



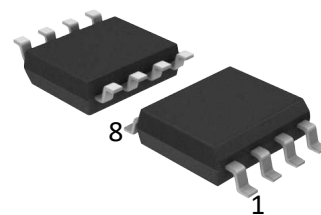
PJM05P30PA

P-Enhancement Field Effect Transistor

SOP-8

Features

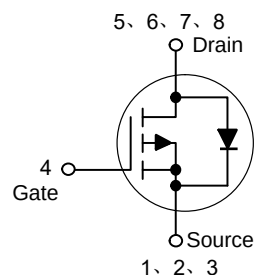
- $R_{DS(on)} = 43m\Omega(Typ.) @ V_{GS} = -10V$
- High density cell design for ultra low $R_{DS(on)}$
- Excellent package for good heat dissipation



Applications

- Power switching application
- Hard switched and high frequency circuits

Schematic Diagram



Absolute Maximum Ratings

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

Parameter	Symbol	Value	Units
Drain-Source Voltage	$-V_{DS}$	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	$-I_D$	5.1	A
Pulsed Drain Current ^{Note1}	$-I_{DM}$	20	A
Power Dissipation	P_D	2.5	W
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature	T_{STG}	-55 to 150	$^\circ C$
Thermal Characteristics			
Parameter	Symbol	Typ.	Units
Maximum Junction-to- Ambient ^{Note2}	$R_{\theta JA}$	50	$^\circ C/W$



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Electrical Characteristics (T_c=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	-V _{(BR)DSS}	V _{GS} = 0V, -I _D =250μA	30			V
Zero gate voltage drain current	-I _{DSS}	-V _{DS} =30V, V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
Gate threshold voltage ^{Note3}	-V _{GS(th)}	V _{DS} =V _{GS} , -I _D =250μA	1		3	V
Drain-source on-resistance ^{Note3}	R _{DS(on)}	-V _{GS} =10V, -I _D =5.1A		43	55	mΩ
		-V _{GS} =4.5V, -I _D =4.2A		62	90	mΩ
Forward transconductance ^{Note3}	g _{FS}	-V _{DS} =15V, -I _D =5.1A		7		S
Dynamic characteristics						
Input capacitance	C _{iss}	-V _{DS} =15V, V _{GS} =0V, f =1MHz		980		pF
Output capacitance	C _{oss}			390		
Reverse transfer capacitance	C _{rss}			135		
Switching Characteristics						
Total gate charge	Q _g	-V _{DS} =15V, -V _{GS} =10V, -I _D =5.1A		11		nC
Gate-source charge	Q _{gs}			2		
Gate-drain charge	Q _{gd}			2.8		
Turn-on delay time	t _{d(on)}	-V _{DD} =15V, -V _{GS} =10V, R _{GEN} =6Ω, -I _D =1A		14		ns
Turn-on rise time	t _r			12		
Turn-off delay time	t _{d(off)}			56		
Turn-off fall time	t _f			20		
Diode Characteristics						
Diode Forward Voltage ^{Note3}	-V _{SD}	V _{GS} =0V, -I _S =2.1A			1.2	V

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.
3. Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.



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Typical Electrical and Thermal Characteristics

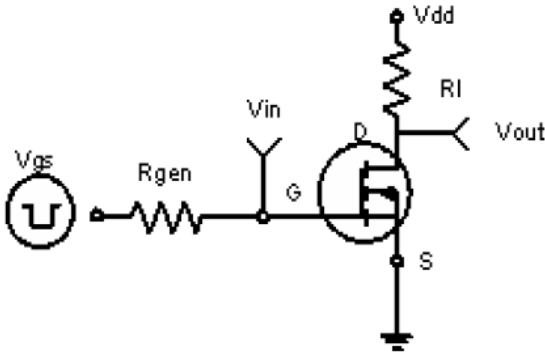


Figure 1: Switching Test Circuit

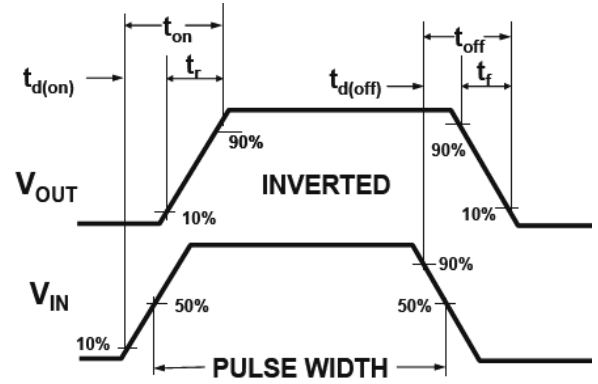


Figure 2: Switching Waveforms

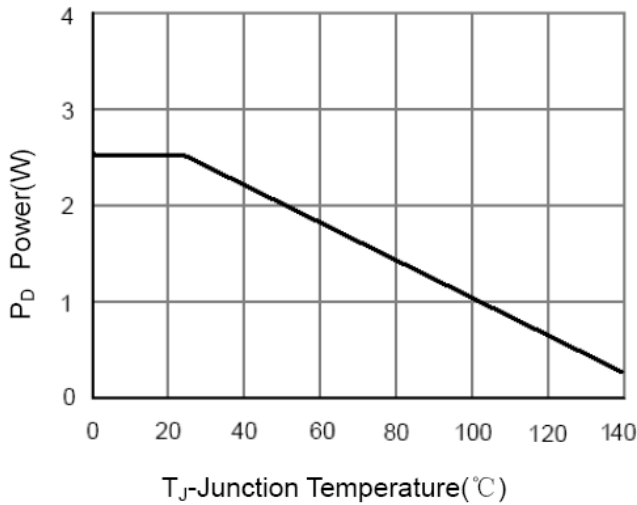


Figure 3 Power Dissipation

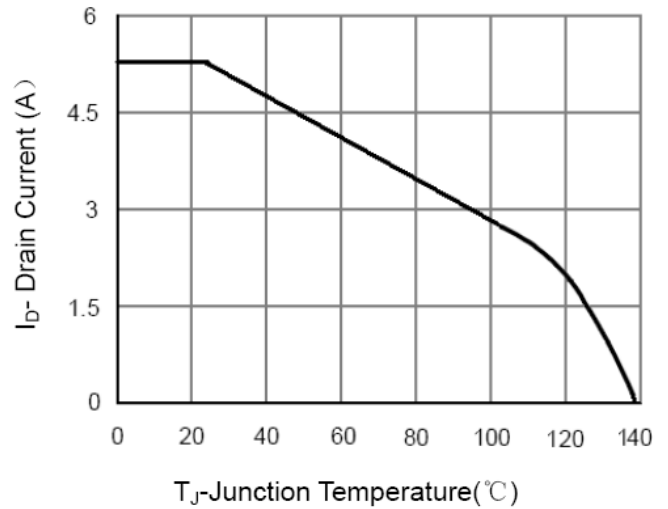


Figure 4 Drain Current

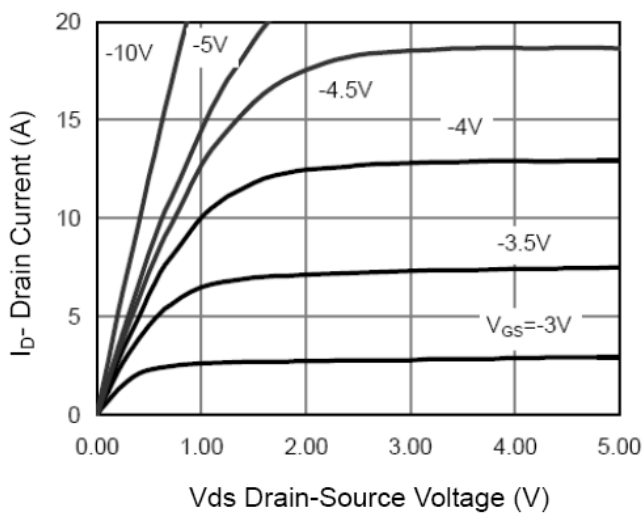


Figure 5 Output Characteristics

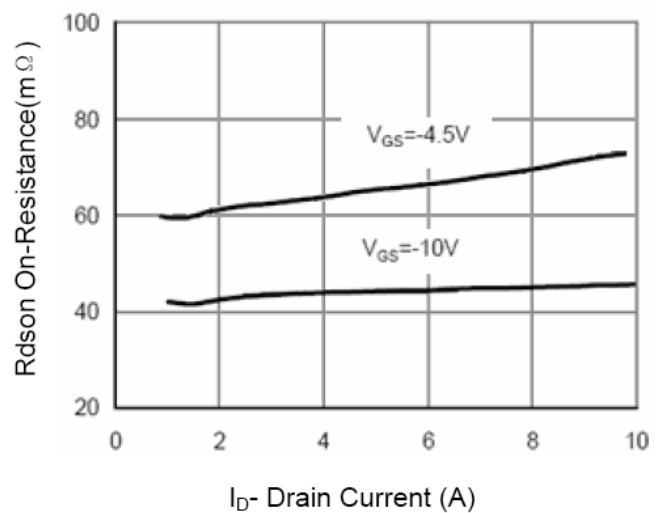


Figure 6 Drain-Source On-Resistance



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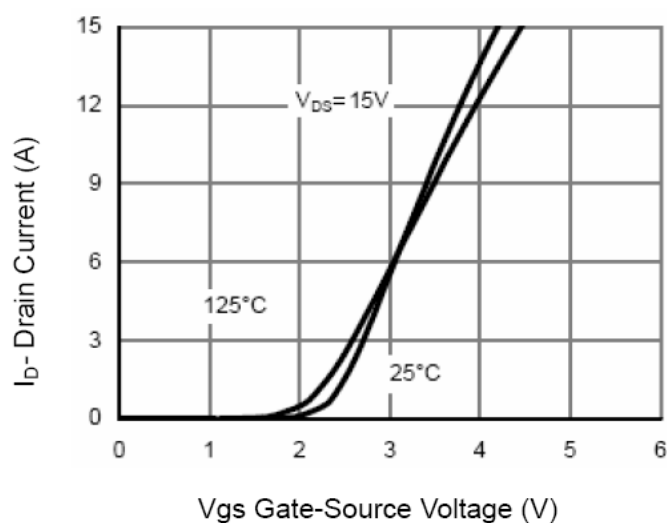


Figure 7 Transfer Characteristics

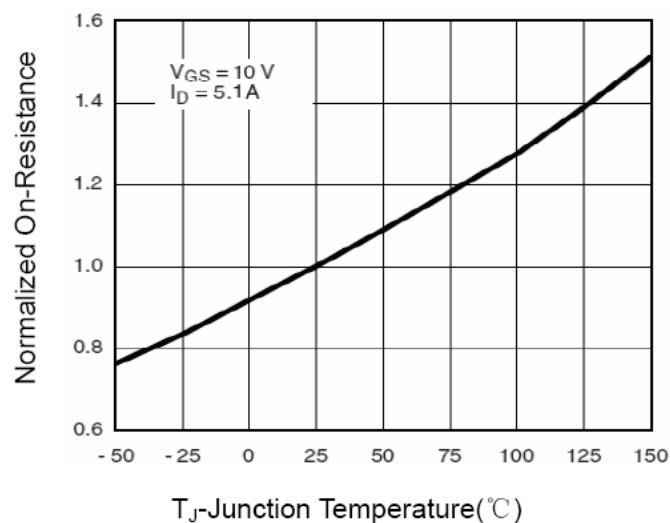


Figure 8 Drain-Source On-Resistance

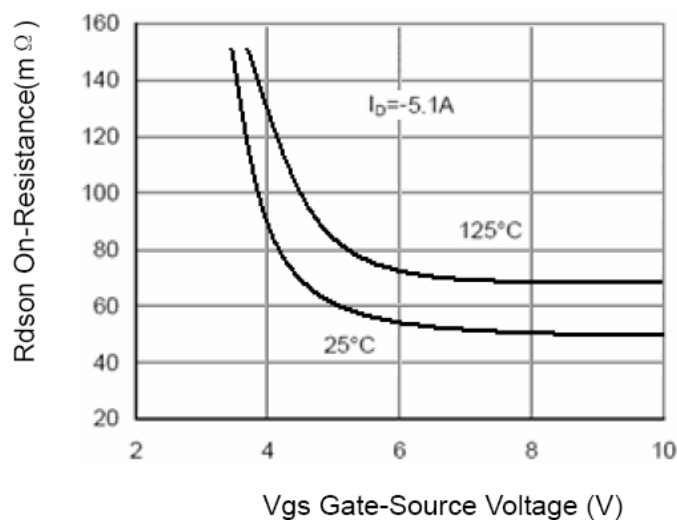


Figure 9 Rdson vs Vgs

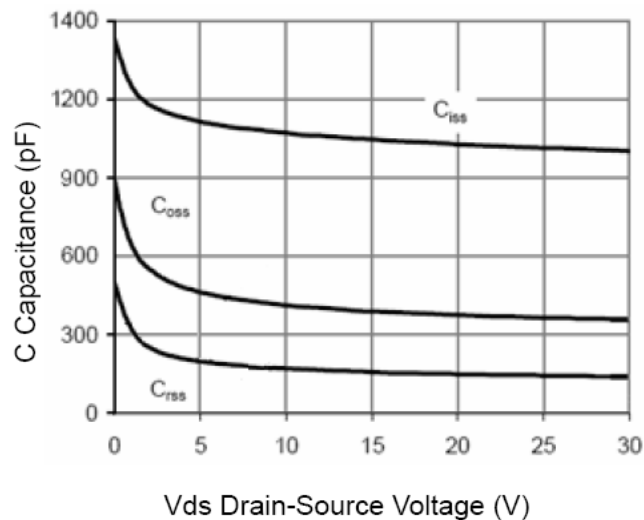


Figure 10 Capacitance vs Vds

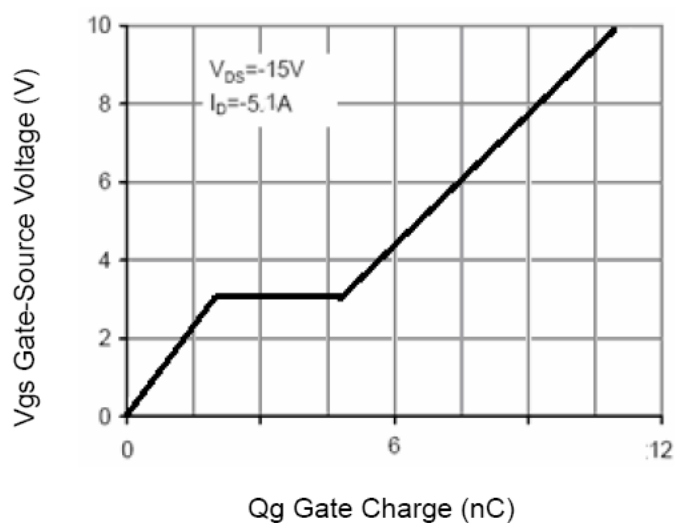


Figure 11 Gate Charge

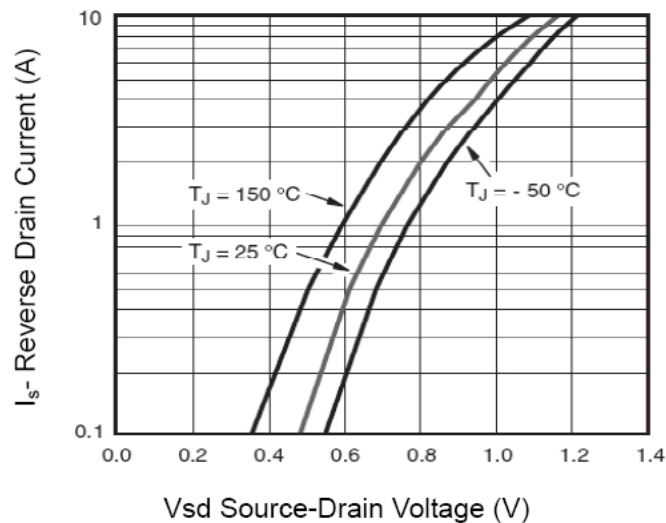


Figure 12 Source- Drain Diode Forward



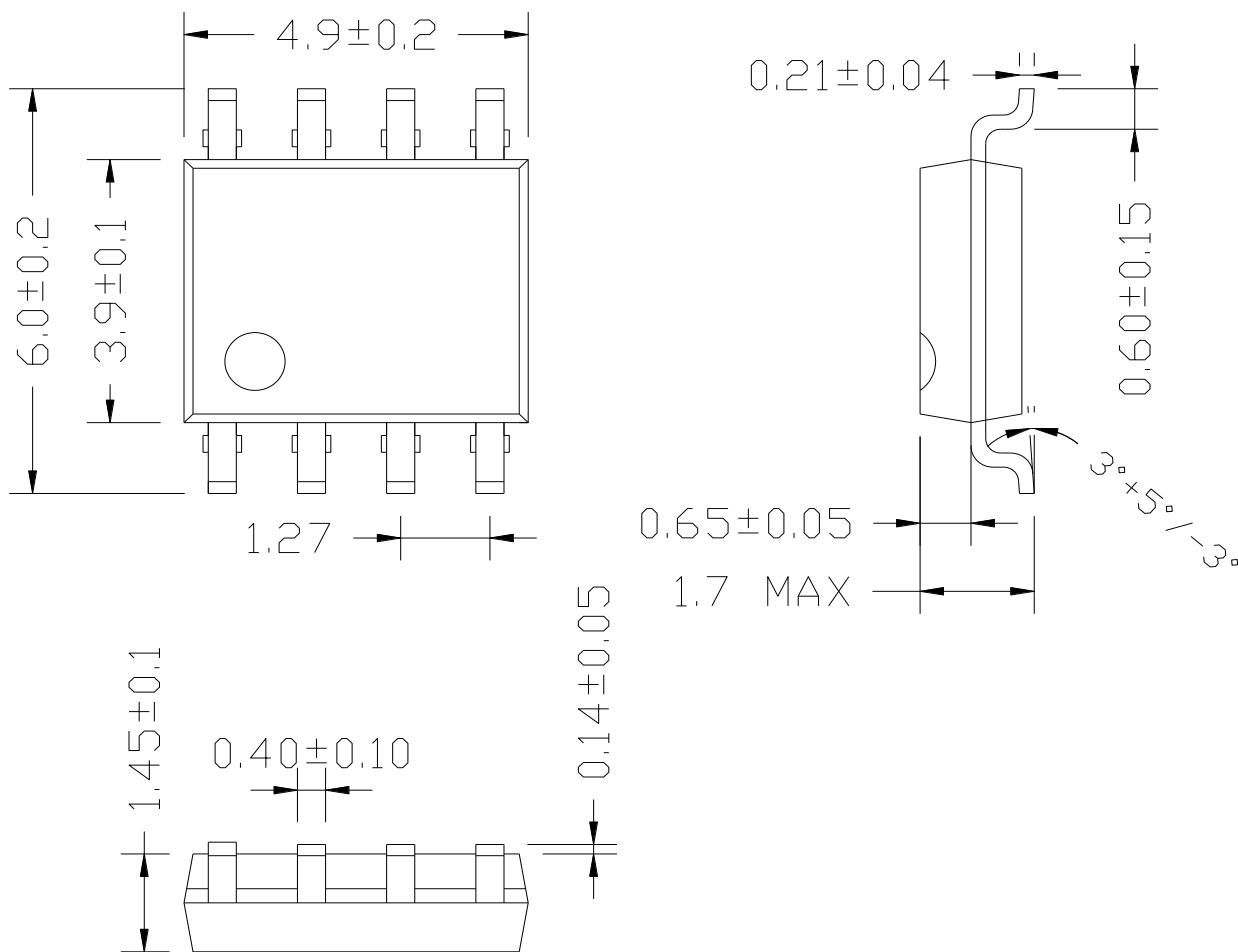
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Package Outline

SOP-8

unit : mm



单位: mm