AO3401(4.2A) P-Channel MOSFET
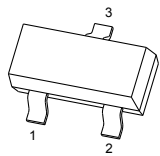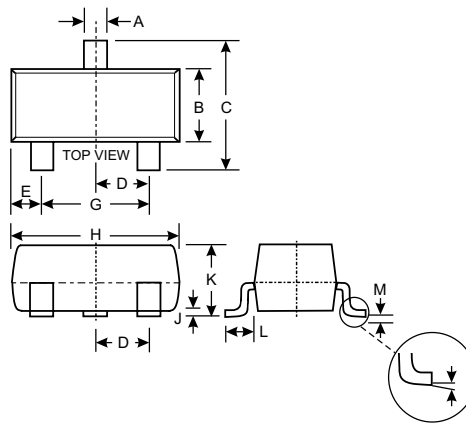
AO3401 P-Channel Enhancement Mode Field Effect Transistor

$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
-30 V	65mΩ@-10V	-4.2A
	75mΩ@-4.5V	
	90mΩ@-2.5V	

1. GATE
2. SOURCE
3. DRAIN

TOP VIEW

SOT-23		
Dim	**Min**	**Max**
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.85	0.80
α	0°	8°
All Dimensions in mm		

Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	-4.2	A
Power Dissipation	P_D	350	mW
Thermal Resistance from Junction to Ambient (t<5s)	$R_{θJA}$	357	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~+150	℃

MOSFET ELECTRICAL CHARACTERISTICS

T_a=25 ℃   unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250µA	-30			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-24V, V_{GS} = 0V			-1	µA
Gate-source leakage current	I_{GSS}	V_{GS} =±12V, V_{DS} = 0V			±100	nA
On characteristics						
Drain-source on-resistance (note 1)	$R_{DS(on)}$	V_{GS} =-10V, I_D =-4.2A			65	mΩ
		V_{GS} =-4.5V, I_D =-4A			75	mΩ
		V_{GS} =-2.5V, I_D=-1A			90	mΩ
Forward tranconductance (note 1)	g_{FS}	V_{DS} =-5V, I_D =-5A	7			S
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250µA	-0.7		-1.3	V
Dynamic characteristics (note 2)						
Input capacitance	C_{iss}			954		pF
Output capacitance	C_{oss}	V_{DS} =-15V, V_{GS} =0V, f =1MHz		115		pF
Reverse transfer capacitance	C_{rss}			77		pF
Switching characteristics (note 2)						
Turn-on delay time	$t_{d(on)}$				6.3	ns
Turn-on rise time	t_r	V_{GS}=-10V, V_{DS}=-15V,			3.2	ns
Turn-off delay time	$t_{d(off)}$	R_L=3.6Ω, R_{GEN}=6Ω			38.2	ns
Turn-off fall Time	t_f				12	ns
Drain-source diode characteristics and maximum ratings						
Diode forward voltage (note 1)	V_{SD}	I_S=-1A, V_{GS}=0V			-1	V

Note :
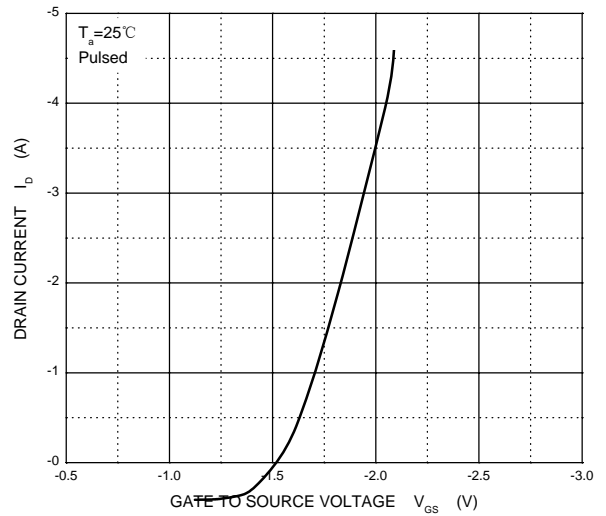
1. Pulse Test : Pulse width≤300µs, duty cycle≤2%.

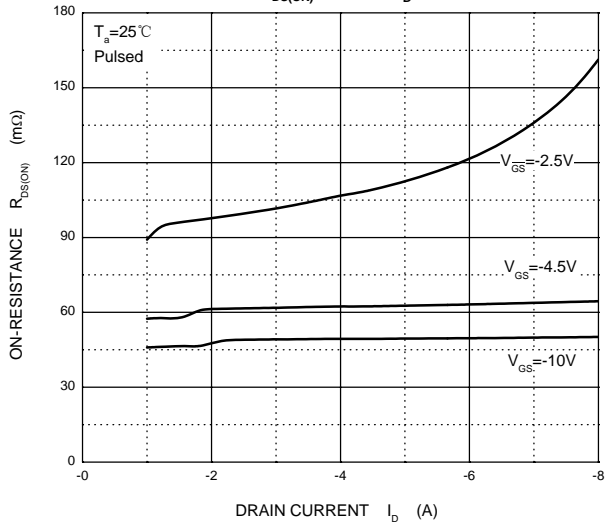2. These parameters have no way to verify.
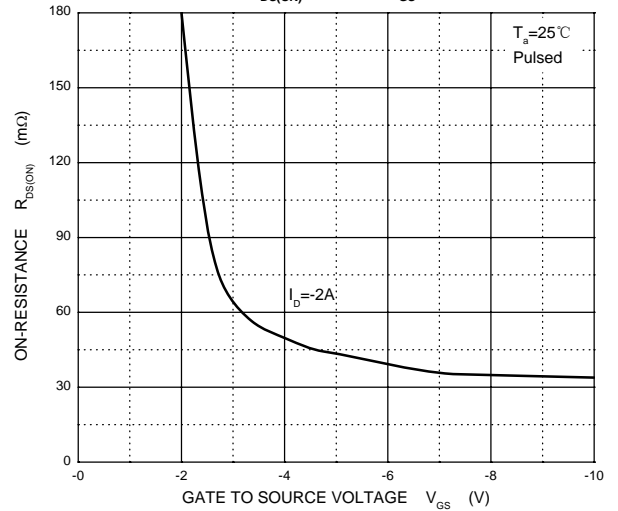
Typical Characteristics

Output Characteristics

T_a=25℃
Pulsed

V_{GS}=-10V

V_{GS}=-4.5V

V_{GS}=-3.0V

V_{GS}=-2.5V

V_{GS}=-2.0V

DRAIN CURRENT I_D (A)

DDAIN TO SOURCE VOLTAGE V_{DS} (V)

Transfer Characteristics

T_a=25℃
Pulsed

DRAIN CURRENT I_D (A)

GATE TO SOURCE VOLTAGE V_{GS} (V)

$R_{DS(ON)}$ —— I_D

T_a=25℃
Pulsed

V_{GS}=-2.5V

V_{GS}=-4.5V

V_{GS}=-10V

ON-RESISTANCE $R_{DS(ON)}$ (mΩ)

DRAIN CURRENT I_D (A)

$R_{DS(ON)}$ —— V_{GS}

T_a=25℃
Pulsed

I_D=-2A

ON-RESISTANCE $R_{DS(ON)}$ (mΩ)

GATE TO SOURCE VOLTAGE V_{GS} (V)

I_S —— V_{SD}

T_a=25℃
Pulsed

SOURCE CURRENT I_S (A)

SOURCE TO DRAIN VOLTAGE V_{SD} (V)