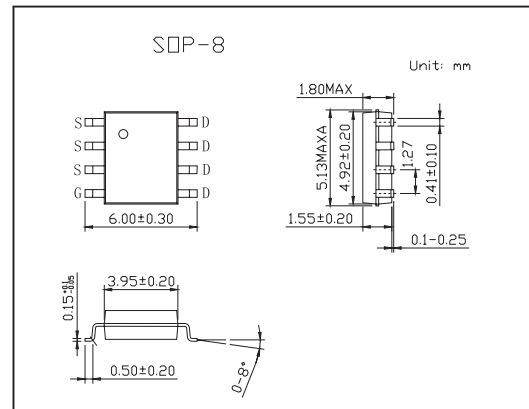
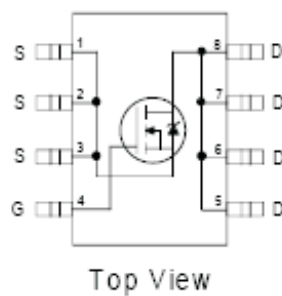


HEXFET[®] Power MOSFET

KRF7460

■ Features



■ 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	12	A
Continuous Drain Current, $V_{GS} @ 10V, T_a = 70^\circ\text{C}$	I_D	10	
Pulsed Drain Current*1	I_{DM}	100	
Power Dissipation $T_a = 25^\circ\text{C}$ *1	P_D	2.5	W
$T_a = 70^\circ\text{C}$ *1		1.6	
Linear Derating Factor		0.02	W/ $^\circ\text{C}$
Gate-to-Source Voltage	V_{GS}	± 20	V
Drain-Source Voltage	V_{DS}	20	V
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to + 150	$^\circ\text{C}$
Junction-to-Ambient	$R_{\theta JA}$	50	$^\circ\text{C}/\text{W}$
Junction-to-Drain Lead	$R_{\theta JL}$	20	$^\circ\text{C}/\text{W}$
Single Pulse Avalanche Energy*3	E_{AS}	240	mJ
Avalanche Current *2	I_{AR}	9.6	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 $T_J = 25^\circ\text{C}$, $L = 5.2\text{mH}$, $R_G = 25 \Omega$, $I_{AS} = 9.6\text{A}$.

KRF7460

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250 \mu A$	20			V
Breakdown Voltage Temp. Coefficient	$\Delta V_{(BR)DSS} / \Delta T_J$	$I_D = 1mA, \text{Reference to } 25^\circ C$		0.089		V/°C
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 12A^*1$		7.2	10	$m\Omega$
		$V_{GS} = 4.5V, I_D = 9.6A^*1$		10.5	14	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu A$	1.0		3.0	V
Forward Transconductance	g_{fs}	$V_{DS} = 16V, I_D = 9.6A^*1$	26			S
Drain-to-Source Leakage Current	I_{DSS}	$V_{DS} = 16V, V_{GS} = 0V$			20	μA
		$V_{DS} = 16V, V_{GS} = 0V, T_J = 125^\circ C$			100	
Gate-to-Source Forward Leakage	I_{GSS}	$V_{GS} = 16V$			200	nA
Gate-to-Source Reverse Leakage		$V_{GS} = -16V$			-200	
Total Gate Charge	Q_g	$I_D = 9.6A$		19		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS} = 10V$		6.9		
Gate-to-Drain ("Miller") Charge	Q_{gd}	$V_{GS} = 4.5V, ^*1$		6.0		
Output Gate Charge	Q_{oss}	$V_{GS} = 0V, V_{DS} = 10V$		17	26	
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 10V$		11		ns
Rise Time	t_r	$I_D = 9.6A$		6.9		
Turn-Off Delay Time	$t_{d(off)}$	$R_G = 1.8\Omega$		12		
Fall Time	t_f	$V_{GS} = 4.5V$		4.3		
Input Capacitance	C_{iss}	$V_{GS} = 0V$		205		pF
Output Capacitance	C_{oss}	$V_{DS} = 10V$		1060		
Reverse Transfer Capacitance	C_{rss}	$f = 1.0MHz$		150		
Continuous Source Current (Body Diode)	I_S	MOSFET symbol showing the integral reverse p-n junction diode. 			2.3	A
Pulsed Source Current (Body Diode) *2	I_{SM}				100	
Diode Forward Voltage	V_{SD}	$T_J = 25^\circ C, I_S = 9.6A, V_{GS} = 0V^*1$		0.8	1.3	V
		$T_J = 125^\circ C, I_S = 9.6A, V_{GS} = 0V^*1$		0.66		
Reverse Recovery Time	t_{rr}	$T_J = 25^\circ C, I_F = 9.6A, V_R = 10V$		44	66	ns
Reverse Recovery Charge	Q_{rr}	$di/dt = 100A/\mu s^*1$		60	90	nC
Reverse Recovery Time	t_{rr}	$T_J = 125^\circ C, I_F = 9.6A, V_R = 10V$		44	66	ns
Reverse Recovery Charge	Q_{rr}	$di/dt = 100A/\mu s^*1$		64	96	nC

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

*2 Repetitive rating; pulse width limited by max