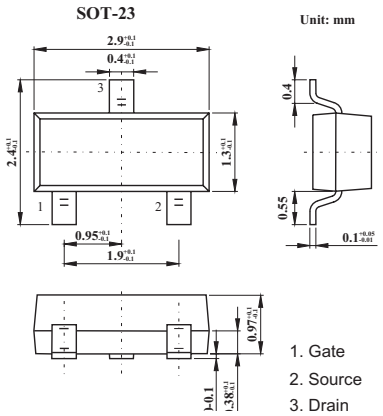
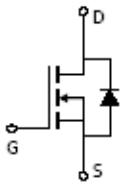
AO3400

N-Channel Enhancement Mode Field Effect Transistor

■ Features

- $V_{DS\ (V)}$ = 30V
- I_D = 5.8 A (V_{GS} = 10V)
- $R_{DS(ON)}$ < 28mΩ (V_{GS} = 10V)
- $R_{DS(ON)}$ < 33mΩ (V_{GS} = 4.5V)
- $R_{DS(ON)}$ < 52mΩ (V_{GS} = 2.5V)





■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±12	V
Continuous Drain Current	T_A=25℃	I_D	5.8	A
	T_A=70℃		4.9	
Pulsed Drain Current *		I_{DM}	30	
Power Dissipation	T_A=25℃	P_D	1.4	W
	T_A=70℃		1	
Thermal Resistance.Junction- to-Ambient		R_{thJA}	85	℃/W
Thermal Resistance.Junction- to-Case		R_{thc}	43	℃/W
Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	℃

* Repetitive rating, pulse width limited by junction temperature.

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	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 ,T_J=55℃			5	
Gate-Body leakage current	I_{GSS}	V_{DS}=0V, V_{GS}=±12V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	0.7	1.1	1.4	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=5.8A		22.8	28	mΩ
		V_{GS}=10V, I_D=5.8A T_J=125℃		32	39	
		V_{GS}=4.5V, I_D=5A		27.3	33	mΩ
		V_{GS}=2.5V, I_D=4A		43.3	52	mΩ
On state drain current	$I_{D(ON)}$	V_{GS}=4.5V, V_{DS}=5V	30			A
Forward Transconductance	g_{FS}	V_{DS}=5V, I_D=5A	10	15		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=15V, f=1MHz		823	1050	pF
Output Capacitance	C_{oss}			99		pF
Reverse Transfer Capacitance	C_{rss}			77		pF
Gate resistance	R_g	V_{GS}=0V, V_{DS}=0V, f=1MHz		1.4	2	Ω
Total Gate Charge	Q_g	V_{GS}=4.5V, V_{DS}=15V, I_D=5.8A		9.7	12	nC
Gate Source Charge	Q_{gs}			1.6		nC
Gate Drain Charge	Q_{gd}			3.1		nC
Turn-On DelayTime	$t_{D(on)}$	V_{GS}=10V, V_{DS}=15V, R_L=2.7Ω ,R_{GEN}=3Ω		3.3	5	ns
Turn-On Rise Time	t_r			4.8	7	ns
Turn-Off DelayTime	$t_{D(off)}$			26.3	40	ns
Turn-Off Fall Time	t_f			4.1	6	ns
Body Diode Reverse Recovery Time	t_{rr}	I_F=5A, dI/dt=100A/μs		16	20	ns
Body Diode Reverse Recovery Charge	Q_{rr}	I_F=5A, dI/dt=100A/μs		8.9	12	nC
Maximum Body-Diode Continuous Current	I_S				2.5	A
Pulsed Body-Diode Current *	I_{SM}				30	A
Diode Forward Voltage	V_{SD}	I_S=1A,V_{GS}=0V		0.71	1	V

* Repetitive rating, pulse width limited by junction temperature.