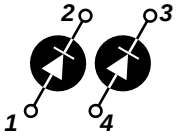
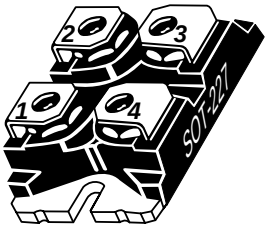


Anti-Parallel



Parallel



ADVANCED POWER TECHNOLOGY®

APT2X30/31S20J 200V 30A

DUAL DIE ISOTOP® PACKAGE

HIGH VOLTAGE SCHOTTKY DIODES

PRODUCT APPLICATIONS	PRODUCT FEATURES	PRODUCT BENEFITS
• Parallel Diode -Switchmode Power Supply -Inverters • Free Wheeling Diode -Motor Controllers -Converters • Snubber Diode • Uninterruptible Power Supply (UPS) • 48 Volt Output Rectifiers • High Speed Rectifiers	• Ultrafast Recovery Times • Soft Recovery Characteristics • Popular SOT-227 Package • Low Forward Voltage • High Blocking Voltage • Low Leakage Current	• Low Losses • Low Noise Switching • Cooler Operation • Higher Reliability Systems • Increased System Power Density

MAXIMUM RATINGS All Ratings are per diode: T_C = 25°C unless otherwise specified.

Symbol	Characteristic / Test Conditions	APT/2X30/31S20J	UNIT
V_R	Maximum D.C. Reverse Voltage	200	Volts
V_{RRM}	Maximum Peak Repetitive Reverse Voltage		
V_{RWM}	Maximum Working Peak Reverse Voltage		
I_F(AV)	Maximum Average Forward Current (T_C = 110°C, Duty Cycle = 0.5)	30	Amps
I_F(RMS)	RMS Forward Current	101	
I_{FSM}	Non-Repetitive Forward Surge Current (T_J = 45°C, 8.3mS)	TBD	
T_J,T_{STG}	Operating and StorageTemperature Range	-55 to 150	°C
T_L	Lead Temperature: 0.063" from Case for 10 Sec.	300	
E_{AVL}	Avalanche Energy (2A, 15mH)	30	mJ

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions		MIN	TYP	MAX	UNIT
V_F	Maximum Forward Voltage	I_F = 30A		0.80	0.85	Volts
		I_F = 60A		0.82		
		I_F = 30A, T_J = 150°C			0.80	
I_{RM}	Maximum Reverse Leakage Current	V_R = V_R Rated			0.50	mA
		V_R = V_R Rated, T_J = 125°C			15	
C_T	Junction Capacitance, V_R = 100V			143		pF
L_S	Series Inductance (Lead to Lead 5mm from Base)			10		nH

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DYNAMIC CHARACTERISTICS

Symbol	Characteristic		MIN	TYP	MAX	UNIT
t_{rr1}	Reverse Recovery Time, I_F = 1.0A, di_F/dt = -15A/µs, V_R = 30V, T_J = 25°C			TBD	TBD	ns
t_{rr2}	Reverse Recovery Time	T_J = 25°C		67		
t_{rr3}	I_F = 30A, di_F/dt = -100A/µs, V_R = 100V	T_J = 100°C		95		
t_{fr1}	Forward Recovery Time	T_J = 25°C		TBD		
t_{fr2}	I_F = 30A, di_F/dt = 100A/µs, V_R = 100V	T_J = 100°C		TBD		
I_{RRM1}	Reverse Recovery Current	T_J = 25°C		3.7		Amps
I_{RRM2}	I_F = 30A, di_F/dt = -100A/µs, V_R = 100V	T_J = 100°C		5.5		
Q_{rr1}	Recovery Charge	T_J = 25°C		142		nC
Q_{rr2}	I_F = 30A, di_F/dt = -100A/µs, V_R = 100V	T_J = 100°C		300		
V_{fr1}	Forward Recovery Voltage	T_J = 25°C		TBD		Volts
V_{fr2}	I_F = 30A, di_F/dt = 100A/µs, V_R = 100V	T_J = 100°C		TBD		
diM/dt	Rate of Fall of Recovery Current	T_J = 25°C		TBD		A/µs
	I_F = 30A, di_F/dt = -100A/µs, V_R = 100V	T_J = 100°C		TBD		

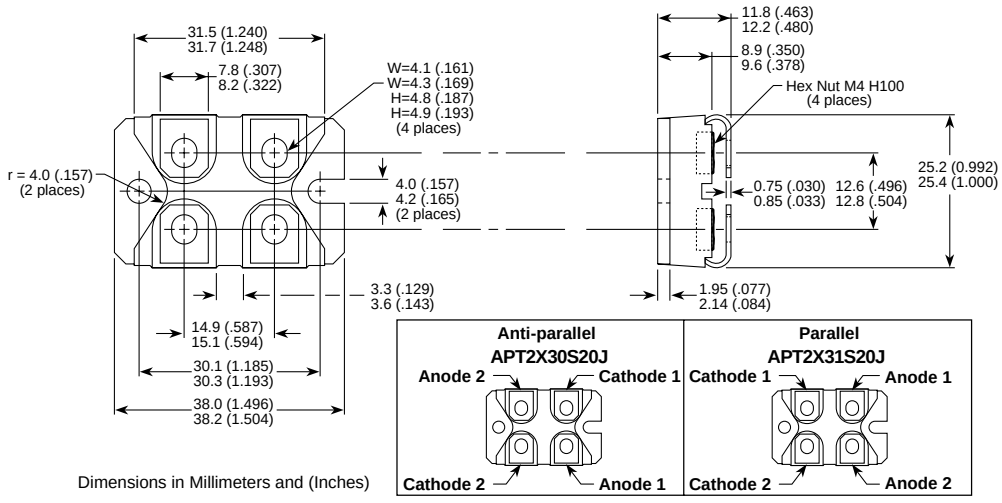
ADVANCE TECHNICAL INFORMATION

THERMAL AND MECHANICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Junction-to-Case Thermal Resistance			1.3	°C/W
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance			20	
$V_{Isolation}$	RMS Voltage (50-60 Hz Sinusoidal Waveform from Terminals to Mounting Base for 1 Min.)	2500			Volts
W_T	Package Weight		1.03		oz
			29.2		gm
Torque	Maximum Torque (Mounting = 8-32 or 4mm Machine and Terminals = 4mm Machine)			13.6	lb•in
				1.5	N•m

APT Reserves the right to change, without notice, the specifications and information contained herein.

SOT-227 Package Outline



Dimensions in Millimeters and (Inches)

053-6033 Rev B 8-2002

APT's devices are covered by one or more of the following U.S.patents: 4,895,810 5,045,903 5,089,434 5,182,234 5,019,522 5,262,336
ISOTOP® is a Registered Trademark of SGS Thomson. 5,256,583 4,748,103 5,283,202 5,231,474 5,434,095 5,528,058

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