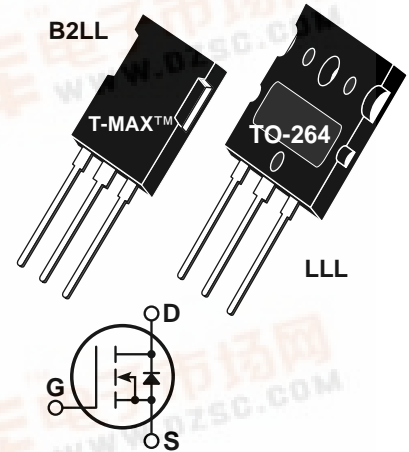




APT6017B2LL
APT6017LLL
600V 35A 0.170Ω

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, Q_g
- Increased Power Dissipation
- Easier To Drive
- Popular T-MAX™ or TO-264 Package

MAXIMUM RATINGS

All Ratings: $T_C = 25^\circ C$ unless otherwise specified.

Symbol	Parameter	APT6017	UNIT
V_{DSS}	Drain-Source Voltage	600	Volts
I_D	Continuous Drain Current @ $T_C = 25^\circ C$	35	Amps
I_{DM}	Pulsed Drain Current ^①	140	
V_{GS}	Gate-Source Voltage Continuous	±30	Volts
V_{GSM}	Gate-Source Voltage Transient	±40	
P_D	Total Power Dissipation @ $T_C = 25^\circ C$	500	Watts
	Linear Derating Factor	4.0	
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)	35	Amps
E_{AR}	Repetitive Avalanche Energy ^①	35	mJ
E_{AS}	Single Pulse Avalanche Energy ^④	1600	

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
BV_{DSS}	Drain-Source Breakdown Voltage ($V_{GS} = 0V, I_D = 250\mu A$)	600			Volts
$I_{D(on)}$	On State Drain Current ^② ($V_{DS} > I_{D(on)} \times R_{DS(on)}$ Max, $V_{GS} = 10V$)	35			Amps
$R_{DS(on)}$	Drain-Source On-State Resistance ^② ($V_{GS} = 10V, 0.5 I_{D(Cont.)}$)			0.170	Ohms
I_{DSS}	Zero Gate Voltage Drain Current ($V_{DS} = V_{DSS}, V_{GS} = 0V$)			100	μA
	Zero Gate Voltage Drain Current ($V_{DS} = 0.8 V_{DSS}, V_{GS} = 0V, T_C = 125^\circ C$)			500	
I_{GSS}	Gate-Source Leakage Current ($V_{GS} = \pm 30V, V_{DS} = 0V$)			±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.

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

DYNAMIC CHARACTERISTICS

APT6017 B2LL - LLL

Symbol	Characteristic	Test Conditions	MIN	TYP	MAX	UNIT
C _{iss}	Input Capacitance	V _{GS} = 0V V _{DS} = 25V f = 1 MHz		4300		pF
C _{oss}	Output Capacitance			760		
C _{rss}	Reverse Transfer Capacitance			48		
Q _g	Total Gate Charge ③	V _{GS} = 10V V _{DD} = 0.5 V _{DSS} I _D = I _{D[Cont.]} @ 25°C		99		nC
Q _{gs}	Gate-Source Charge			23		
Q _{gd}	Gate-Drain ("Miller") Charge			44		
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		13		ns
t _r	Rise Time			10		
t _{d(off)}	Turn-off Delay Time			29		
t _f	Fall Time			7		

SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
I _S	Continuous Source Current (Body Diode)			35	Amps
I _{SM}	Pulsed Source Current ① (Body Diode)			140	
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)		600		ns
Q _{rr}	Reverse Recovery Charge (I _S = -I _{D[Cont.]} , di _S /dt = 100A/μs)		13.0		μC
dv/dt	Peak Diode Recovery dv/dt ⑤			8	V/ns

THERMAL CHARACTERISTICS

Symbol	Characteristic	MIN	TYP	MAX	UNIT
R _{θJC}	Junction to Case			0.25	°C/W
R _{θJA}	Junction to Ambient			40	

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

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

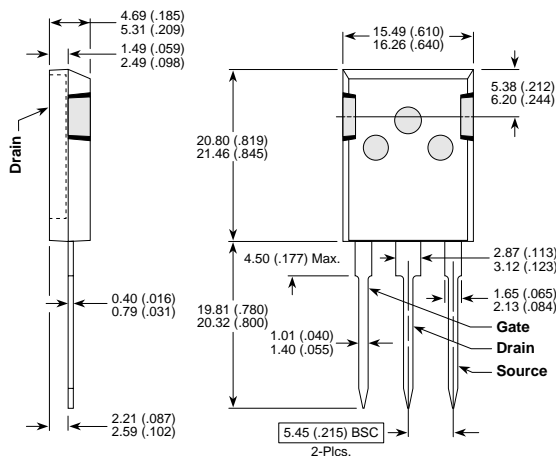
③ See MIL-STD-750 Method 3471

④ Starting T_j = +25°C, L = 2.61mH, R_G = 25Ω, Peak I_L = 35A

⑤ dv/dt numbers reflect the limitations of the test circuit rather than the device itself. I_S ≤ -I_{D[Cont.]}, di/dt ≤ 700A/μs, V_R ≤ V_{DSS}, T_J ≤ 150°C

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

T-MAX™ (B2) Package Outline



TO-264 (L) Package Outline

