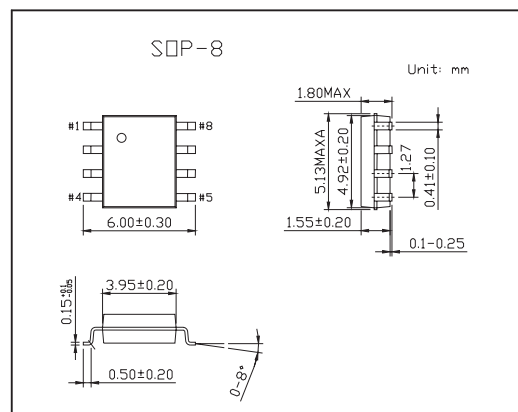
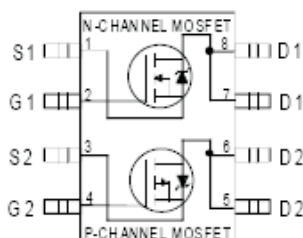


HEXFET[®] Power MOSFET

KRF7307

■ Features

- Generation V Technology
- Ultra Low On-Resistance
- Dual N and 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	N-Channel	P-Channel	Unit
10 Sec. Pulse Drain Current, $V_{GS} @ 4.5V$ $T_a = 25^\circ\text{C}$	I_D	5.7	-4.7	A
Continuous Drain Current $V_{GS} @ 4.5V$ $T_a = 25^\circ\text{C}$	I_D	5.2	-4.3	
Continuous Drain Current $V_{GS} @ 4.5V$ $T_a = 70^\circ\text{C}$	I_D	4.1	-3.4	
Pulsed Drain Current *1	I_{DM}	21	-17	
Power Dissipation @ $T_a = 25^\circ\text{C}$	P_D	2.0		W
Linear Derating Factor (PCB Mount)		0.016		W/ $^\circ\text{C}$
Peak Diode Recovery dv/dt *2	dv/dt	5.0	-5.0	V/ns
Gate-to-Source Voltage	V_{GS}	± 12		V
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to + 150		$^\circ\text{C}$
Maximum Junction-to-Ambient*3	$R_{\theta JA}$	62.5		$^\circ\text{C}/\text{W}$

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

*2 N-Channel $I_{SD} \leq 2.6A$, $di/dt \leq 100A/\mu s$, $V_{DD} \leq V_{(BR)DSS}$, $T_J \leq 150^\circ\text{C}$

P-Channel $I_{SD} \leq -2.2A$, $di/dt \leq 50A/\mu s$, $V_{DD} \leq V_{(BR)DSS}$, $T_J \leq 150^\circ\text{C}$

*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	VGS = 0V, ID = 250 μ A	N-Ch	20			V	
		VGS = 0V, ID = -250 μ A	P-Ch	-20				
Breakdown Voltage Temp. Coefficient	ΔV(BR)DSS/ ΔTJ	ID = 1mA,Reference to 25℃	N-Ch		0.044		V/℃	
		ID = -1mA,Reference to 25℃	P-Ch		-0.012			
Static Drain-to-Source On-Resistance	RDS(on)	VGS = 4.5V, ID = 2.6A*1	N-Ch			0.050	Ω	
		VGS = 2.7V, ID = 2.2A*1				0.070		
		VGS = -4.5V, ID = -2.2A*1	P-Ch			0.090		
		VGS = -2.7V, ID = -1.8A*1				0.140		
Gate Threshold Voltage	VGS(th)	VDS = VGS, ID = 250 μ A	N-Ch	0.70			V	
		VDS = VGS, ID = -250 μ A	P-Ch	-0.70				
Forward Transconductance	gfs	VDS =15V, ID = 2.6A*1	N-Ch	8.30			S	
		VDS = -15V, ID = -2.2A*1	P-Ch	4.00				
Drain-to-Source Leakage Current	IDSS	VDS = 16V, VGS = 0V	N-Ch			1.0	μ A	
		VDS = -16V, VGS = 0V	P-Ch			-1.0		
		VDS = 16V, VGS = 0V, TJ = 125℃	N-Ch			25		
		VDS = -16V, VGS = 0V, TJ = 125℃	P-Ch			-25		
Gate-to-Source Forward Leakage	IGSS	VGS = ±12V	N-Ch			±100	nA	
			P-Ch			±100		
Total Gate Charge	Qg	N-Channel ID =2.6A,VDS = 16V,VGS =4.5V *1	N-Ch			20	nC	
Gate-to-Source Charge	Qgs	P-Channel ID = -2.2A,VDS = -16V,VGS = -4.5V *1	P-Ch			22		
			N-Ch			2.2		
P-Ch				3.3				
Gate-to-Drain ("Miller") Charge	Qgd		N-Ch			8.0		
			P-Ch			9.0		
Turn-On Delay Time	td(on)	N-Channel VDD = 10V,ID = 2.6A,RG = 6.0 Ω P-Channel RD = 3.8 Ω *1 P-Channel VDD = -10V,ID = -2.2A,RG = 6.0 Ω RD = 4.5 Ω 1*1	N-Ch		9.0		ns	
			P-Ch		8.4			
Rise Time	tr		N-Ch		42			
			P-Ch		26			
Turn-Off Delay Time	td(off)		N-Ch		32			
			P-Ch		51			
Fall Time	tf		N-Ch		51			
			P-Ch		33			
Internal Drain Inductace	LD	Between lead tip and center of die contact	N-Ch		4.0		nH	
			P-Ch		4.0			
Internal Source Inductance	LS		N-Ch		6.0			
			P-Ch		6.0			
Input Capacitance	Ciss		N-Channel VGS = 0V,Vbs = 15V,f = 1.0MHz *1	N-Ch		660		pF
			P-Ch		610			
Output Capacitance	Coss		N-Channel	N-Ch		280		
			P-Channel	P-Ch		310		
Reverse Transfer Capacitance	Crss	VGS = 0V,VDS = -15V,f = 1.0MHz *1	N-Ch		140			
		P-Ch		170				

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■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Continuous Source Current (Body Diode)	Is		N-Ch		2.5	A
			P-Ch		-2.5	
Pulsed Source Current (Body Diode) *2	ISM		N-Ch		21	
			P-Ch		-17	
Diode Forward Voltage	VSD	TJ = 25°C, Is = 1.8A, VGS = 0V*1	N-Ch		1.0	V
		TJ = 25°C, Is = -1.8A, VGS = 0V*1	P-Ch		-1.0	
Reverse Recovery Time	trr	N-Channel	N-Ch	29	44	ns
		TJ = 25°C, IF = 2.6A, di/dt = 100A/μs*1	P-Ch	56	84	
Reverse Recovery Charge	Qrr	P-Channel	N-Ch	22	33	nC
		TJ = 25°C, IF = -2.2A, di/dt = -100A/μs*1	P-Ch	71	110	
Forward Turn-On Time	ton	Intrinsic turn-on time is negligible (turn-on is dominated by Ls+Ld)	N-Ch			
			P-Ch			

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

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