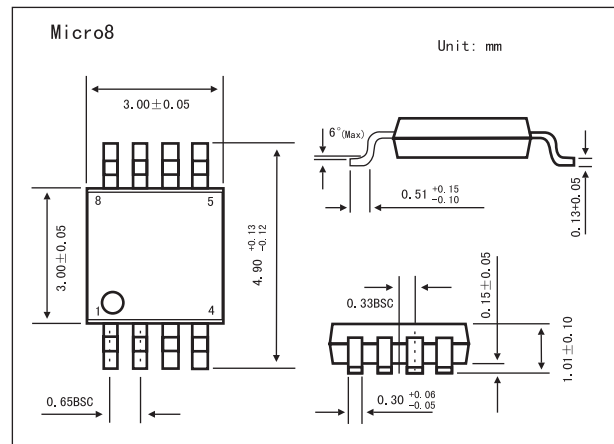
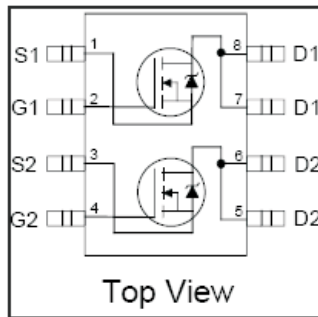


# HEXFET<sup>®</sup> Power MOSFET

## KRF7530

### ■ Features

- Trench Technology
- Ultra Low On-Resistance
- Dual N-Channel MOSFET
- Very Small SOIC Package
- Low Profile (<1.1mm)
- Available in Tape & Reel



### ■ Absolute Maximum Ratings Ta = 25°C

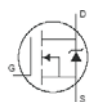
Parameter	Symbol	Rating	Unit
Drain- Source Voltage	V <sub>DS</sub>	20	A
Continuous Drain Current, V <sub>GS</sub> @ 4.5V, T <sub>a</sub> = 25°C	I <sub>D</sub>	5.4	A
Continuous Drain Current, V <sub>GS</sub> @ 4.5V, T <sub>a</sub> = 70°C	I <sub>D</sub>	4.3	
Pulsed Drain Current*1	I <sub>DM</sub>	40	
Power Dissipation T <sub>a</sub> = 25°C	P <sub>D</sub>	1.3	W
Power Dissipation T <sub>a</sub> = 70°C	P <sub>D</sub>	0.8	
Linear Derating Factor		10	mW/°C
Single Pulse Avalanche Energy *2	E <sub>AS</sub>	33	mJ
Gate-to-Source Voltage	V <sub>GS</sub>	±12	V
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C
Junction-to-Ambient *1	R <sub>θJA</sub>	100	°C/W

\*1 Surface mounted on FR-4 board, t ≤ 10sec.

\*2 Starting T<sub>J</sub> = 25°C, L = 2.6mH, R<sub>G</sub> = 25 Ω, I<sub>AS</sub> = 5.0A.

## KRF7530

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	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	$\Delta V_{(BR)DSS} / \Delta T_J$	$I_D = 1mA, \text{Reference to } 25^\circ C$		0.01		V/°C
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 5.4A^{*1}$			0.030	$\Omega$
		$V_{GS} = 2.5V, I_D = 4.6A^{*1}$			0.045	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu A$	0.60		1.2	V
Forward Transconductance	$g_{fs}$	$V_{DS} = 10V, I_D = 5.4A^{*1}$	13			S
Drain-to-Source Leakage Current	$I_{DSS}$	$V_{DS} = 16V, V_{GS} = 0V$			1.0	$\mu A$
		$V_{DS} = 16V, V_{GS} = 0V, T_J = 70^\circ C$			25	
Gate-to-Source Forward Leakage	$I_{GSS}$	$V_{GS} = 12V$			-100	nA
Gate-to-Source Reverse Leakage		$V_{GS} = -12V$			100	
Total Gate Charge	$Q_g$	$I_D = 5.4A$		18	26	nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS} = 16V$		3.4	5.1	
Gate-to-Drain ("Miller") Charge	$Q_{gd}$	$V_{GS} = 4.5V,^{*1}$		3.4	5.1	
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 10V$		8.5		ns
Rise Time	$t_r$	$I_D = 1.0A$		11		
Turn-Off Delay Time	$t_{d(off)}$	$R_G = 6.0 \Omega$		36		
Fall Time	$t_f$	$R_D = 10 \Omega$		16		
Input Capacitance	$C_{iss}$	$V_{GS} = 0V$		1310		pF
Output Capacitance	$C_{oss}$	$V_{DS} = 15V$		180		
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. 			1.3	A
Pulsed Source Current (Body Diode) *2	$I_{SM}$				40	
Diode Forward Voltage	$V_{SD}$	$T_J = 25^\circ C, I_S = 1.3A, V_{GS} = 0V^{*1}$			1.2	V
Reverse Recovery Time	$t_{rr}$	$T_J = 25^\circ C, I_F = 1.3A, V_R = 10V$		19	29	ns
Reverse Recovery Charge	$Q_{rr}$	$di/dt = 100A/\mu s^{*1}$		13	20	nC

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

\*2 Repetitive rating; pulse width limited by max