rr}	Reverse Recovery Time	I_F = 30A, di_F/dt = -200A/µs V_R = 66700V, T_C = 25°C	-	240		ns
Q_{rr}	Reverse Recovery Charge		-	260		nC
I_{RRM}	Maximum Reverse Recovery Current		-	3	-	Amps
t_{rr}	Reverse Recovery Time	I_F = 30A, di_F/dt = -200A/µs V_R = 667V, T_C = 125°C	-	300		ns
Q_{rr}	Reverse Recovery Charge		-	1250		nC
I_{RRM}	Maximum Reverse Recovery Current		-	7	-	Amps
t_{rr}	Reverse Recovery Time	I_F = 30A, di_F/dt = -1000A/µs V_R = 667V, T_C = 125°C	-	140		ns
Q_{rr}	Reverse Recovery Charge		-	2200		nC
I_{RRM}	Maximum Reverse Recovery Current		-	25		Amps

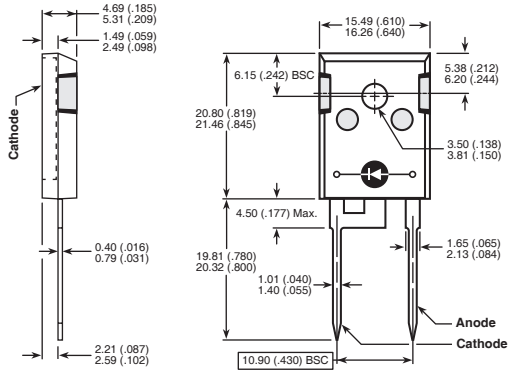
THERMAL AND MECHANICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Junction-to-Case Thermal Resistance			.88	°C/W
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.

TO-247 Package Outline

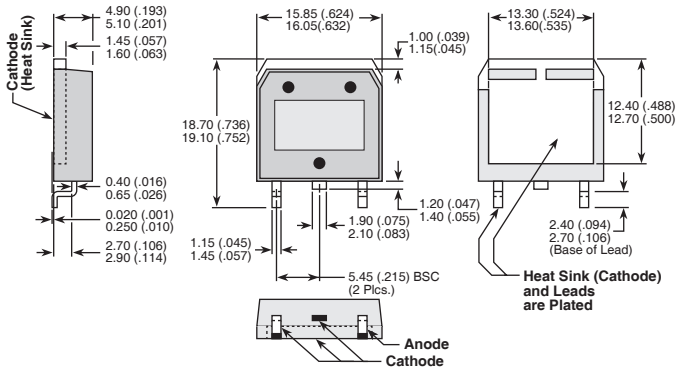
(e1) SAC: Tin, Silver, Copper



Dimensions in Millimeters and (Inches)

D^{3}PAK Package Outline

(e3) 100% Sn



Dimensions in Millimeters (Inches)

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