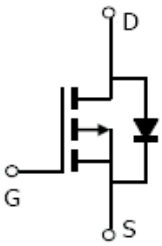
TY Semicondutor®

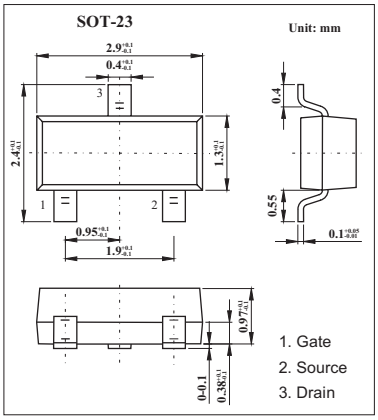
Product specification

KO3404

■ Features

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





■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain TA=25℃	I_D	5.8	A
Current *1 TA=70℃		4.9	
Pulsed Drain Current *2	I_{DM}	20	
Power Dissipation *1 TA=25℃	P_D	1.4	W
TA=70℃		1	
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.

■ Thermal Characteristics

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

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

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	B_{VDSS}	I_D=250μA, V_{GS}=0V	30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=24V, V_{GS}=0V			1	μA
		V_{DS}=24V, V_{GS}=0V ,TJ=55℃			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=250μA	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℃		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}	V_{GS}=0V, V_{DS}=15V, f=1MHz		680	820	pF
Gate resistance	C_{oss}			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	$t_{D(on)}$	V_{GS}=10V, V_{DS}=15V, R_L=2.7Ω ,R_{GEN}=3Ω		4.6	6.5	ns
Turn-Off DelayTime	t_r			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/μs		16.1	21	ns
Body Diode Reverse Recovery Charge	Q_{rr}	I_F=5.8A, dI/dt=100A/μs		7.4	10	nC

■ Marking

Marking	A4