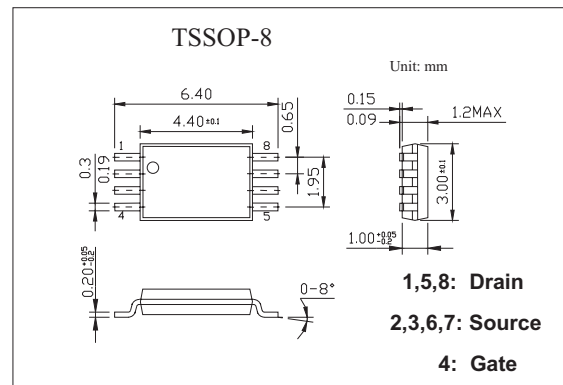


HEXFET[®] Power MOSFET

KRF7706

■ Features

- Ultra Low On-Resistance
- P-Channel MOSFET
- Very Small SOIC Package
- Low Profile (< 1.2mm)
- Available in Tape & Reel



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


Parameter	Symbol	Rating	Unit
Drain- Source Voltage	V_{DS}	-30	V
Continuous Drain Current, $V_{GS} @ -10V @ T_a = 25^\circ\text{C}$	I_D	-7	A
Continuous Drain Current, $V_{GS} @ -10V @ T_a = 70^\circ\text{C}$	I_D	-5.7	
Pulsed Drain Current *1	I_{DM}	-28	
Power Dissipation *2 @ $T_a = 25^\circ\text{C}$	P_D	1.51	W
Power Dissipation *2 @ $T_a = 70^\circ\text{C}$	P_D	0.96	W
Linear Derating Factor		0.01	W/ $^\circ\text{C}$
Gate-to-Source Voltage	V_{GS}	± 20	V
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to + 150	$^\circ\text{C}$
Maximum Junction-to-Ambient *2	$R_{\theta JA}$	83	$^\circ\text{C}/\text{W}$

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

*2 Surface mounted on 1 in square Cu board

KRF7706

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250 \mu A$	-30			V
Breakdown Voltage Temp. Coefficient	$\Delta V_{(BR)DSS} / \Delta T_J$	$I_D = -1mA, \text{Reference to } 25^\circ C$		0.015		V/°C
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -7.0A^{*1}$			22	mΩ
		$V_{GS} = -4.5V, I_D = -5.6A^{*1}$			36	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250 \mu A$	-1.0		-2.5	V
Forward Transconductance	g_{fs}	$V_{DS} = -10V, I_D = -7.0A^{*1}$	6.9			S
Drain-to-Source Leakage Current	I_{DSS}	$V_{DS} = -24V, V_{GS} = 0V$			-15	μA
		$V_{DS} = -24V, V_{GS} = 0V, T_J = 70^\circ C$			-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	$I_D = -7.0A$		48	72	nC
Gate-to-Source Charge	Q_{gs}	$V_{DS} = -15V$		8.5		
Gate-to-Drain ("Miller") Charge	Q_{gd}	$V_{GS} = -10V$		8.4		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -15V, V_{GS} = -10V$		17		ns
Rise Time	t_r	$I_D = -1.0A$		46		
Turn-Off Delay Time	$t_{d(off)}$	$R_G = 6 \Omega$		244		
Fall Time	t_f	$R_D = 15 \Omega$		122		
Input Capacitance	C_{iss}	$V_{GS} = 0V$		2211		pF
Output Capacitance	C_{oss}	$V_{DS} = -25V$		339		
Reverse Transfer Capacitance	C_{rss}	$f = 1.0MHz$		207		
Continuous Source Current (Body Diode)	I_S	MOSFET symbol showing the integral reverse p-n junction diode. 			-1.5	A
Pulsed Source Current (Body Diode) *2	I_{SM}				-28	
Diode Forward Voltage	V_{SD}	$T_J = 25^\circ C, I_S = -1.5A, V_{GS} = 0V^{*1}$			-1.2	V
Reverse Recovery Time	t_{rr}	$T_J = 25^\circ C, I_F = -1.5A$		34	51	ns
Reverse Recovery Charge	Q_{rr}	$di/dt = -100A/\mu s^{*1}$		32	48	μC

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

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