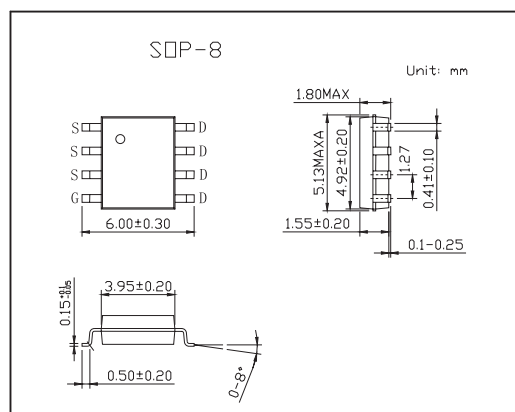
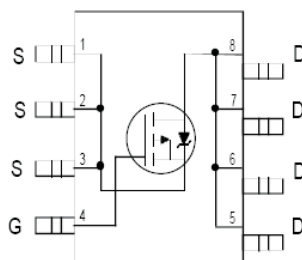


HEXFET[®] Power MOSFET

KRF7204

■ Features

- Advanced Process Technology
- Ultra Low On-Resistance
- P-Channel MOSFET
- Surface Mount
- Available in Tape & Reel
- Dynamic dv/dt Rating
- Fast Switching

■ Absolute Maximum Ratings $T_A = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Continuous Drain Current, $V_{GS} @ 10V @ T_A = 25^\circ\text{C}$	I_D	-5.3	A
Continuous Drain Current, $V_{GS} @ 10V @ T_A = 70^\circ\text{C}$	I_D	-4.2	
Pulsed Drain Current *1	I_{DM}	-21	
Power Dissipation @ $T_C = 25^\circ\text{C}$	P_D	2.5	W/°C
Linear Derating Factor		0.02	V
Gate-to-Source Voltage	V_{GS}	± 12	V/nS
Peak Diode Recovery dv/dt *2	dv/dt	-1.7	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to + 150	°C
Maximum Junction-to-Ambient *3	$R_{\theta JA}$	50	°C/W

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

*2 $I_{SD} \leq -5.3A$, $di/dt \leq 90A/\mu s$, $V_{DD} \leq V_{(BR)DSS}$, $T_J \leq 150^\circ\text{C}$

*3 Surface mounted on FR-4 board, $t \leq 10\text{sec}$.

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■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250A$	-20			V
Breakdown Voltage Temp. Coefficient	$\Delta V_{(BR)DSS} / \Delta T_J$	$I_D = -1mA, \text{Reference to } 25^\circ C$		-0.022		V/°C
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -5.3A^{*1}$			0.060	Ω
		$V_{GS} = -4.5V, I_D = -2.0A^{*1}$			0.10	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250 \mu A$	-1.0		-2.5	V
Forward Transconductance	g_{fs}	$V_{DS} = -15V, I_D = -5.3A^{*1}$		7.9		S
Drain-to-Source Leakage Current	I_{DSS}	$V_{DS} = -16V, V_{GS} = 0V$			-2.5	μA
		$V_{DS} = -16V, V_{GS} = 0V, T_J = 125^\circ C$			-250	
Gate-to-Source Forward Leakage	I_{GSS}	$V_{GS} = -12V$			-100	nA
Gate-to-Source Reverse Leakage		$V_{GS} = 12V$			100	
Total Gate Charge	Q_g	$I_D = -5.3A$		25		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS} = -10V$		5.0		
Gate-to-Drain ("Miller") Charge	Q_{gd}	$V_{GS} = -10V, ^{*1}$		8.0		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -10V$		14	30	ns
Rise Time	t_r	$I_D = -1.0A$		26	60	
Turn-Off Delay Time	$t_{d(off)}$	$R_G = 6.0 \Omega$		100	150	
Fall Time	t_f	$R_D = 10 \Omega ^{*1}$		68	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}	$V_{GS} = 0V$		860		pF
Output Capacitance	C_{oss}	$V_{DS} = -10V$		750		
Reverse Transfer Capacitance	C_{rss}	$f = 1.0MHz$		230		
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}	$T_J = 25^\circ C, I_S = -1.25A, V_{GS} = 0V^{*1}$			-1.2	V
Reverse Recovery Time	t_{rr}	$T_J = 25^\circ C, I_F = -2.4A$		85	100	ns
Reverse Recovery Charge	Q_{rr}	$di/dt = 100A/\mu s^{*1}$		77	120	μC
Forward Turn-On Time	t_{on}	Intrinsic turn-on time is negligible (turn-on is dominated by $L_S + L_D$)				

*1 Pulse width $\leq 300 \mu s$; duty cycle $\leq 2\%$.

*2 Repetitive rating; pulse width limited by max