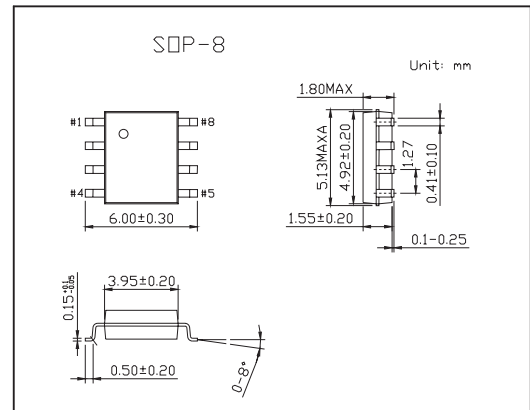
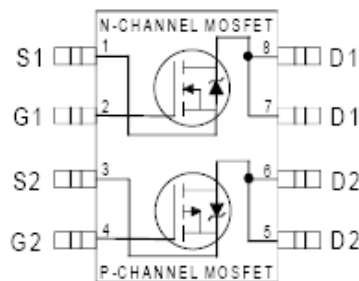


# HEXFET<sup>®</sup> Power MOSFET

## KRF7350

### ■ Features

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



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

Parameter	Symbol	N-Channel	P-Channel	Unit
Drain-Source Voltage	$V_{DS}$	100	-100	V
Continuous Drain Current $T_a = 25^\circ\text{C}$	$I_D$	2.1	-1.5	A
Continuous Drain Current $T_a = 70^\circ\text{C}$	$I_D$	1.7	-1.2	
Pulsed Drain Current *1	$I_{DM}$	8.4	-6.0	
Power Dissipation @ $T_a = 25^\circ\text{C}$	$P_D$	2.0		W
Linear Derating Factor		0.016		W/ $^\circ\text{C}$
Gate-to-Source Voltage	$V_{GS}$	$\pm 20$		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		$^\circ\text{C}$
Maximum Junction-to-Ambient *3	$R_{\theta JA}$	62.5		$^\circ\text{C}/\text{W}$
Junction-to-Drain Lead	$R_{\theta JL}$	20		

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

\*2 Pulse width  $\leq 400 \mu\text{s}$ ; duty cycle  $\leq 2\%$ .

\*3 Surface mounted on 1 in square Cu board

\*4 N channel: Starting  $T_J = 25^\circ\text{C}$ ,  $L = 4.0\text{mH}$ ,  $R_G = 25 \Omega$ ,  $I_{AS} = 4.2\text{A}$

P channel: Starting  $T_J = 25^\circ\text{C}$ ,  $L = 11\text{mH}$ ,  $R_G = 25 \Omega$ ,  $I_{AS} = -3.0\text{A}$

## KRF7350

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250 \mu A$	N-Ch	100		V
		$V_{GS} = 0V, I_D = -250 \mu A$	P-Ch	-100		
Breakdown Voltage Temp. Coefficient	$\frac{\Delta V_{(BR)DSS}}{\Delta T_J}$	$I_D = 1mA, \text{Reference to } 25^\circ C$	N-Ch	0.12		V/°C
		$I_D = -1mA, \text{Reference to } 25^\circ C$	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	$\Omega$
		$V_{GS} = -10V, I_D = -1.5A^*1$	P-Ch		0.48	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu A$	N-Ch	2.0	4.0	V
		$V_{DS} = V_{GS}, I_D = -250 \mu A$	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	$\mu A$
		$V_{DS} = -100V, V_{GS} = 0V$	P-Ch		-25	
		$V_{DS} = 80V, V_{GS} = 0V, T_J = 70^\circ C$	N-Ch		250	
		$V_{DS} = -80V, V_{GS} = 0V, T_J = 70^\circ C$	P-Ch		-250	
Gate-to-Source Forward Leakage	$I_{GSS}$	$V_{GS} = \pm 20V$	N-Ch		$\pm 100$	nA
			P-Ch		$\pm 100$	
Total Gate Charge	$Q_g$	N-Channel $I_D = 2.1A, V_{DS} = 80V, V_{GS} = 10V$	N-Ch	19	28	nC
Gate-to-Source Charge	$Q_{gs}$		P-Ch	21	31	
		Gate-to-Drain ("Miller") Charge	$Q_{gd}$	N-Ch	3.0	
P-Ch	3.4			5.1		
Turn-On Delay Time	$t_{d(on)}$	N-Channel $V_{DD} = 50V, I_D = 1.0A, R_G = 22 \Omega$	N-Ch	6.7		ns
			P-Ch	25		
Rise Time	$t_r$	P-Channel $R_D = 50 \Omega, V_{GS} = 10V$	N-Ch	11		
			P-Ch	13		
Turn-Off Delay Time	$t_{d(off)}$	N-Channel $V_{DD} = -50V, I_D = -1.0A, R_G = 22 \Omega$	N-Ch	35		
			P-Ch	30		
Fall Time	$t_f$	P-Channel $R_D = 50 \Omega, V_{GS} = -10V$	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	$C_{oss}$	P-Channel $V_{GS} = 0V, V_{DS} = -25V, f = 1.0MHz$	N-Ch	100		
			P-Ch	110		
Reverse Transfer Capacitance	$C_{rss}$		N-Ch	54		
			P-Ch	65		

## KRF7350

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit	
Continuous Source Current (Body Diode)	Is		N-Ch		1.8	A	
			P-Ch		-1.4		
Pulsed Source Current (Body Diode) *2	ISM		N-Ch		8.4		
			P-Ch		-6.0		
Diode Forward Voltage	VSD	TJ = 25°C, Is = 1.8A, VGS = 0V*1	N-Ch		1.3	V	
		TJ = 25°C, Is = -1.4A, VGS = 0V*1	P-Ch		-1.6		
Reverse Recovery Time	trr	N-Channel TJ = 25°C, IF = 1.8A, di/dt = 100A/μs*1	N-Ch	72	110	ns	
			P-Ch	77	120		
Reverse Recovery Charge	Qrr		P-Channel TJ = 25°C, IF = -1.4A, di/dt = -100A/μs*1	N-Ch	205	310	nC
				P-Ch	240	360	

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

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