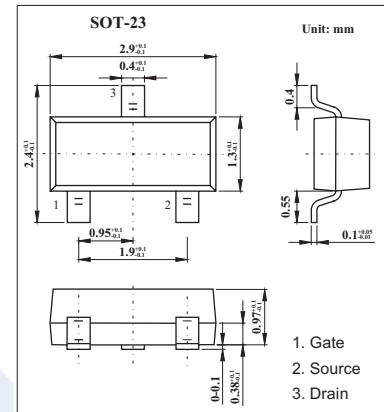
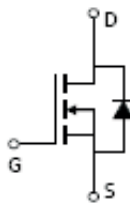


## N-Channel Enhancement Mode Field Effect Transistor KO3402(AO3402)

### ■ Features

- $V_{BS} (V) = 30V$
- $I_D = 4 A$
- $R_{DS(ON)} < 55m\Omega$  ( $V_{GS} = 10V$ )
- $R_{DS(ON)} < 70m\Omega$  ( $V_{GS} = 4.5V$ )
- $R_{DS(ON)} < 110m\Omega$  ( $V_{GS} = 2.5V$ )



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{BS}$	30	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Continuous Drain Current	$I_D$	$T_A=25^\circ C$	4
		$T_A=70^\circ C$	3.4
Pulsed Drain Current	$I_{DM}$	15	A
Power Dissipation	$P_D$	$T_A=25^\circ C$	1.4
		$T_A=70^\circ C$	1
Thermal Resistance.Junction-to-Ambient	$R_{\theta JA}$	125	$^\circ C/W$
Thermal Resistance.Junction-to-Case	$R_{\theta JC}$	80	$^\circ C/W$
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to 150	$^\circ C$

## K03402(AO3402)

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	I <sub>D</sub> =250 μ A, V <sub>GS</sub> =0V	30			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =24V, V <sub>GS</sub> =0V			1	μ A
		V <sub>DS</sub> =24V, V <sub>GS</sub> =0V, T <sub>J</sub> =55°C			5	
Gate-Body leakage current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±12V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> I <sub>D</sub> =250 μ A	0.6	1	1.4	V
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =4A		45	55	mΩ
		V <sub>GS</sub> =10V, I <sub>D</sub> =4A T <sub>J</sub> =125°C		66	80	
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =3A		55	70	mΩ
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =2A		83	110	mΩ
On state drain current	I <sub>D(ON)</sub>	V <sub>GS</sub> =4.5V, V <sub>DS</sub> =5V	10			A
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =4A		8		S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =15V, f=1MHz		390		pF
Output Capacitance	C <sub>oss</sub>			54.5		pF
Reverse Transfer Capacitance	C <sub>rss</sub>			41		pF
Gate resistance	R <sub>g</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz		3		Ω
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =4.5V, V <sub>DS</sub> =15V, I <sub>D</sub> =-4A		4.34		nC
Gate Source Charge	Q <sub>gs</sub>			0.6		nC
Gate Drain Charge	Q <sub>gd</sub>			1.38		nC
Turn-On DelayTime	t <sub>D(on)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, R <sub>L</sub> =3.75 Ω, R <sub>GEN</sub> =6 Ω		3.3		ns
Turn-On Rise Time	t <sub>r</sub>			1		ns
Turn-Off DelayTime	t <sub>D(off)</sub>			21.7		ns
Turn-Off Fall Time	t <sub>f</sub>			2.1		ns
Body Diode Reverse Recovery Time	t <sub>rr</sub>		I <sub>F</sub> =4A, di/dt=100A/μ s		12	
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>	I <sub>F</sub> =4A, di/dt=100A/μ s		6.3		nC
Maximum Body-Diode Continuous Current	I <sub>S</sub>				2.5	A
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =1A, V <sub>GS</sub> =0V		0.8	1	V