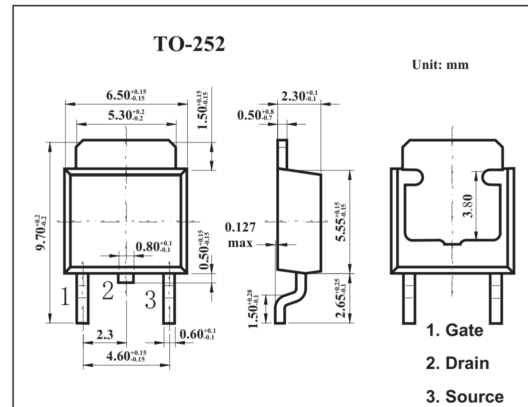
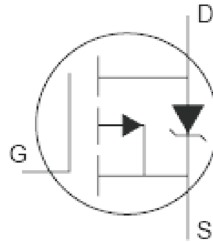
HEXFET®Power MOSFET

KRFR6215



Features

- Advanced Process Technology
- Surface Mount
- 175℃ Operating Temperature
- Fast Switching
- P-Channel
- Fully Avalanche Rated



Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Continuous Drain Current, V_{GS} @ 10V,Tc = 25℃	I_D	-13	A
Continuous Drain Current, V_{GS} @ 10V,Tc = 100℃	I_D	-9	
Pulsed Drain Current*1	I_{DM}	-44	
Power Dissipation TC = 25℃	P_D	110	W
Linear Derating Factor		0.71	W/℃
Gate-to-Source Voltage	V_{GS}	±20	V
Single Pulse Avalanche Energy*3	E_{AS}	310	mJ
Avalanche Current *1	I_{AR}	-6.6	A
Repetitive Avalanche Energy	E_{AR}	11	mJ
Peak Diode Recovery dv/dt *2	dv/dt	5	V/ns
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 to + 175	℃
Junction-to-Case	$R_{\theta JC}$	1.4	℃/W
Junction-to-Ambient	$R_{\theta JA}$	50	℃/W
Junction-to-Ambient	$R_{\theta JA}$	110	℃/W

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

*2 $I_{SD} \leqslant$ -6.6A, di/dt $\leqslant$ -620A/μs, $V_{DD} \leqslant V_{(BR)DSS}$,$T_J \leqslant$ 175℃

*3 Starting TJ = 25℃, L = 14mH,R_G = 25Ω, I_{AS} = -6.6A.

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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 =- 250 μ A	-150			V
Breakdown Voltage Temp. Coefficient	△$V_{(BR)DSS}$/△T_J	I_D = -1mA,Reference to 25℃		-0.02		V/℃
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	V_{GS} = -10V, I_D = -6.6A*1			0.295	Ω
		V_{GS} = -10V, I_D = -6.6A, T_J = 150℃*1			0.58	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250 μ A	-2.0		-4.0	V
Forward Transconductance	g_{fs}	V_{DS} = -50V, I_D = -6.6A*1	3.6			S
Drain-to-Source Leakage Current	I_{DSS}	V_{DS} = -150V, V_{GS} = 0V			-25	μ A
		V_{DS} = -120V, V_{GS} = 0V, T_J = 150℃			-250	
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 = -6.6A			66	nC
Gate-to-Source Charge	Q_{gs}	V_{DS} = -120V			8.1	
Gate-to-Drain ("Miller") Charge	Q_{gd}	V_{GS} = -10V,*1			35	
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = -75V		14		ns
Rise Time	t_r	I_D = -6.6A		36		
Turn-Off Delay Time	$t_{d(off)}$	R_G =6.8 Ω		53		
Fall Time	t_f	R_D =12 Ω *1		37		
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		860		pF
Output Capacitance	C_{oss}	V_{DS} = -25V		220		
Reverse Transfer Capacitance	C_{rss}	f = 1.0MHz		130		
Continuous Source Current（Body Diode)	I_S	MOSFET symbol showing the integral reverse p-n junction diode.			-13	A
Pulsed Source Current （Body Diode) *2	I_{SM}				-44	
Diode Forward Voltage	V_{SD}	T_J = 25℃, I_S = -6.6A, V_{GS} = 0V*1			-1.6	V
Reverse Recovery Time	t_{rr}	T_J = 25℃, I_F = -6.6A		160	240	ns
Reverse RecoveryCharge	Q_{rr}	di/dt = 100A/ μ s*1		1.2	1.7	nC
Forward Turn-On Time	ton	Intrinsic turn-on time is negligible (turn-on is dominated by L_S+L_D)				

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

*2 Repetitive rating; pulse width limited bymax