

P-Channel Enhancement Mode Field Effect Transistor KO3413

Features

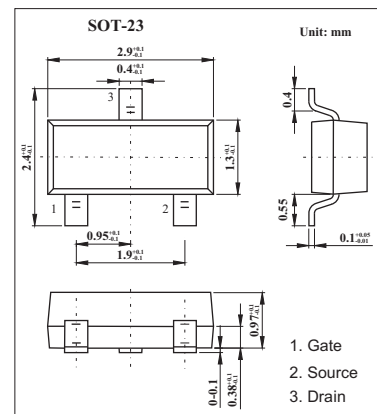
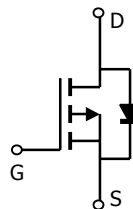
$V_{DS}(V) = -20V$

$I_D = -3 A$

$R_{DS(ON)} = 97m\Omega$ ($V_{GS} = -4.5V$)

$R_{DS(ON)} = 130m\Omega$ ($V_{GS} = -2.5V$)

$R_{DS(ON)} = 190m\Omega$ ($V_{GS} = -1.8V$)



Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 8	V
Continuous Drain Current *1	I_D	$T_A=25^\circ C$	-3
		$T_A=70^\circ C$	-2.4
Pulsed Drain Current *2	I_{DM}	-15	A
Power Dissipation *1	P_D	$T_A=25^\circ C$	1.4
		$T_A=70^\circ C$	0.9
Thermal Resistance.Junction-to-Ambient *1	$R_{\theta JA}$	125	$^\circ C/W$
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ C$

*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 $T_A = 25^\circ C$

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

KO3413

Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =-250 μ A, V _{GS} =0V	-20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-16V, V _{GS} =0V			-1	μ A
		V _{DS} =-16V, V _{GS} =0V, T _J =55°C			-5	
Gate-Body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±8V			±100	μ A
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =-250 μ A	-0.3	-0.55	-1	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-3A		81	97	m Ω
		V _{GS} =-4.5V, I _D =-3A T _J =125°C		111	135	
		V _{GS} =-2.5V, I _D =-2.6A		108	130	
		V _{GS} =-1.8V, I _D =-1A		146	190	
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 =-3A	4	7		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-10V, f=1MHz		540		pF
Output Capacitance	C _{oss}		72		pF	
Reverse Transfer Capacitance	C _{rss}		49		pF	
Gate resistance	R _g		V _{GS} =0V, V _{DS} =0V, f=1MHz		12	
Total Gate Charge	Q _g	V _{GS} =-4.5V, V _{DS} =-10V, I _D =-3A		6.1		nC
Gate Source Charge	Q _{gs}		0.6		nC	
Gate Drain Charge	Q _{gd}		1.6		nC	
Turn-On DelayTime	t _{D(on)}			10		ns
Turn-On Rise Time	t _r	V _{GS} =-4.5V, V _{DS} =-10V, R _L 3.3 Ω, R _{GEN} =3 Ω		12		ns
Turn-Off DelayTime	t _{D(off)}		44		ns	
Turn-Off Fall Time	t _f		22		ns	
Body Diode Reverse Recovery Time	t _{rr}		I _F =-3A, di/dt=100A/μs		21	
Body Diode Reverse Recovery Charge	Q _{rr}	I _F =-3A, di/dt=100A/μs		7.5		nC
Maximum Body-Diode Continuous Current	I _S				-2	A
Diode Forward Voltage	V _{SD}	I _S =-1A, V _{GS} =0V		-0.78	-1	V