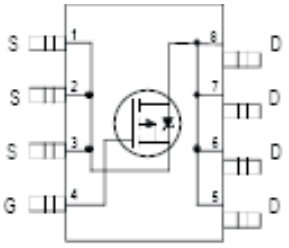
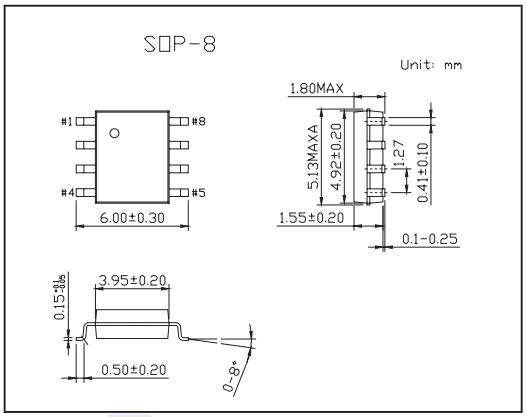
HEXFET Power MOSFET

KRF7205(IRF7205)

Features

- Adavanced Process Technology
- Ultra Low On-Resistance
- P-Channel MOSFET
- Surface Mount
- Dynamic dv/dt Rating
- Fast Switching





Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Continuous Drain Current, V_{GS} @ 10V @ T_A = 25℃	I_D	-4.6	A
Continuous Drain Current, V_{GS} @ 10V @ T_A = 70℃	I_D	-3.7	
Pulsed Drain Current *1	I_{DM}	-15	
Power Dissipation @T_C = 25℃	P_D	2.5	W
Linear Derating Factor		0.02	V
Gate-to-Source Voltage	V_{GS}	±20	V
Peak Diode Recovery dv/dt *2	dv/dt	-3	V/ns
Maximum Junction-to-Ambient *3	$R_{\theta JA}$	50	℃/W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to + 150	℃

*1 Repetitive rating; pulse width limited by max. junction temperature.

*2 I_{SD} ≤ -4.6A, di/dt ≤ 90A/μs, V_{DD} ≤ $V_{(BR)DSS}$, T_J ≤ 150℃

*3 Surface mounted on FR-4 board, t ≤ 10sec.

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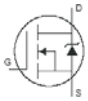
■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	V_{DSS}	V_{GS} = 0V, I_D = -250A	-30			V
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	V_{GS} = -10V, I_D = -4.6A*1			0.070	Ω
		V_{GS} = -4.5V, I_D = -2.0A*1			0.130	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250μA	-1.0		-3.0	V
Forward Transconductance	g_{fs}	V_{DS} = -15V, I_D = -4.6A*1		6.6		S
Drain-to-Source Leakage Current	I_{DSS}	V_{DS} = -24V, V_{GS} = 0V			-1.0	μA
		V_{DS} = -16V, V_{GS} = 0V, T_J = 70℃			-5.0	
Gate-to-Source Forward Leakage	I_{GSS}	V_{GS} = -20V			-100	nA
Gate-to-Source Reverse Leakage		V_{GS} = 20V			100	
Total Gate Charge	Q_g	I_D = -4.6A		27	40	nC
Gate-to-Source Charge	Q_{gs}	V_{DS} = -15V		5.2		
Gate-to-Drain ("Miller") Charge	Q_{gd}	V_{GS} = -10V,*1		7.5		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = -15V		14	30	ns
Rise Time	t_r	I_D = -1.0A		21	60	
Turn-Off Delay Time	$t_{d(off)}$	R_G = 6.0Ω		97	150	
Fall Time	t_f	R_D = 10Ω *1		71	100	
Internal Source Inductance	L_S	Between lead,6mm(0.25in.) from package and center of die contact 		2.5		nH
Internal Drain Inductance	L_D			4.0		
Input Capacitance	C_{iss}	V_{GS} = 0V		870		pF
Output Capacitance	C_{oss}	V_{DS} = -10V		720		
Reverse Transfer Capacitance	C_{rss}	f = 1.0MHz		220		
Reverse Recovery Time	t_{rr}	T_J = 25℃, I_F =-4.6A		70	100	ns
Reverse RecoveryCharge	Q_{rr}	di/dt = 100A/μs*1		100	180	nC
Forward Turn-On Time	t_{on}	Intrinsic turn-on time is negligible (turn-on is dominated by L_S+L_D)				
Continuous Source Current（Body Diode)	I_S	MOSFET symbol showing the integral reverse p-n junction diode. 			-2.5	A
Pulsed Source Current （Body Diode) *2	I_{SM}				-15	
Diode Forward Voltage	V_{SD}	T_J = 25℃, I_S = -1.25A, V_{GS} = 0V*1			-1.2	V

*1 Pulse width ≤ 300μs; duty cycle ≤ 2%.

*2 Repetitive rating; pulse width limited bymax