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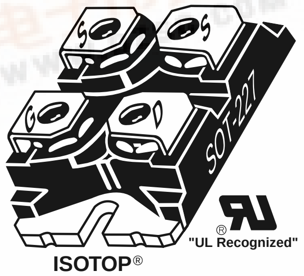
ADVANCED POWER TECHNOLOGY®

APT10035JLL

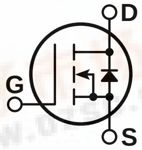
1000V 25A 0.350 Ω

POWER MOS 7™

Power MOS 7™ is a new generation of low loss, high voltage, N-Channel enhancement mode power MOSFETS. Both conduction and switching losses are addressed with Power MOS 7™ by significantly lowering $R_{DS(ON)}$ and Q_g. Power MOS 7™ combines lower conduction and switching losses along with exceptionally fast switching speeds inherent with APT's patented metal gate structure.



- **Lower Input Capacitance**
- **Lower Miller Capacitance**
- **Lower Gate Charge, Qg**
- **Increased Power Dissipation**
- **Easier To Drive**
- **Popular SOT-227 Package**



MAXIMUM RATINGS

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

Symbol	Parameter	APT10035JLL	UNIT
V_{DSS}	Drain-Source Voltage	1000	Volts
I_D	Continuous Drain Current @ T_C = 25°C	25	Amps
I_{DM}	Pulsed Drain Current ①	100	
V_{GS}	Gate-Source Voltage Continuous	±30	Volts
V_{GSM}	Gate-Source Voltage Transient	±40	
P_D	Total Power Dissipation @ T_C = 25°C	540	Watts
	Linear Derating Factor	4.32	W/°C
T_J,T_{STG}	Operating and Storage Junction Temperature Range	-55 to 150	°C
T_L	Lead Temperature: 0.063" from Case for 10 Sec.	300	
I_{AR}	Avalanche Current ① (Repetitive and Non-Repetitive)	25	Amps
E_{AR}	Repetitive Avalanche Energy ①	50	mJ
E_{AS}	Single Pulse Avalanche Energy ④	3000	

ADVANCE TECHNICAL INFORMATION

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
BV_{DSS}	Drain-Source Breakdown Voltage (V_{GS} = 0V, I_D = 250μA)	1000			Volts
$I_{D(on)}$	On State Drain Current ② (V_{DS} > $I_{D(on)}$ x $R_{DS(on)}$ Max, V_{GS} = 10V)	25			Amps
$R_{DS(on)}$	Drain-Source On-State Resistance ② (V_{GS} = 10V, 0.5 $I_{D[Cont.]}$)			0.350	Ohms
I_{DSS}	Zero Gate Voltage Drain Current (V_{DS} = V_{DSS}, V_{GS} = 0V)			25	μA
	Zero Gate Voltage Drain Current (V_{DS} = 0.8 V_{DSS}, V_{GS} = 0V, T_C = 125°C)			250	
I_{GSS}	Gate-Source Leakage Current (V_{GS} = ±30V, V_{DS} = 0V)			±100	nA
$V_{GS(th)}$	Gate Threshold Voltage (V_{DS} = V_{GS}, I_D = 2.5mA)	3		5	Volts

CAUTION: These Devices are Sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed.

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DYNAMIC CHARACTERISTICS

Symbol	Characteristic	Test Conditions	MIN	TYP	MAX	UNIT
C_{iss}	Input Capacitance	V_{GS} = 0V V_{DS} = 25V f = 1 MHz		5300		pF
C_{oss}	Output Capacitance			870		
C_{rss}	Reverse Transfer Capacitance			174		
Q_g	Total Gate Charge ③	V_{GS} = 10V V_{DD} = 0.5 V_{DSS} I_D = $I_{D[Cont.]}$ @ 25°C		203		nC
Q_{gs}	Gate-Source Charge			31		
Q_{gd}	Gate-Drain ("Miller") Charge			135		
$t_{d(on)}$	Turn-on Delay Time	V_{GS} = 15V V_{DD} = 0.5 V_{DSS} I_D = $I_{D[Cont.]}$ @ 25°C R_G = 0.6Ω		15		ns
t_r	Rise Time			6		
$t_{d(off)}$	Turn-off Delay Time			31		
t_f	Fall Time			6		

ADVANCE TECHNICAL INFORMATION

SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
I_S	Continuous Source Current (Body Diode)			25	Amps
I_{SM}	Pulsed Source Current ① (Body Diode)			100	
V_{SD}	Diode Forward Voltage ② (V_{GS} = 0V, I_S = -$I_{D[Cont.]}$)			1.3	Volts
t_{rr}	Reverse Recovery Time (I_S = -$I_{D[Cont.]}$, dI_S/dt = 100A/µs)		1060		ns
Q_{rr}	Reverse Recovery Charge (I_S = -$I_{D[Cont.]}$, dI_S/dt = 100A/µs)		26.0		µC

THERMAL CHARACTERISTICS

Symbol	Characteristic	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Junction to Case			0.23	°C/W
$R_{\theta JA}$	Junction to Ambient			40	

① Repetitive Rating: Pulse width limited by maximum junction temperature.

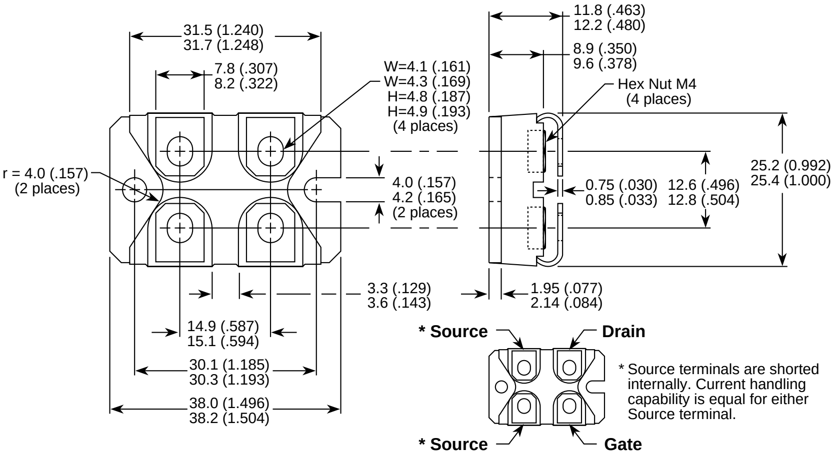
② Pulse Test: Pulse width < 380 µS, Duty Cycle < 2%

③ See MIL-STD-750 Method 3471

④ Starting T_j = +25°C, L = 9.6mH, R_G = 25Ω, Peak I_L = 25A

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

SOT-227 (ISOTOP®) Package Outline



* Source terminals are shorted internally. Current handling capability is equal for either Source terminal.

Dimensions in Millimeters and (Inches)