MSV

AO3402A

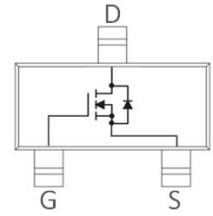
N-Channel MOSFET

Features & Applications

Trench Power LV MOSFET technology.

High dense cell design for extremely low RDS(ON).

Suitable for use as a load switch or in PWM applications.



Marking: A29T

Absolute Maximum Ratings(Ta=25℃)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	±12	V
I_D	Continuous Drain Current	4	A
I_{DM}	Drain Current-Pulsed	15	A
P_D	Power Dissipation	0.35	W
$R_{\Theta JA}$	Thermal Resistance From Junction To Ambient	350	℃/W
T_J, T_{stg}	Operation Junction And Storage Temperature Range	-55～+150	℃

Electrical Characteristics (Ta=25℃ unless otherwise specified)

Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-source breakdown voltage	V_{GS}=0, I_D=250μA	30			V
$V_{GS(th)}$	Gate-threshold voltage	V_{DS}= V_{GS}, I_D=250μA	0.6	0.9	1.4	V
I_{GSS}	Collector cut-off current	V_{DS}=0, V_{GS}=±12V			100	nA
I_{DSS}	Collector cut-off current	V_{DS}=30V, V_{GS}=0V			1	μA
$R_{DS(on)}$	Drain-source on-resistance[a]	V_{GS}=10V, I_D=4A		32	55	mΩ
		V_{GS}=4.5V, I_D=3A		35	70	mΩ
		V_{GS}=2.5V, I_D=2A		50	110	mΩ
g_{FS}	Forward tranconductance[a]	V_{DS}=4.5V, I_D=4A	5			S
V_{SD}	Diode forward voltage	I_S=1A		0.73	0.9	V
Dynamic						
C_{iss}	Input capacitance[b]	V_{DS}=15V, V_{GS}=0V, f=1MHz		390		pF
C_{oss}	Output capacitance[b]			55		
C_{rss}	Reverse transfer capacitance[b]			45		
Switching[b]						
$t_{d(on)}$	Turn-on delay time	V_{GS}=10V，V_{DS}=15V, R_L=3.75Ω，R_{GEN}=6Ω		3.3		nS
t_r	Rise time			1		
$t_{d(off)}$	Turn-off delay time			22		
t_f	Fall time			2.3		

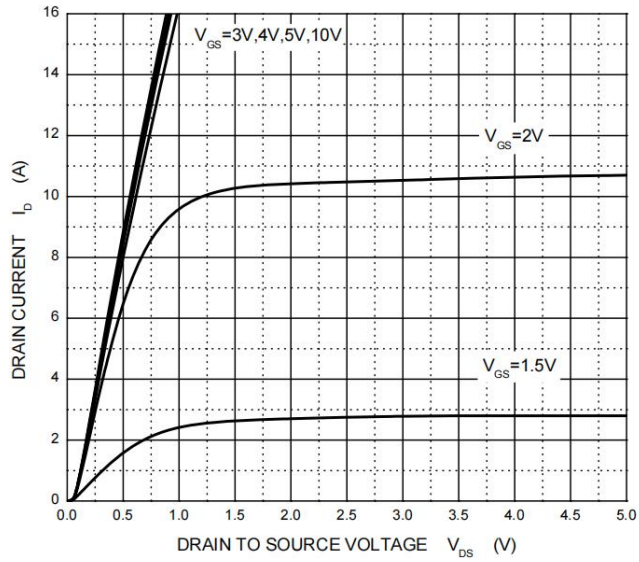
Notes :

a. Pulse Test : Pulse width≤300μs, duty cycle ≤0.5%.

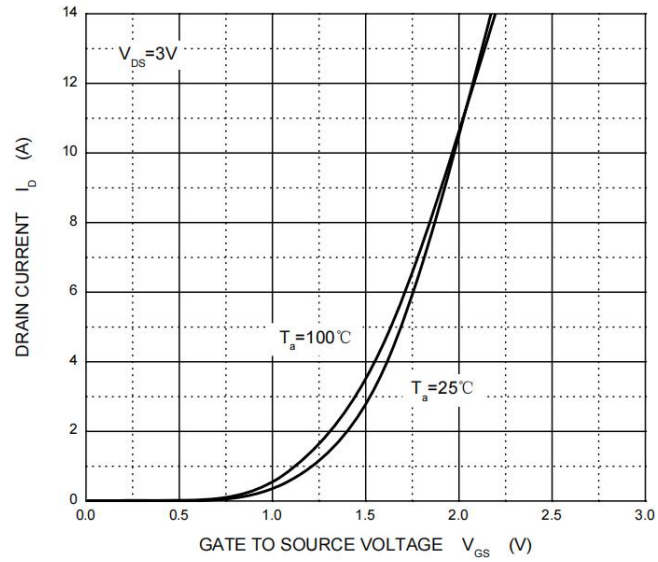
b. These parameters have no way to verify.

Typical Characteristics

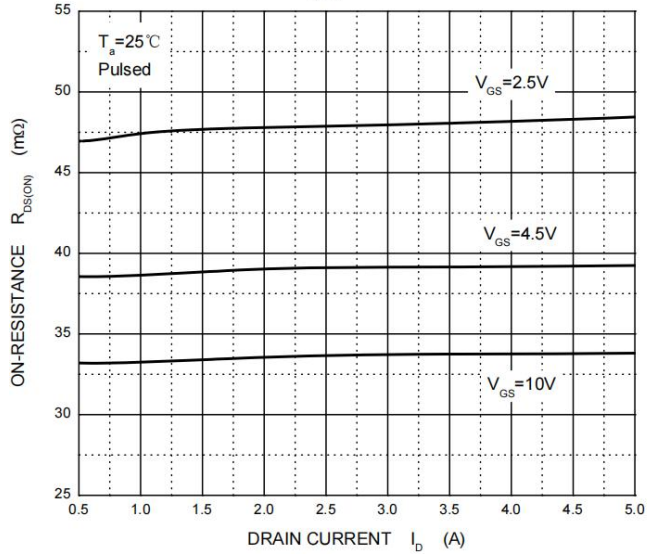
Output Characteristics



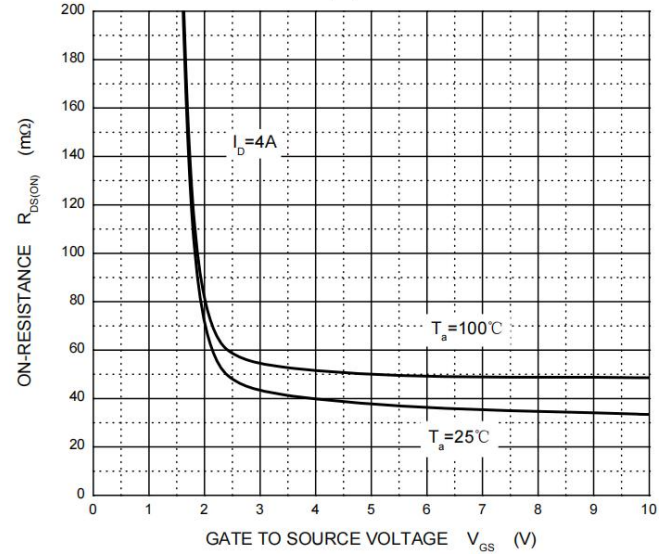
Transfer Characteristics



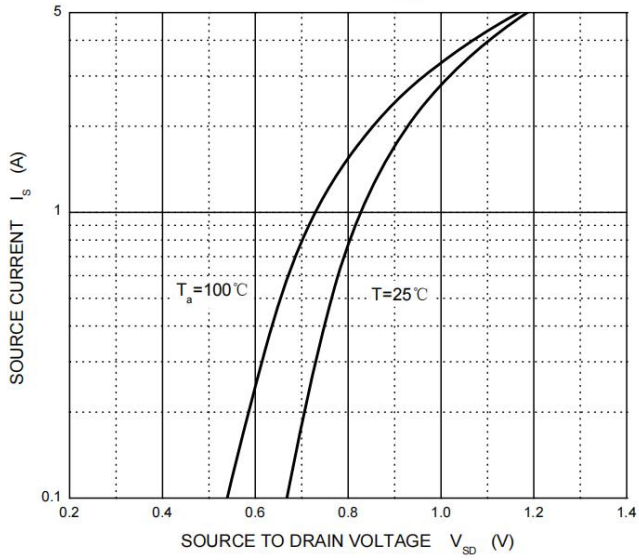
$R_{DS(ON)}$ — I_D



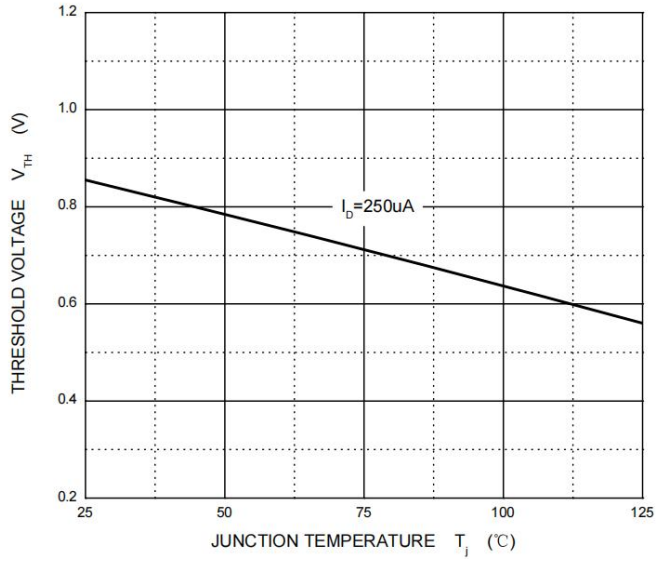
$R_{DS(ON)}$ — V_{GS}



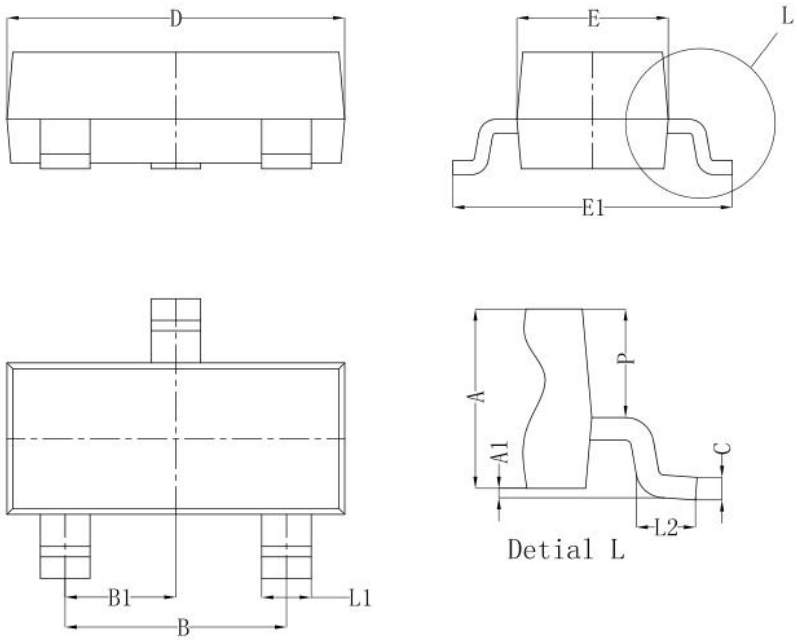
I_S — V_{SD}



Threshold Voltage



SOT-23 Package Outline Dimensions



Symbol	Dim in mm		
	Min	Nom	Max
A	0.900	1.000	1.100
A1	0.000	0.050	0.100
B	1.800	1.900	2.000
B1	0.950 TYP		
C	0.100	0.110	0.120
D	2.800	2.900	3.000
E	1.250	1.300	1.350
E1	2.250	2.400	2.550
L1	0.350	0.400	0.500
L2	0.200	0.350	0.450
P	0.550	0.575	0.600