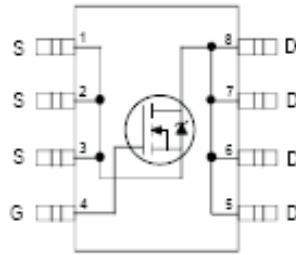


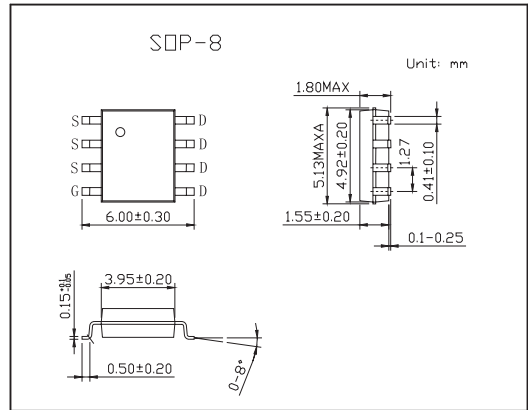
# KRF7401

## ■ Features

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



Top View



## ■ Absolute Maximum Ratings Ta = 25°C



Parameter	Symbol	Rating	Unit
10 Sec. Pulsed Drain Current, V <sub>GS</sub> @ 4.5V, Ta = 25°C	I <sub>D</sub>	10	A
Continuous Drain Current, V <sub>GS</sub> @ 4.5V, Ta = 25°C	I <sub>D</sub>	8.7	
Continuous Drain Current, V <sub>GS</sub> @ 4.5V, Tc = 70°C	I <sub>D</sub>	7	
Pulsed Drain Current*1	I <sub>DM</sub>	35	
Power Dissipation	P <sub>D</sub>	2.5	W
Linear Derating Factor		0.02	W/°C
Gate-to-Source Voltage	V <sub>GS</sub>	±12	V
Peak Diode Recovery dv/dt*2	dv/dt	5	V/ns
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to + 150	°C
Maximum Junction-to-Ambient	R <sub>θ JA</sub>	50	°C/W

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

\*2 I<sub>SD</sub> ≤ 4.1A, di/dt ≤ 100A/μs, V<sub>DD</sub> ≤ V<sub>(BR)DSS</sub>, T<sub>J</sub> ≤ 150°C

# KRF7401

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	V(BR)DSS	VGS = 0V, ID = 250A	20			V
Breakdown Voltage Temp. Coefficient	$\Delta V(BR)DSS/\Delta T_J$	ID = 1mA, Reference to 25°C		0.044		V/°C
Static Drain-to-Source On-Resistance	RDS(on)	VGS = 4.5V, ID = 4.1A*1			0.022	Ω
		VGS = 2.7V, ID = 3.5A*1			0.030	
Gate Threshold Voltage	VGS(th)	VDS = VGS, ID = 250 μ A	0.70			V
Forward Transconductance	gfs	VDS = 15V, ID = 4.1A*1	11			S
Drain-to-Source Leakage Current	IDSS	VDS = 16V, VGS = 0V			1.0	μ A
		VDS = 16V, VGS = 0V, TJ = 125°C			25	
Gate-to-Source Forward Leakage	IGSS	VGS = 12V			100	nA
Gate-to-Source Reverse Leakage		VGS = -12V			-100	
Total Gate Charge	Qg	ID = 4.1A			48	nC
Gate-to-Source Charge	Qgs	VDS = 16V			5.1	
Gate-to-Drain ("Miller") Charge	Qgd	VGS = 4.5V,*1			20	
Turn-On Delay Time	td(on)	VDD = 10V		13		ns
Rise Time	tr	ID = 4.1A		72		
Turn-Off Delay Time	td(off)	RG = 6.0 Ω		65		
Fall Time	tf	RD = 2.4 Ω *1		92		
Internal Drain Inductance	LD	Between lead tip and center of die contact 		2.5		nH
Internal Source Inductance	LS			4.0		
Input Capacitance	Ciss	VGS = 0V		1600		pF
Output Capacitance	Coss	VDS = 15V		690		
Reverse Transfer Capacitance	Crss	f = 1.0MHz		310		
Continuous Source Current (Body Diode)	IS	MOSFET symbol showing the integral reverse p-n junction diode. 			3.1	A
Pulsed Source Current (Body Diode) *2	ISM				35	
Diode Forward Voltage	VSD	TJ = 25°C, IS = 2.0A, VGS = 0V*1			1.0	V
Reverse Recovery Time	trr	TJ = 25°C, IF = 4.1A		39	59	ns
Reverse Recovery Charge	Qrr	di/dt = 100A/μ s*1		42	63	μ C
Forward Turn-On Time	ton	Intrinsic turn-on time is negligible (turn-on is dominated by LS+LD)				

\*1 Pulse width ≤ 300 μ s; duty cycle ≤ 2%.

\*2 Repetitive rating; pulse width limited by max