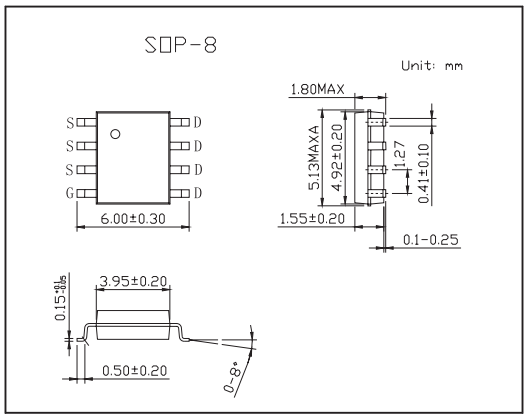
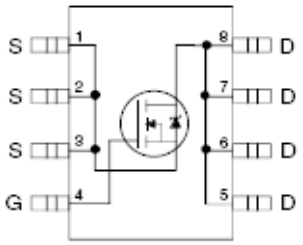
HEXFET®Power MOSFET

KRF7494



■ Features

- High frequency DC-DC converters



Top View

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Continuous Drain Current, V_{GS} @ 10V,Ta = 25℃	I_D	5.2	A
Continuous Drain Current, V_{GS} @ 10V,T_A = 100℃	I_D	3.7	
Pulsed Drain Current*1	I_{DM}	42	
Power Dissipation Ta = 25℃ *1	P_D	3	W
Linear Derating Factor		0.02	W/℃
Gate-to-Source Voltage	V_{GS}	±20	V
Drain-Source Voltage	V_{DS}	150	V
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 to + 150	℃
Junction-to-Ambient	$R_{\theta JA}$	50	℃/W
Junction-to-Drain Lead	$R_{\theta JL}$	20	℃/W
Single Pulse Avalanche Energy*3	E_{AS}	370	mJ
Avalanche Current *2	I_{AR}	3.1	A

*1 Pulse width ≤ 400 μ s; duty cycle ≤ 2%.

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

*3 Starting T_J = 25℃, L = 77mH,R_G = 25Ω, I_{AS} = 3.1A.

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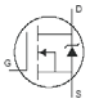
■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	150			V
Breakdown Voltage Temp. Coefficient	$\triangle V_{(BR)DSS}/\triangle T_J$	I_D = 1mA,Reference to 25℃		0.15		V/℃
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 3.1A*1		35	44	mΩ
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	2.5		4.5	V
Forward Transconductance	g_{fs}	V_{DS} = 50V, I_D = 5.2A*1	12			S
Drain-to-Source Leakage Current	I_{DSS}	V_{DS} = 120V, V_{GS} = 0V			1.0	μA
		V_{DS} = 120V, V_{GS} = 0V, T_J = 125℃			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 = 3.1A		36	54	nC
Gate-to-Source Charge	Q_{gs}	V_{DS} = 75V		7.5		
Gate-to-Drain ("Miller") Charge	Q_{gd}	V_{GS} = 10V,*1		13		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = 100V		15		ns
Rise Time	t_r	I_D = 3.1A		13		
Turn-Off Delay Time	$t_{d(off)}$	R_G =6.5Ω		36		
Fall Time	t_f	V_{GS}=10V		14		
Input Capacitance	C_{iss}	V_{GS} = 0V		1750		pF
Output Capacitance	C_{oss}	V_{DS} = 25V		220		
Reverse Transfer Capacitance	C_{rss}	□ = 1.0MHz		100		
Output Capacitance	Coss	V_{GS} = 0V, V_{DS} = 1.0V, f = 1.0MHz		870		
Output Capacitance	Coss	V_{GS} = 0V, V_{DS} = 120V, f= 1.0MHz		120		
Effective Output Capacitance	Coss eff.	V_{GS} = 0V, V_{DS} = 0V to 120V		170		
Continuous Source Current（Body Diode)	I_S	MOSFET symbol showing the integral reverse p-n junction diode. 			2.7	A
Pulsed Source Current （Body Diode) *2	I_{SM}				42	
Diode Forward Voltage	V_{SD}	T_J = 25℃, I_S = 3.1A, V_{GS} = 0V*1			1.3	V
Reverse Recovery Time	t_{rr}	T_J = 25℃, I_F = 3.1A.V_{DD}=25V		55		ns
Reverse RecoveryCharge	Q_{rr}	di/dt = 100A/μs*1		140		nC
Forward Turn-On Time	ton	Intrinsic turn-on time is negligible (turn-on is dominated by L_S+L_D)				

*1 Pulse width ≤ 400□s; duty cycle ≤ 2%.

*2 Repetitive rating; pulse width limited bymax