AP4435

Preliminary Data Sheet

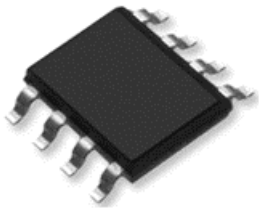
30 P-Channel Enhancement-Mode MOSFET

V_{DS}= -30V
$R_{DS(ON)}$, V_{gs}@-10V, I_{ds}@-9.1A = 21mΩ
$R_{DS(ON)}$, V_{gs}@-4.5V, I_{ds}@-6.9A = 35mΩ

Features

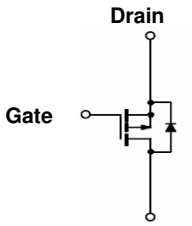
Advanced trench process technology
High Density Cell Design For Ultra Low On-Resistance

S0-8



Top View

Internal Schematic Diagram



P-Channel MOSFET

Maximum Ratings and Thermal Characteristics (T_A = 25 °C unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current		I_D	-7	A
Pulsed Drain Current [1]		I_{DM}	-50	
Maximum Power Dissipation	T_A = 25°C	P_D	1.5	W
	T_A = 75°C		0.9	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C
Junction-to-Ambient Thermal Resistance (PCB mounted) [2]		$R_{\theta JA}$	85	°C/W

Note: 1. Repetitive Rating: Pulse width limited by the maximum junction temperature
2. 1-in^2 2oz Cu PCB board
3. Guaranteed by design, not subject to production testing

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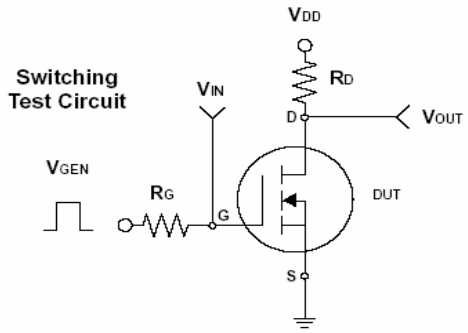
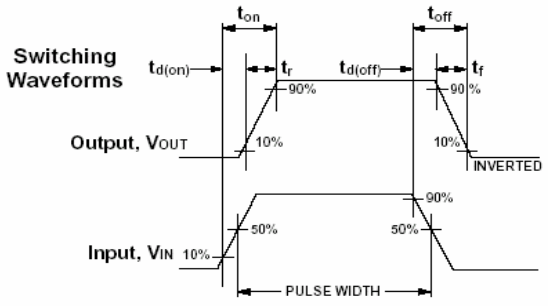
P-Channel Enhancement-Mode MOSFET

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0V, I_D = -250uA	-30			V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS} = -10V, I_D = -9.1A		17.0	21.0	mΩ
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS} = -4.5V, I_D = -6.9A		23.0	35.0	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D = -250uA	-1		-3	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -30V, V_{GS} = 0V			-1	uA
Gate Body Leakage	I_{GSS}	V_{GS} = ± 20V, V_{DS} = 0V			±100	nA
Forward Transconductance	g_{fs}	V_{DS} = -10V, I_D = -9.1A		24		S
Dynamic						
Total Gate Charge	Q_g	V_{DS} = 20V, I_D = 5.7A V_{GS} = 10V				nC
Gate-Source Charge	Q_{gs}					
Gate-Drain Charge	Q_{gd}					
Turn-On Delay Time	$t_{d(on)}$ t_r	V_{DD} = 20V, RL=20Ω I_D = 1A, V_{GEN} = 10V R_G = 6Ω				ns
Turn-On Rise Time						
Turn-Off Delay Time	$t_{d(off)}$ t_f					
Turn-Off Fall Time						
Input Capacitance	C_{iss}	V_{DS} = 8V, V_{GS} = 0V f = 1.0 MHz				pF
Output Capacitance	C_{oss}					
Reverse Transfer Capacitance	C_{rss}					
Source-Drain Diode						
Max. Diode Forward Current	I_S					A
Diode Forward Voltage	V_{SD}	I_S = 1.8A, V_{GS} = 0V				V

Note: Pulse test: pulse width <= 300us, duty cycle<= 2%





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