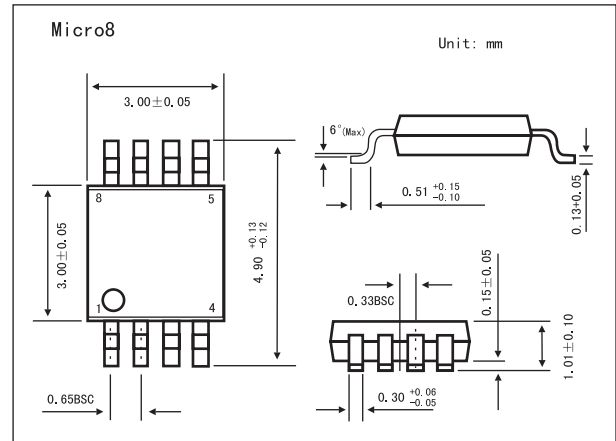
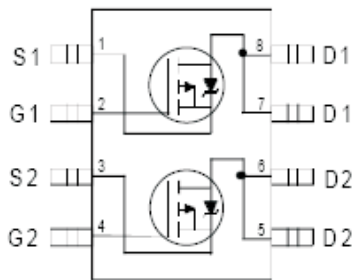


# HEXFET<sup>®</sup> Power MOSFET

## KRF7504

### ■ Features

- Generation V Technology
- Ultra Low On-Resistance
- Dual 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, $V_{GS} @ -4.5V @ T_A = 25^\circ\text{C}$	$I_D$	-1.7	A
Continuous Drain Current, $V_{GS} @ -4.5V @ T_A = 70^\circ\text{C}$	$I_D$	-1.4	
Pulsed Drain Current *1	$I_{DM}$	-9.6	
Power Dissipation *2 @ $T_A = 25^\circ\text{C}$	$P_D$	1.25	W
Linear Derating Factor		10	m W/°C
Gate-to-Source Voltage	$V_{GS}$	$\pm 12$	V
Peak Diode Recovery $dv/dt$ *3	$dv/dt$	-5.0	V/ns
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to + 150	°C
Maximum Junction-to-Ambient *2	$R_{\theta JA}$	100	°C/W


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

\*2 Surface mounted on FR-4 board,  $t \leq 10\text{sec}$

\*3  $I_{SD} \leq -1.2A$ ,  $di/dt \leq 100A/\mu s$ ,  $V_{DD} \leq V_{(BR)DSS}$ ,  $T_J \leq 150^\circ\text{C}$

## KRF7504

## ■ 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	$\Delta V_{(BR)DSS}/\Delta T_J$	$I_D = -1mA, \text{Reference to } 25^\circ C$		-0.012		V/°C
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -1.2A^{*1}$			0.27	$\Omega$
		$V_{GS} = -2.7V, I_D = -0.60A^{*1}$			0.40	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250 \mu A$	-0.7			V
Forward Transconductance	$g_{fs}$	$V_{DS} = -10V, I_D = -0.60A^{*1}$	1.3			S
Drain-to-Source Leakage Current	$I_{DSS}$	$V_{DS} = -16V, V_{GS} = 0V$			-1.0	$\mu A$
		$V_{DS} = -16V, V_{GS} = 0V, T_J = 125^\circ C$			-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	$Q_g$	$I_D = -1.2A$		5.4	8.2	nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS} = -16V$		0.96	1.4	
Gate-to-Drain ("Miller") Charge	$Q_{gd}$	$V_{GS} = -4.5V$		2.4	3.6	
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -10V$		9.1		ns
Rise Time	$t_r$	$I_D = -1.2A$		35		
Turn-Off Delay Time	$t_{d(off)}$	$R_D = 8.3 \Omega$		38		
Fall Time	$t_f$	$R_g = 6 \Omega$		43		
Input Capacitance	$C_{iss}$	$V_{GS} = 0V$		240		pF
Output Capacitance	$C_{oss}$	$V_{DS} = -15V$		130		
Reverse Transfer Capacitance	$C_{rss}$	$f = 1.0MHz$		64		
Continuous Source Current (Body Diode)	$I_S$	MOSFET symbol showing the integral reverse p-n junction diode. 			-1.25	A
Pulsed Source Current (Body Diode) *2	$I_{SM}$				-9.6	
Diode Forward Voltage	$V_{SD}$	$T_J = 25^\circ C, I_S = -1.2A, V_{GS} = 0V^{*1}$			-1.2	V
Reverse Recovery Time	$t_{rr}$	$T_J = 25^\circ C, I_F = -1.2A$		52	78	ns
Reverse Recovery Charge	$Q_{rr}$	$di/dt = 100A/\mu s^{*1}$		63	95	nC
Forward Turn-On Time	$t_{on}$	Intrinsic turn-on time is negligible (turn-on is dominated by $L_s+L_D$ )				

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

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