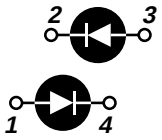
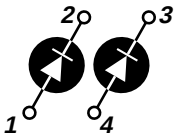


Anti-Parallel

APT2X60D40J



Parallel

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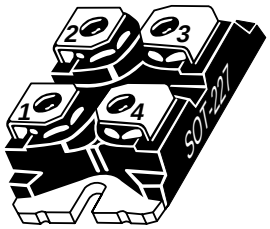

ADVANCED POWER TECHNOLOGY®

APT2X60D40J 400V 60A

APT2X61D40J 400V 60A

DUAL DIE ISOTOP® PACKAGE

ULTRAFAST SOFT RECOVERY DUAL RECTIFIER DIODES

PRODUCT APPLICATIONS

- **Anti-Parallel Diode**
  - **-Switchmode Power Supply**
  - **-Inverters**
- **Free Wheeling Diode**
  - **-Motor Controllers**
  - **-Converters**
- **Snubber Diode**
- **Uninterruptible Power Supply (UPS)**
- **Induction Heating**
- **High Speed Rectifiers**

PRODUCT FEATURES

- **Ultrafast Recovery Times**
- **Soft Recovery Characteristics**
- **Popular SOT-227 Package**
- **Low Forward Voltage**
- **High Blocking Voltage**
- **Low Leakage Current**

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	APT2X60/2X61D40J	UNIT
V_R	Maximum D.C. Reverse Voltage	400	Volts
V_{RRM}	Maximum Peak Repetitive Reverse Voltage		
V_{RWM}	Maximum Working Peak Reverse Voltage		
I_F(AV)	Maximum Average Forward Current (T_C = 70°C, Duty Cycle = 0.5)	60	Amps
I_F(RMS)	RMS Forward Current	100	
I_{FSM}	Non-Repetitive Forward Surge Current (T_J = 45°C, 8.3ms)	600	
T_J,T_{STG}	Operating and StorageTemperature Range	-55 to 150	°C
T_L	Lead Temperature: 0.063" from Case for 10 Sec.	300	

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions		MIN	TYP	MAX	UNIT
V_F	Maximum Forward Voltage	I_F = 60A			1.5	Volts
		I_F = 120A		1.5		
		I_F = 60A, T_J = 150°C			1.3	
I_{RM}	Maximum Reverse Leakage Current	V_R = V_R Rated			250	µA
		V_R = V_R Rated, T_J = 125°C			500	
C_T	Junction Capacitance, V_R = 200V			110		pF
L_S	Series Inductance (Lead to Lead 5mm from Base)			10		nH

APT Website - http://www.advancedpower.com

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405 S.W. Columbia Street Bend, Oregon 97702-1035 Phone: (541) 382-8028 FAX: (541) 388-0364
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053-4005 Rev D

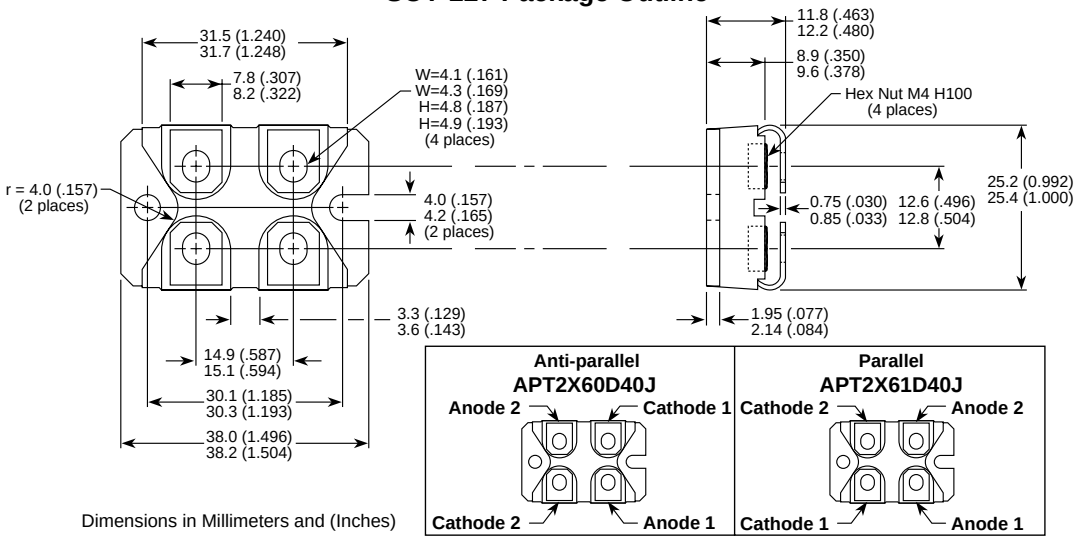
DYNAMIC CHARACTERISTICS

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			55	70	ns
t_{rr2}	Reverse Recovery Time	T_J = 25°C		70		
t_{rr3}	I_F = 60A, di_F/dt = -480A/µs, V_R = 240V	T_J = 100°C		90		
t_{fr1}	Forward Recovery Time	T_J = 25°C		175		
t_{fr2}	I_F = 60A, di_F/dt = 480A/µs, V_R = 240V	T_J = 100°C		175		
I_{RRM1}	Reverse Recovery Current	T_J = 25°C		10	21	Amps
I_{RRM2}	I_F = 60A, di_F/dt = -480A/µs, V_R = 240V	T_J = 100°C		20	36	
Q_{rr1}	Recovery Charge	T_J = 25°C		350		nC
Q_{rr2}	I_F = 60A, di_F/dt = -480A/µs, V_R = 240V	T_J = 100°C		900		
V_{fr1}	Forward Recovery Voltage	T_J = 25°C		6.5		Volts
V_{fr2}	I_F = 60A, di_F/dt = 480A/µs, V_R = 240V	T_J = 100°C		6.5		
diM/dt	Rate of Fall of Recovery Current	T_J = 25°C		800		A/µs
	I_F = 60A, di_F/dt = -480A/µs, V_R = 240V (See Figure 10)	T_J = 100°C		500		

THERMAL AND MECHANICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Junction-to-Case Thermal Resistance			0.66	°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

SOT-227 Package Outline



Dimensions in Millimeters and (Inches)

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