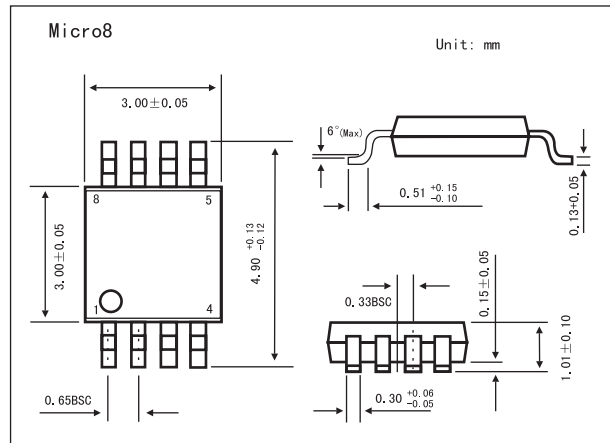
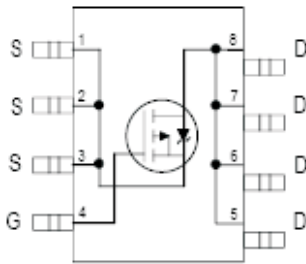


# HEXFET<sup>®</sup> Power MOSFET

## KRF7604

### ■ Features

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



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

Parameter	Symbol	Rating	Unit
Continuous Drain Current, $V_{GS} @ -4.5V @ T_a = 25^\circ\text{C}$	$I_D$	-3.6	A
Continuous Drain Current, $V_{GS} @ -4.5V @ T_a = 70^\circ\text{C}$	$I_D$	-2.9	
Pulsed Drain Current *1	$I_{DM}$	-19	
Power Dissipation @ $T_a = 25^\circ\text{C}$	$P_D$	1.8	W
Linear Derating Factor		14	mW/°C
Gate-to-Source Voltage	$V_{GS}$	$\pm 12$	V
Peak Diode Recovery $dv/dt$ *2	$dv/dt$	-5.0	V/ns
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to + 150	°C
Maximum Junction-to-Ambient *3	$R_{\theta JA}$	70	°C/W


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

\*2  $I_{SD} \leq -2.4A$ ,  $di/dt \leq -96A/\mu s$ ,  $V_{DD} \leq V_{(BR)DSS}$ ,  $T_J \leq 150^\circ\text{C}$

\*3 Surface mounted on FR-4 board,  $t \leq 10\text{sec}$ .

## KRF7604

## ■ 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	$\Delta V_{(BR)DSS} / \Delta T_J$	$I_D = -1mA, \text{Reference to } 25^\circ C$		-0.022		V/°C
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -2.4A^{*1}$			0.09	mΩ
		$V_{GS} = -2.7V, I_D = -1.2A^{*1}$			0.13	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250 \mu A$	-0.70			V
Forward Transconductance	$g_{fs}$	$V_{DS} = -10V, I_D = -1.2A^{*1}$	2.6			S
Drain-to-Source Leakage Current	$I_{DSS}$	$V_{DS} = -16V, V_{GS} = 0V$			-1.0	μA
		$V_{DS} = -16V, V_{GS} = 0V, T_J = 125^\circ C$			-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	$Q_g$	$I_D = -2.4A$		13	20	nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS} = -16V$		2.6	3.9	
Gate-to-Drain ("Miller") Charge	$Q_{gd}$	$V_{GS} = -4.5V$		5.6	9.0	
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -10V$		17		ns
Rise Time	$t_r$	$I_D = -2.4A$		53		
Turn-Off Delay Time	$t_{d(off)}$	$R_G = 6 \Omega$		31		
Fall Time	$t_f$	$R_D = 4.0 \Omega$		38		
Input Capacitance	$C_{iss}$	$V_{GS} = 0V$		590		pF
Output Capacitance	$C_{oss}$	$V_{DS} = -15V$		330		
Reverse Transfer Capacitance	$C_{rss}$	$f = 1.0MHz$		170		
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	$I_{SM}$				-19	
Diode Forward Voltage	$V_{SD}$	$T_J = 25^\circ C, I_S = -2.4A, V_{GS} = 0V^{*1}$			-1.2	V
Reverse Recovery Time	$t_{rr}$	$T_J = 25^\circ C, I_F = -2.4A$		41	62	ns
Reverse Recovery Charge	$Q_{rr}$	$di/dt = 100A / \mu s^{*1}$		38	57	μC

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

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