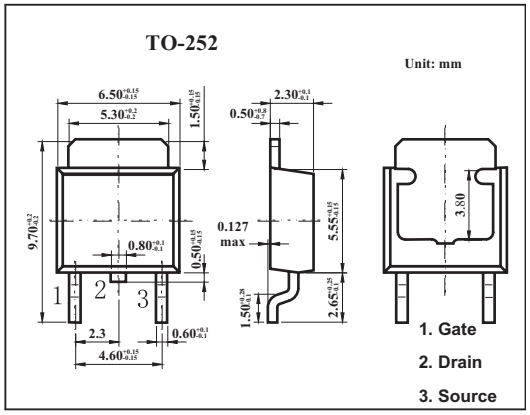
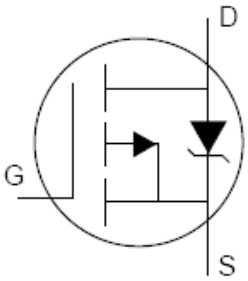
HEXFET®Power MOSFET

KRFR9310



■ Features

- Surface Mount
- Fast Switching
- P-Channel
- Avanced Process Technology
- Fully Avalanche Rated



■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Continuous Drain Current, VGS @ -10V,Tc = 25℃	ID	-1.8	A
Continuous Drain Current, VGS @ -10V,Tc = 100℃	ID	-1.1	
Pulsed Drain Current*1	IDM	-7.2	
Power Dissipation Tc = 25℃	PD	50	W
Linear Derating Factor		0.4	W/℃
Gate-to-Source Voltage	VGS	±20	V
Single Pulse Avalanche Energy*3	EAS	92	mJ
Avalanche Current *1	IAR	-1.8	A
Repetitive Avalanche Energy *1	EAR	5	mJ
Peak Diode Recovery dv/dt *2	dv/dt	-24	V/ns
Operating Junction and Storage Temperature Range	TJ,TSTG	-55 to + 150	℃
Junction-to-Case	R θ JC	2.5	℃/W
Junction-to-Ambient	R θ JA	50	℃/W
Junction-to-Ambient	R θ JA	110	℃/W

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

*2 ISD ≤ -1.1A, di/dt ≤ 450A/μs, VDD ≤ V(BR)DSS,TJ ≤ 150℃

*3 Starting TJ = 25℃, L = 57 mH,RG = 25Ω, IAS = -1.8A.

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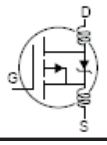
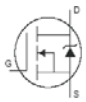
■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =- 250μA	-400			V
Breakdown Voltage Temp. Coefficient	$\triangle V_{(BR)DSS}/\triangle T_J$	I_D = -1mA,Reference to 25℃		-0.41		V/℃
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	V_{GS} = -10V, I_D = -1.1A*1			7.0	Ω
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250μA	-2.0		-4.0	V
Forward Transconductance	g_{fs}	V_{DS} = -50V, I_D = -1.1A*1	0.91			S
Drain-to-Source Leakage Current	I_{DSS}	V_{DS} = -400V, V_{GS} = 0V			-100	μA
		V_{DS} = -320V, V_{GS} = 0V, T_J = 125℃			-500	
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 = -1.1A			13	nC
Gate-to-Source Charge	Q_{gs}	V_{DS} = -320V			3.2	
Gate-to-Drain ("Miller") Charge	Q_{gd}	V_{GS} = -10V,*1			5.0	
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = -200V		11		ns
Rise Time	t_r	I_D = -1.1A		10		
Turn-Off Delay Time	$t_{d(off)}$	R_G =21Ω		25		
Fall Time	t_f	R_D =180Ω*1		24		
Internal Drain Inductance	L_D	Between lead, 6mm (0.25in.) from package and center of die contact 		4.5		nH
Internal Source Inductance	L_S			7.5		nH
Input Capacitance	C_{iss}	V_{GS} = 0V		270		pF
Output Capacitance	C_{oss}	V_{DS} = -25V		50		
Reverse Transfer Capacitance	C_{rss}	f = 1.0MHz		8.0		
Continuous Source Current（Body Diode)	I_S	MOSFET symbol showing the integral reverse p-n junction diode. 			-1.8	A
Pulsed Source Current （Body Diode) *2	I_{SM}				-7.2	
Diode Forward Voltage	V_{SD}	T_J = 25℃, I_S = -1.1A, V_{GS} = 0V*1			-4.0	V
Reverse Recovery Time	t_{rr}	T_J = 25℃, I_F = -1.1A		170	260	ns
Reverse RecoveryCharge	Q_{rr}	di/dt = 100A/μs*1		640	960	μC
Forward Turn-On Time	ton	Intrinsic turn-on time is negligible (turn-on is dominated by L_S+L_D)				

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

*2 Repetitive rating; pulse width limited bymax