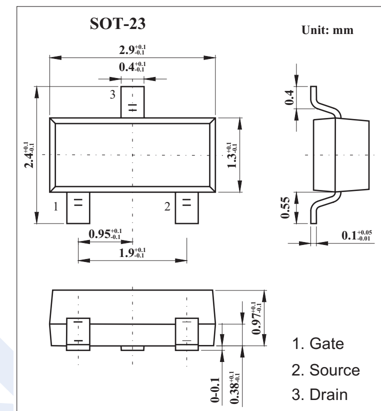
P-Channel Enhancement Mode Field Effect Transistor
KO3419(AO3419)



Features

- V_{DS} (V) = -20V
- I_D = -3.5 A
- $R_{DS(ON)}$ < 75mΩ (V_{GS} = -10V)
- $R_{DS(ON)}$ < 95mΩ (V_{GS} = -4.5V)
- $R_{DS(ON)}$ < 145mΩ (V_{GS} = -2.5V)

Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current *1 T_A=25℃	I_D	-3.5	A
T_A=70℃		-2.8	
Pulsed Drain Current *2	I_{DM}	-15	
Power Dissipation *1 T_A=25℃	P_D	1.4	W
T_A=70℃		0.9	
Thermal Resistance.Junction-to-Ambient	$R_{\theta JA}$	125	℃/W
Thermal Resistance.Junction-to-Case	$R_{\theta JC}$	60	℃/W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	℃

*1The value of $R_{\theta JA}$ is measured with the device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with T_A =25℃

*2 Repetitive rating, pulse width limited by junction temperature.

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250μA, V_{GS}=0V	-20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-16V, V_{GS}=0V			-0.5	μA
		V_{DS}=-16V, V_{GS}=0V ,T_J=55℃			-2.5	
Gate-Body leakage current	I_{GSS}	V_{DS}=0V, V_{GS}=±10V			±1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=-250μA	-0.7	-0.9	-1.4	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-3.5A		59	75	mΩ
		V_{GS}=-10V, I_D=-3.5A T_J=125℃		83	105	
		V_{GS}=-4.5V, I_D=-3A		76	95	
		V_{GS}=-2.5V, I_D=-1A		111	145	
On state drain current	$I_{D(ON)}$	V_{GS}=-4.5V, V_{DS}=-5V	-15			A
Forward Transconductance	g_{FS}	V_{DS}=-5V, I_D=-3.5A		6.8		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-10V, f=1MHz		512	620	pF
Output Capacitance	C_{oss}			77		pF
Reverse Transfer Capacitance	C_{rss}			62		pF
Gate resistance	R_g	V_{GS}=0V, V_{DS}=0V, f=1MHz		9.2	13	Ω
Total Gate Charge	Q_g	V_{GS}=-4.5V, V_{DS}=- =-10V, I_D=-3.5A		5.5	6.6	nC
Gate Source Charge	Q_{gs}			0.8		nC
Gate Drain Charge	Q_{gd}			1.9		nC
Turn-On DelayTime	$t_{D(on)}$	V_{GS}=-10V, V_{DS}=-10V, R_L=2.8Ω ,R_{GEN}=3Ω		5		ns
Turn-On Rise Time	t_r			6.7		ns
Turn-0ff DelayTime	$t_{D(off)}$			28		ns
Turn-Off Fall Time	t_f			13.5		ns
Body Diode Reverse Recovery Time	t_{rr}	I_F=-3.5A, dI/dt=100A/□s		9.8	12	ns
Body Diode Reverse Recovery Charge	Q_{rr}	I_F=-3.5A, dI/dt=100A/□s		2.7		nC
Maximum Body-Diode Continuous Current	I_S				-2	A
Diode Forward Voltage	V_{SD}	I_S=-1A,V_{GS}=0V	-0.65	-0.81	-0.95	V