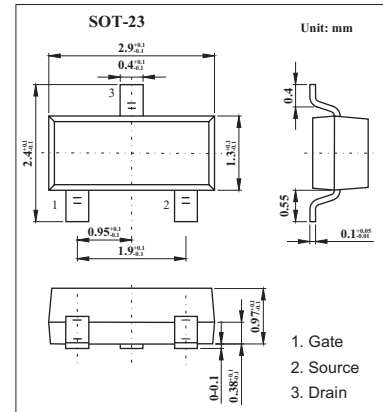
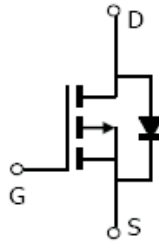


N-Channel Enhancement Mode Field Effect Transistor KO3404

■ Features

- $V_{DS} (V) = 30V$
- $I_D = 5.8 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 28 m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 43 m\Omega (V_{GS} = 4.5V)$



■ Absolute Maximum Ratings $T_A = 25^\circ C$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current *1 $T_A = 25^\circ C$	I_D	5.8	A
Current *1 $T_A = 70^\circ C$		4.9	
Pulsed Drain Current *2	I_{DM}	20	
Power Dissipation *1 $T_A = 25^\circ C$	P_D	1.4	W
$T_A = 70^\circ C$		1	
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ C$

*1 The value of $R_{\theta JA}$ is measured with the device mounted on $1 in^2$ 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.

■ Thermal Characteristics

Parameter		Symbol	Typ	Max	Unit
Maximum Junction-to-Ambient*1	$t \leq 10s$	$R_{\theta JA}$	65	90	$^\circ C/W$
Maximum Junction-to-Ambient *1	Steady-State		85	125	$^\circ C/W$
Maximum Junction-to-Lead *2	Steady-State	$R_{\theta JL}$	43	60	$^\circ C/W$

*1 The value of $R_{\theta JA}$ is measured with the device mounted on $1 in^2$ FR-4 board with 2oz.

Copper, in a still air environment with $T_A = 25^\circ C$

*2 . The $R_{\theta JA}$ is the sum of the thermal impedance from junction to lead $R_{\theta JL}$ and lead to ambient.

KO3404

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV _{DSS}	I _D =250 μ A, V _{GS} =0V	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =24V, V _{GS} =0V			1	μ A
		V _{DS} =24V, V _{GS} =0V, T _J =55°C			5	
Gate-Body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =250 μ A	1	1.9	3	V
On state drain current	I _{D(ON)}	V _{GS} =4.5V, V _{DS} =5V	20			A
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =5.8A		22.5	28	mΩ
		V _{GS} =10V, I _D =5.8A T _J =125°C		31.3	38	
		V _{GS} =4.5V, I _D =5.0A		34.5	43	mΩ
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =5.8A	10	14.5		S
Diode Forward Voltage	V _{SD}	I _S =1A		0.76	1	V
Maximum Body-Diode Continuous Current	I _S				2.5	A
Reverse Transfer Capacitance	C _{iss}			680	820	pF
Gate resistance	C _{oss}	V _{GS} =0V, V _{DS} =15V, f=1MHz		102		pF
Input Capacitance	C _{rss}			77		pF
Output Capacitance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz		3	3.6	Ω
Total Gate Charge (10V)	Q _g	V _{GS} =10V, V _{DS} =15V, I _D =5.8A		13.88	17	nC
Total Gate Charge (4.5V)	Q _g			6.78	8.1	nC
Gate Source Charge	Q _{gs}			1.8		nC
Gate Drain Charge	Q _{gd}			3.12		nC
Turn-On Rise Time	t _{D(on)}				4.6	6.5
Turn-Off DelayTime	t _r	V _{GS} =10V, V _{DS} =15V, R _L =2.7 Ω, R _{GEN} =3 Ω		3.8	5.7	ns
Turn-Off Fall Time	t _{D(off)}			20.9	30	ns
Turn-On DelayTime	t _f			5	7.5	ns
Body Diode Reverse Recovery Time	t _{rr}	I _F =5.8A, di/dt=100A/μ s		16.1	21	ns
Body Diode Reverse Recovery Charge	Q _{rr}	I _F =5.8A, di/dt=100A/μ s		7.4	10	nC

■ Marking

Marking	A4
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