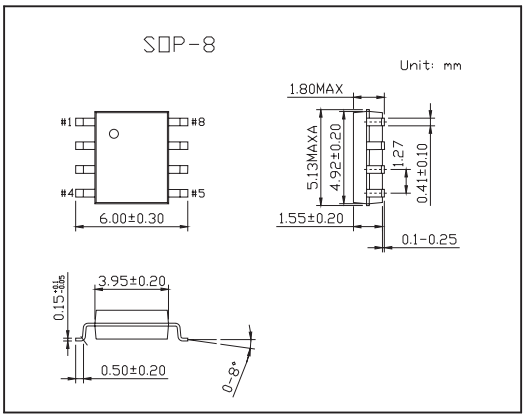
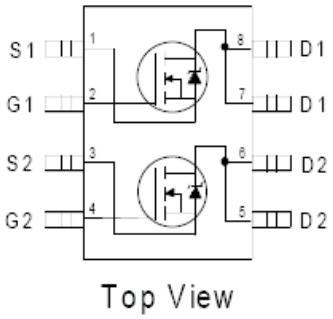
HEXFET®Power MOSFET

KRF7301

■ Features

- Generation V Technology
- Ultra Low On-Resistance
- Dual N-Channel Mosfet
- Surface Mount
- Available in Tape & Reel
- Dynamic dv/dt Rating
- Fast Switching





Top View

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
10 Sec. Pulsed Drain Current, V_{GS} @ 4.5V,Ta = 25℃	I_D	5.7	A
Continuous Drain Current, V_{GS} @ 4.5V,Ta = 25℃	I_D	5.2	
Continuous Drain Current, V_{GS} @ 4.5V,Tc = 70℃	I_D	4.1	
Pulsed Drain Current*1	I_{DM}	21	
Power Dissipation Ta = 25℃	P_D	2	W
Linear Derating Factor		0.016	W/℃
Gate-to-Source Voltage	V_{GS}	±12	V
Peak Diode Recovery dv/dt*2	dv/dt	5	V/ns
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 to + 150	℃
Maximum Junction-to-Ambient *3	R θ JA	62.5	℃/W

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

*2 I_{SD}≤2.6A, di/dt≤100A/μs, V_{DD}≤$V_{(BR)DSS}$,T_J≤150℃

*3 Surface mounted on FR-4 board, t ≤ 10sec.

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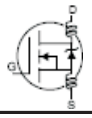
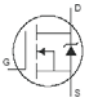
■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250A	20			V
Breakdown Voltage Temp. Coefficient	$\triangle V_{(BR)DSS}/\triangle T_J$	I_D = 1mA,Reference to 25℃		0.044		V/℃
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 4.5V, I_D = 2.6A*1			0.050	Ω
		V_{GS} = 2.7V, I_D = 2.2A*1			0.070	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	0.70			V
Forward Transconductance	g_{fs}	V_{DS} = 15V, I_D = 2.6A*1	8.3			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℃			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 = 2.6A			20	nC
Gate-to-Source Charge	Q_{gs}	V_{DS} = 16V			2.2	
Gate-to-Drain ("Miller") Charge	Q_{gd}	V_{GS} = 4.5V,*1			8.0	
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = 10V		9.0		ns
Rise Time	t_r	I_D = 2.6A		42		
Turn-Off Delay Time	$t_{d(off)}$	R_G = 6.0Ω		32		
Fall Time	t_f	R_D = 3.8Ω *1		51		
Intermal Drain Inductance	L_D	Between lead tip and center of die contact 		4.0		nH
Internal Source Inductance	L_S			6.0		
Input Capacitance	C_{iss}	V_{GS} = 0V		660		pF
Output Capacitance	C_{oss}	V_{DS} = 15V		280		
Reverse Transfer Capacitance	C_{rss}	f = 1.0MHz		140		
Continuous Source Current（Body Diode)	I_S	MOSFET symbol showing the integral reverse p-n junction diode. 			2.5	A
Pulsed Source Current （Body Diode) *2	I_{SM}				21	
Diode Forward Voltage	V_{SD}	T_J = 25℃, I_S = 1.8A, V_{GS} = 0V*1			1.0	V
Reverse Recovery Time	t_{rr}	T_J = 25℃, I_F =2.6A		29	44	ns
Reverse RecoveryCharge	Q_{rr}	di/dt = 100A/μs*1		22	33	μC
Forward Turn-On Time	t_{on}	Intrinsic turn-on time is negligible (turn-on is dominated by L_S+L_D)				

*1 Pulse width ≤ 300μs; duty cycle ≤ 2%.

*2 Repetitive rating; pulse width limited bymax