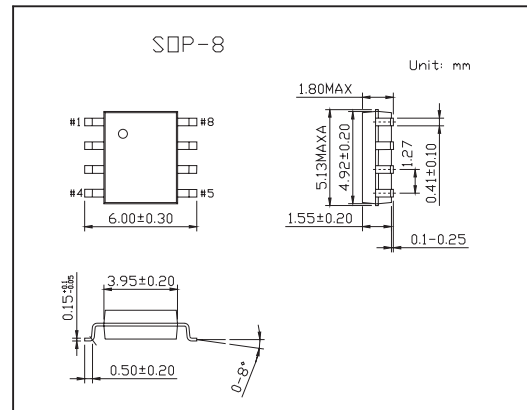
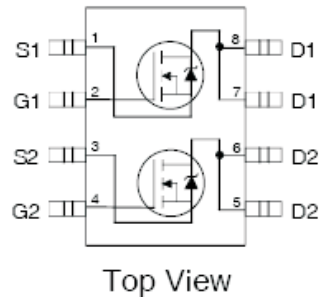


HEXFET[®] Power MOSFET

KRF8910

■ Features



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

Parameter	Symbol	Rating	Unit
Drain- Source Voltage	V_{DS}	20	V
Gate-to-Source Voltage	V_{GS}	± 20	
Continuous Drain Current, $V_{GS} @ 10V$ $T_a = 25^\circ\text{C}$	I_D	10	A
Continuous Drain Current, $V_{GS} @ 10V$ $T_c = 70^\circ\text{C}$	I_D	8.3	
Pulsed Drain Current *1	I_{DM}	82	
Maximum Power Dissipation $T_a = 25^\circ\text{C}$	P_D	2	W
Maximum Power Dissipation $T_a = 70^\circ\text{C}$		1.3	
Linear Derating Factor		0.016	
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to + 150	$^\circ\text{C}$
Junction-to-Drain Lead	$R_{\theta JL}$	20	$^\circ\text{C}/\text{W}$
Maximum Junction-to-Ambient *2,3	$R_{\theta JA}$	62.5	$^\circ\text{C}/\text{W}$
Single Pulse Avalanche Energy *4	E_{AS}	19	mJ
Avalanche Current *1	I_{AR}	8.2	A

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

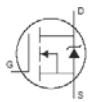
*2 when mounted on 1 inch square copper board.

*3 R_{θ} is measured at T_J of approximately 90°C

*4 Starting $T_J = 25^\circ\text{C}$, $L = 0.57\text{mH}$, $R_G = 25\ \Omega$, $I_{AS} = 8.2\text{A}$.

KRF8910

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D = 250A	20			V
Breakdown Voltage Temp. Coefficient	$\Delta V_{(BR)DSS}/\Delta T_J$	I _D = 1mA, Reference to 25°C		0.015		V/°C
Static Drain-to-Source On-Resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 10A*1		10.7	13.4	Ω
		V _{GS} = 4.5V, I _D = 8.0A*1		14.6	18.3	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μ A	1.65		2.55	V
Gate Threshold Voltage Coefficient	$\Delta V_{GS(th)}/\Delta T_J$			-4.8		mV/°C
Drain-to-Source Leakage Current	I _{DSS}	V _{DS} = 16V, V _{GS} = 0V			1.0	μ A
		V _{DS} = 16V, V _{GS} = 0V, T _J = 125°C			150	
Gate-to-Source Forward Leakage	I _{GSS}	V _{GS} = 20V			100	nA
Gate-to-Source Reverse Leakage		V _{GS} = -20V			-100	
Forward Transconductance	g _{fs}	V _{DS} = 10V, I _D = 8.2A	24			S
Total Gate Charge	Q _g	I _D = 8.2A, V _{GS} = 4.5V, V _{DS} = 10V		7.4	11	nC
Pre-V _{th} Gate-to-Source Charge	Q _{gs1}			2.4		
Post-V _{th} Gate-to-Source Charge	Q _{gs2}			0.80		
Gate-to-Drain Charge	Q _{gd}			2.5		
Gate Charge Overdrive	Q _{godr}			1.7		
Switch Charge (Q _{gs2} + Q _{gd})	Q _{sw}			3.3		
Output Charge	Q _{oss}		V _{DS} = 10V, V _{GS} = 0V		4.4	
Turn-On Delay Time	t _{d(on)}	V _{DD} = 10V, V _{GS} = 4.5V, I _D = 8.2A		6.2		ns
Rise Time	t _r			10		
Turn-Off Delay Time	t _{d(off)}			9.7		
Fall Time	t _f			4.1		
Input Capacitance	C _{iss}	V _{GS} = 0V		960		pF
Output Capacitance	C _{oss}	V _{DS} = 10V		300		
Reverse Transfer Capacitance	C _{rss}	f = 1.0MHz		160		
Continuous Source Current (Body Diode)	I _S	MOSFET symbol showing the integral reverse p-n junction diode. 			2.5	A
Pulsed Source Current (Body Diode) *2	I _{SM}				82	
Diode Forward Voltage	V _{SD}	T _J = 25°C, I _S = 8.2A, V _{GS} = 0V*1			1.0	V
Reverse Recovery Time	t _{rr}	T _J = 25°C, I _F = 8.2A, V _{DD} = 10V		17	26	ns
Reverse Recovery Charge	Q _{rr}	di/dt = 100A/μ s*1		6.5	9.7	μ C

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

*2 Repetitive rating; pulse width limited by max