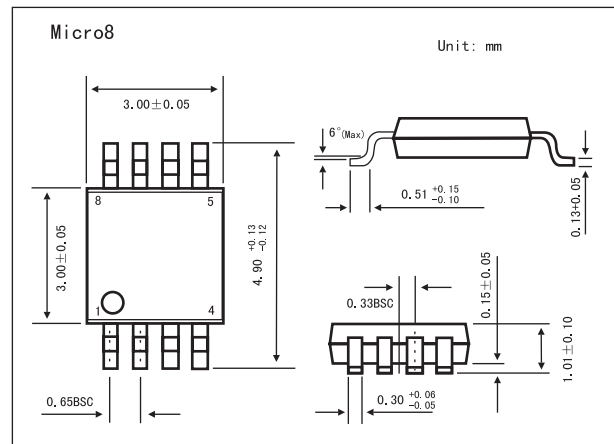
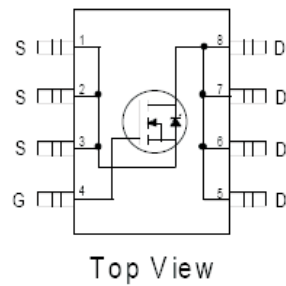


HEXFET[®] Power MOSFET

KRF7603

■ Features

- Generation V Technology
- Ultra Low On-Resistance
- N-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	5.6	A
Continuous Drain Current, $V_{GS} @ 4.5V, T_a = 70^\circ\text{C}$	I_D	4.5	
Pulsed Drain Current*1	I_{DM}	30	
Power Dissipation $T_a = 25^\circ\text{C}$ *1	P_D	1.8	W
Linear Derating Factor		14	W/°C
Gate-to-Source Voltage	V_{GS}	± 20	V
Peak Diode Recovery dv/dt *1	dv/dt	5	V/ns
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to + 150	°C
Junction-to-Ambient *2	$R \theta_{JA}$	70	°C/W

* $I_{SD} \leq 3.7A$, $di/dt \leq 130A/\mu s$, $V_{DD} \leq V_{(BR)DSS}$, $T_J \leq 150^\circ\text{C}$

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

KRF7603

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250 \mu A$	30			V
Breakdown Voltage Temp. Coefficient	$\Delta V_{(BR)DSS} / \Delta T_J$	$I_D = 1mA, \text{Reference to } 25^\circ C$		0.029		V/°C
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 3.7A^{*1}$			0.035	Ω
		$V_{GS} = 4.5V, I_D = 1.9A^{*1}$			0.060	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu A$	1.0			V
Forward Transconductance	g_{fs}	$V_{DS} = 10V, I_D = 1.9A^{*1}$	4.3			S
Drain-to-Source Leakage Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1.0	μA
		$V_{DS} = 24V, V_{GS} = 0V, T_J = 125^\circ C$			25	
Gate-to-Source Forward Leakage	I_{GSS}	$V_{GS} = -20V$			-100	nA
Gate-to-Source Reverse Leakage		$V_{GS} = 20V$			100	
Total Gate Charge	Q_g	$I_D = 3.7A$		18	27	nC
Gate-to-Source Charge	Q_{gs}	$V_{DS} = 24V$		2.4	3.6	
Gate-to-Drain ("Miller") Charge	Q_{gd}	$V_{GS} = 10V,^{*1}$		5.6	8.4	
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 15V$		5.7		ns
Rise Time	t_r	$I_D = 3.7A$		28		
Turn-Off Delay Time	$t_{d(off)}$	$R_G = 6.2 \Omega$		18		
Fall Time	t_f	$R_D = 4.0 \Omega$		12		
Input Capacitance	C_{iss}	$V_{GS} = 0V$		520		pF
Output Capacitance	C_{oss}	$V_{DS} = 25V$		200		
Reverse Transfer Capacitance	C_{rss}	$f = 1.0MHz$		80		
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}				30	
Diode Forward Voltage	V_{SD}	$T_J = 25^\circ C, I_S = 3.7A, V_{GS} = 0V^{*1}$			1.2	V
Reverse Recovery Time	t_{rr}	$T_J = 25^\circ C, I_F = 3.7A, V_R = 10V$		53	80	ns
Reverse Recovery Charge	Q_{rr}	$di/dt = 100A/\mu s^{*1}$		87	130	nC

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

*2 Repetitive rating; pulse width limited by max