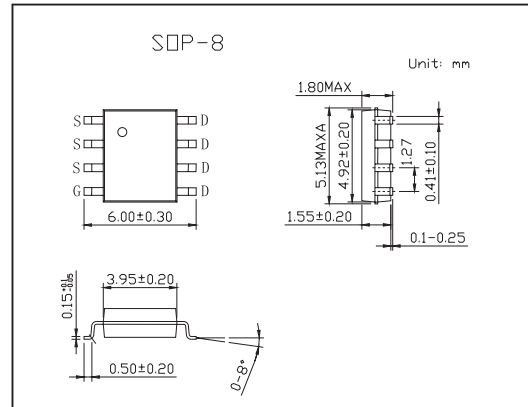
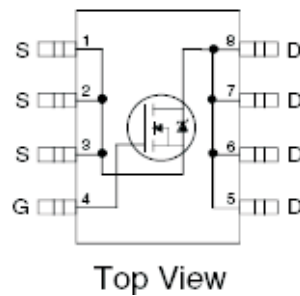


HEXFET[®] Power MOSFET

KRF7494

■ Features

- High frequency DC-DC converters



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

Parameter	Symbol	Rating	Unit
Continuous Drain Current, $V_{GS} @ 10V, T_a = 25^\circ\text{C}$	I_D	5.2	A
Continuous Drain Current, $V_{GS} @ 10V, T_a = 100^\circ\text{C}$	I_D	3.7	
Pulsed Drain Current*1	I_{DM}	42	
Power Dissipation $T_a = 25^\circ\text{C}$ *1	P_D	3	W
Linear Derating Factor		0.02	W/°C
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	°C
Junction-to-Ambient	$R_{\theta JA}$	50	°C/W
Junction-to-Drain Lead	$R_{\theta JL}$	20	°C/W
Single Pulse Avalanche Energy*3	EAS	370	mJ
Avalanche Current *2	I_{AR}	3.1	A

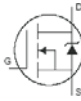
*1 Pulse width $\leq 400 \mu\text{s}$; duty cycle $\leq 2\%$.

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

*3 Starting $T_J = 25^\circ\text{C}$, $L = 77\text{mH}$, $R_G = 25 \Omega$, $I_{AS} = 3.1\text{A}$.

KRF7494

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250 \mu A$	150			V
Breakdown Voltage Temp. Coefficient	$\Delta V_{(BR)DSS}/\Delta T_J$	$I_D = 1mA, \text{Reference to } 25^\circ C$		0.15		V/°C
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 3.1A^{*1}$		35	44	mΩ
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu A$	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
		$V_{DS} = 120V, V_{GS} = 0V, T_J = 125^\circ C$			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	$t_{d(off)}$	$R_G = 6.5 \Omega$		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}	$f = 1.0MHz$		100		
Output Capacitance	C_{oss}	$V_{GS} = 0V, V_{DS} = 1.0V, f = 1.0MHz$		870		
Output Capacitance	C_{oss}	$V_{GS} = 0V, V_{DS} = 120V, f = 1.0MHz$		120		
Effective Output Capacitance	$C_{oss \text{ eff.}}$	$V_{GS} = 0V, V_{DS} = 0V \text{ to } 120V$		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}	$T_J = 25^\circ C, I_S = 3.1A, V_{GS} = 0V^{*1}$			1.3	V
Reverse Recovery Time	t_{rr}	$T_J = 25^\circ C, I_F = 3.1A, V_{DD} = 25V$		55		ns
Reverse Recovery Charge	Q_{rr}	$di/dt = 100A/\mu s^{*1}$		140		nC
Forward Turn-On Time	t_{on}	Intrinsic turn-on time is negligible (turn-on is dominated by $L_S + L_D$)				

*1 Pulse width $\leq 400 \mu s$; duty cycle $\leq 2\%$.

*2 Repetitive rating; pulse width limited by max