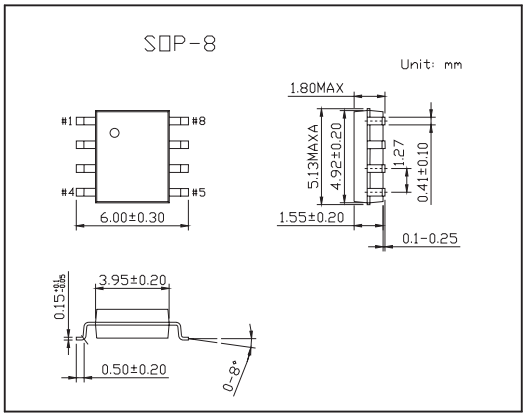
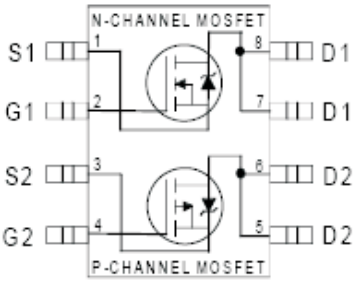
HEXFET®Power MOSFET

KRF7350



Features

- Ultra Low On-Resistance
- Dual N and P Channel MOSFET
- Surface Mount
- Available in Tape and Reel



Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	N-Channel	P-Channel	Unit
Drain-Source Voltage	V_{DS}	100	-100	V
Continuous Drain Current Ta = 25℃	I_D	2.1	-1.5	A
Continuous Drain Current Ta = 70℃	I_D	1.7	-1.2	
Pulsed Drain Current *1	I_{DM}	8.4	-6.0	
Power Dissipation @Ta= 25℃	P_D	2.0		W
Linear Derating Factor		0.016		W/℃
Gate-to-Source Voltage	V_{GS}	±20		V
Single Pulse Avalanche Energy *4	E_{AS}	35	51	mJ
Peak Diode Recovery dv/dt *2	dv/dt	4.0	4.3	V/ns
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to + 150		℃
Maximum Junction-to-Ambient *3	$R_{\theta JA}$	62.5		℃/W
Junction-to-Drain Lead	$R_{\theta JL}$	20		

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

*2 Pulse width ≤ 400μs; duty cycle ≤ 2%.

*3 Surface mounted on 1 in square Cu board

*4 N channel: Starting T_J = 25℃, L = 4.0mH, R_G = 25Ω, I_{AS} = 4.2A

P channel: Starting T_J = 25℃, L = 11mH, R_G = 25Ω, I_{AS} = -3.0A

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons		Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	N-Ch	100			V
		V_{GS} = 0V, I_D = -250μA	P-Ch	-100			
Breakdown Voltage Temp. Coefficient	$\triangle V_{(BR)DSS}/\triangle T_J$	I_D = 1mA,Reference to 25℃	N-Ch		0.12		V/℃
		I_D = -1mA,Reference to 25℃	P-Ch		-0.11		
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 2.1A*1	N-Ch			0.21	Ω
		V_{GS} = -10V, I_D = -1.5A*1	P-Ch			0.48	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	N-Ch	2.0		4.0	V
		V_{DS} = V_{GS}, I_D = -250μA	P-Ch	-2.0		-4.0	
Forward Transconductance	g_{fs}	V_{DS} = 50V, I_D = 2.1A*1	N-Ch	2.4			S
		V_{DS} = -50V, I_D = -1.5A*1	P-Ch	1.1			
Drain-to-Source Leakage Current	I_{DSS}	V_{DS} = 100V, V_{GS} = 0V	N-Ch			25	μA
		V_{DS} = -100V, V_{GS} = 0V	P-Ch			-25	
		V_{DS} = 80V, V_{GS} = 0V, T_J = 70℃	N-Ch			250	
		V_{DS} = -80V, V_{GS} = 0V, T_J = 70℃	P-Ch			-250	
Gate-to-Source Forward Leakage	I_{GSS}	V_{GS} = ±20V	N-Ch			±100	nA
			P-Ch			±100	
Total Gate Charge	Q_g	N-Channel I_D =2.1A,V_{DS} = 80V,V_{GS} =10V	N-Ch		19	28	nC
			P-Ch		21	31	
Gate-to-Source Charge	Q_{gs}		N-Ch		3.0	4.5	
		P-Channel	P-Ch		3.4	5.1	
Gate-to-Drain ("Miller") Charge	Q_{gd}	I_D = -1.5A,V_{DS} = -80V,V_{GS} = -10V	N-Ch		8.8	13	
			P-Ch		10	16	
Turn-On Delay Time	$t_{d(on)}$	N-Channel V_{DD} = 50V,I_D = 1.A,R_G = 22Ω	N-Ch		6.7		ns
			P-Ch		25		
Rise Time	t_r	R_D=50Ω,V_{GS} = 10V	N-Ch		11		
		P-Channel	P-Ch		13		
Turn-Off Delay Time	$t_{d(off)}$	V_{DD} = -50V,I_D = -1.0A,R_G = 22Ω	N-Ch		35		
		R_D=50Ω,V_{GS} = -10V	P-Ch		30		
Fall Time	t_f		N-Ch		20		
			P-Ch		40		
Input Capacitance	C_{iss}	N-Channel V_{GS} = 0V,V_{DS} = 25V,f = 1.0MHz	N-Ch		380		pF
			P-Ch		360		
Output Capacitance	C_{oss}		N-Ch		100		
		P-Channel	P-Ch		110		
Reverse Transfer Capacitance	C_{rss}	V_{GS} = 0V,V_{DS} = -25V,f = 1.0MHz	N-Ch		54		
			P-Ch		65		

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Parameter	Symbol	Testconditons		Min	Typ	Max	Unit
Continuous Source Current（Body Diode)	I_S		N-Ch			1.8	A
			P-Ch			-1.4	
Pulsed Source Current （Body Diode) *2	I_{SM}		N-Ch			8.4	
			P-Ch			-6.0	
Diode Forward Voltage	V_{SD}	T_J = 25℃, I_S = 1.8A, V_{GS} = 0V*1	N-Ch			1.3	V
		T_J = 25℃, I_S = -1.4A, V_{GS} = 0V*1	P-Ch			-1.6	
Reverse Recovery Time	t_{rr}	N-Channel	N-Ch		72	110	ns
		T_J = 25℃, I_F =1.8A,di/dt = 100A/μs*1	P-Ch		77	120	
Reverse RecoveryCharge	Q_{rr}	P-Channel	N-Ch		205	310	nC
		T_J=25℃,I_F=-1.4A,di/dt=-100A/μs*1	P-Ch		240	360	

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

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