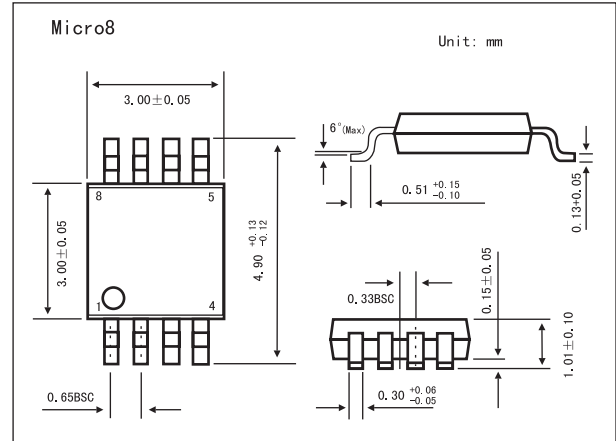
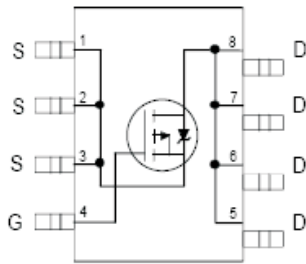


HEXFET<sup>®</sup> Power MOSFET

## KRF7663

## ■ Features

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

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	-20	V
Continuous Drain Current, $V_{GS} @ -4.5V @ T_a = 25^\circ\text{C}$	$I_D$	-8.2	A
Continuous Drain Current, $V_{GS} @ -4.5V @ T_a = 70^\circ\text{C}$	$I_D$	-6.6	
Pulsed Drain Current *1	$I_{DM}$	-66	
Power Dissipation @ $T_a = 25^\circ\text{C}$	$P_D$	1.8	W
Power Dissipation @ $T_a = 70^\circ\text{C}$		1.15	
Linear Derating Factor		10	$\text{mW}/^\circ\text{C}$
Single Pulse Avalanche Energy *2	$E_{AS}$	115	mJ
Gate-to-Source Voltage	$V_{GS}$	$\pm 12$	V
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to + 150	$^\circ\text{C}$
Maximum Junction-to-Ambient *3	$R_{\theta JA}$	70	$^\circ\text{C}/\text{W}$


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

\*2 Starting  $T_J = 25^\circ\text{C}$ ,  $L = 17.8\text{mH}$ ,  $R_G = 25\ \Omega$ ,  $I_{AS} = -3.6\text{A}$

\*3 When mounted on 1 inch square copper board,  $t < 10\ \text{sec}$

## KRF7663

## ■ 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	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -7.0A^{*1}$			0.02	$\Omega$
		$V_{GS} = -2.5V, I_D = -5.1A^{*1}$			0.04	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250 \mu A$	-0.60		-1.2	V
Forward Transconductance	$g_{fs}$	$V_{DS} = -10V, I_D = -7.0A^{*1}$	14.5			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	$Q_g$	$I_D = -6.0A$		30	45	nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS} = -10V$		5.0	7.5	
Gate-to-Drain ("Miller") Charge	$Q_{gd}$	$V_{GS} = -5V$		7.0	10.5	
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -10V$		11		ns
Rise Time	$t_r$	$I_D = -6A$		100		
Turn-Off Delay Time	$t_{d(off)}$	$R_G = 6.2 \Omega$		125		
Fall Time	$t_f$	$R_D = 1.64 \Omega$		172		
Input Capacitance	$C_{iss}$	$V_{GS} = 0V$		2520		pF
Output Capacitance	$C_{oss}$	$V_{DS} = -10V$		615		
Reverse Transfer Capacitance	$C_{rss}$	$f = 1.0MHz$		375		
Continuous Source Current (Body Diode)	$I_S$	MOSFET symbol showing the integral reverse p-n junction diode. 			-1.8	A
Pulsed Source Current (Body Diode) *2	$I_{SM}$				-66	
Diode Forward Voltage	$V_{SD}$	$T_J = 25^\circ C, I_S = -7A, V_{GS} = 0V^{*1}$			-1.2	V
Reverse Recovery Time	$t_{rr}$	$T_J = 25^\circ C, I_F = -2.5A$		70	105	ns
Reverse Recovery Charge	$Q_{rr}$	$di/dt = -100A/\mu s^{*1}$		50	75	$\mu C$

\*1 Pulse width  $\leq 300 \mu s$ ; duty cycle  $\leq 2\%$ .

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