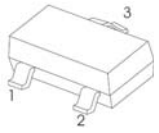
SOT -23 Plastic-Encapsulate MOSFETS

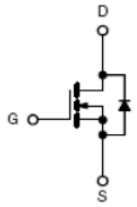
$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
20 V	55 mΩ@ 4.5V	3A
	85 mΩ@ 2.5V	

SOT-23



1. GATE
2. SOURCE
3. DRAIN

Equivalent Circuit



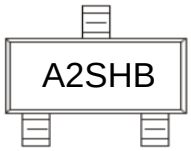
FEATURE

- TrenchFET Power MOSFET

APPLICATION

- Load Switch for Portable Devices
- DC/DC Converter

MARKING



Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	
Continuous Drain Current	I_D	3	A
Pulsed Drain Current	I_{DM}	10	
Continuous Source-Drain Current(Diode Conduction)	I_S	1	
Maximum Power Dissipation	P_D	1.25	W
Thermal Resistance from Junction to Ambient(t ≤5s)	$R_{\theta JA}$	100	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{stg}	-55~+150	

MOSFET ELECTRICAL CHARACTERISTICS

T_a=25℃ unless otherwise specified

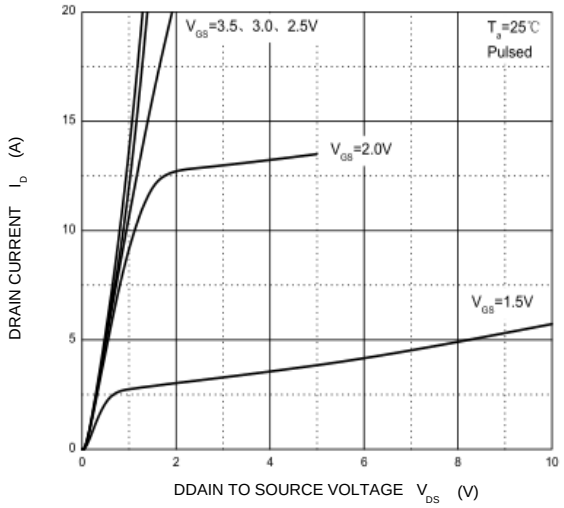
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	20	21.5		V
Gate-source threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.4	0.7	1	
Gate-source leakage	I_{GSS}	V_{DS} =0V, V_{GS} =±12V			±100	nA
Zero gate voltage drain current	I_{DSS}	V_{DS} =20V, V_{GS} =0V			1	μA
Drain-source on-state resistance [a]	$R_{DS(on)}$	V_{GS} =4.5V, I_D =3.0A		45	55	mΩ
		V_{GS} =2.5V, I_D =2.0A		63	85	
Forward transconductance [a]	g_{fs}	V_{DS} =5V, I_D =3.6A		8		S
Dynamic [b]						
Input capacitance	C_{iss}	V_{DS} =10V,V_{GS} =0V,f =1MHz		300		pF
Output capacitance	C_{oss}			120		
Reverse transfer capacitance	C_{rss}			80		
Switching characteristics(note4)						
Turn-on delay time	$t_{d(on)}$	V_{GS}=10V, V_{GEN}=4.5V R_L=5.5Ω, R_g=6Ω			15	ns
Rise time	t_r				80	
Turn-off delay time	$t_{d(off)}$				60	
Fall time	t_f				25	
Drain-source body diode characteristics						
Body diode voltage (note3)	V_{SD}	I_S=1A		0.8	1.0	V

Notes :

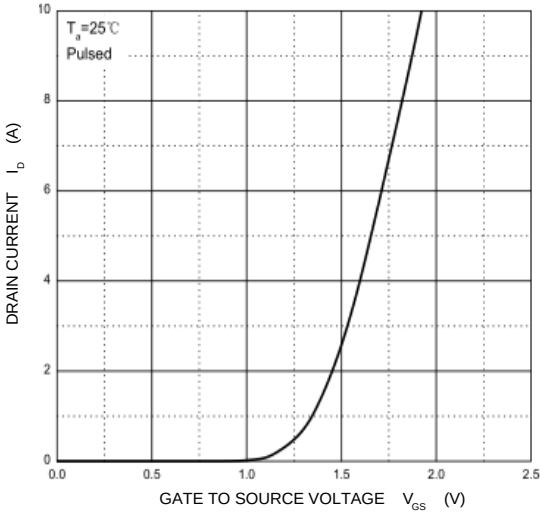
a. Pulse Test : Pulse width<300us, duty cycle <2%.

b. These parameters have no way to verify.

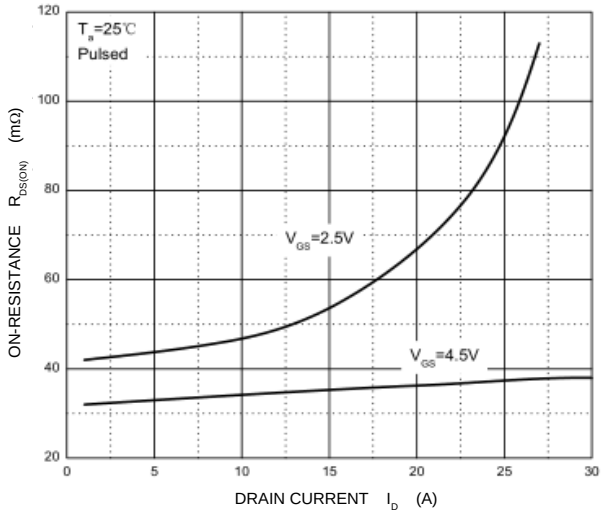
Output Characteristics



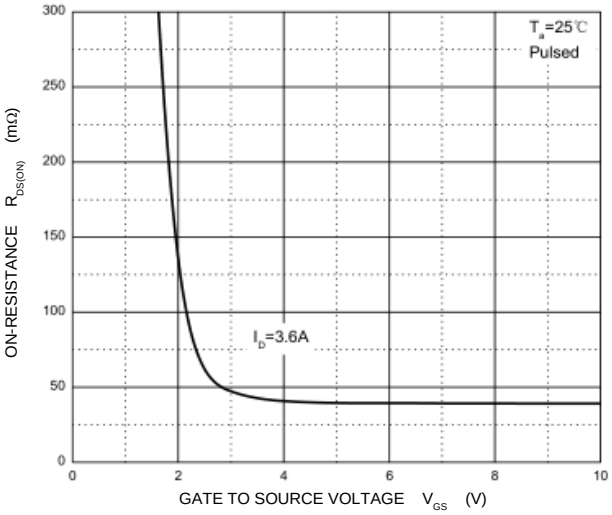
Transfer Characteristics



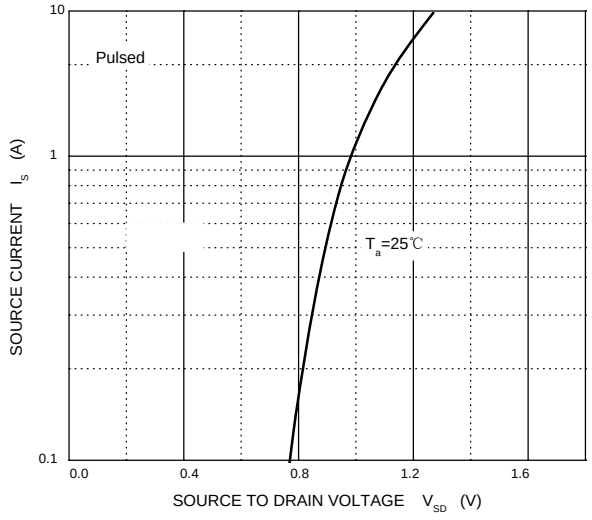
$R_{DS(ON)}$ —— I_D



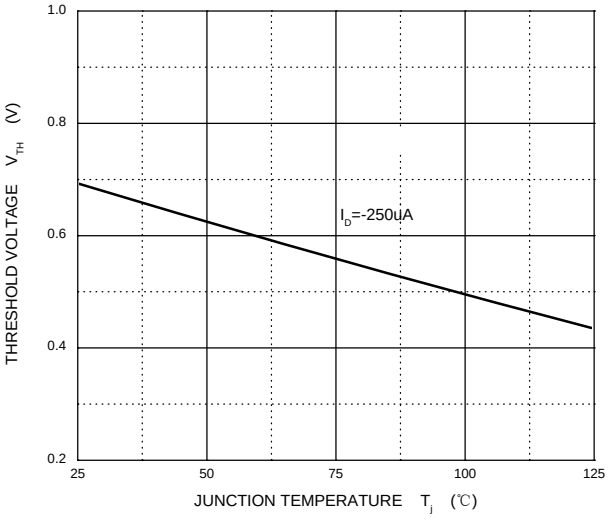
$R_{DS(ON)}$ —— V_{GS}

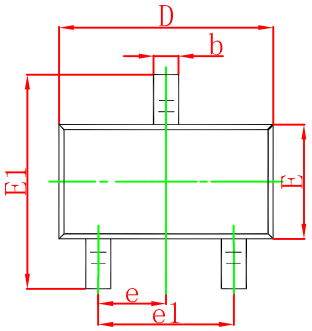


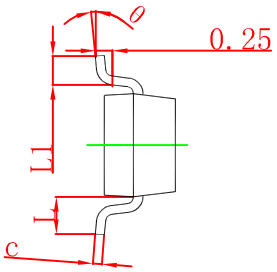
I_S —— V_{SD}

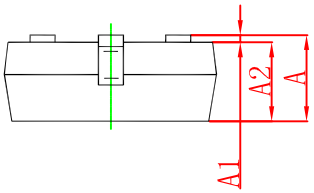


Threshold Voltage



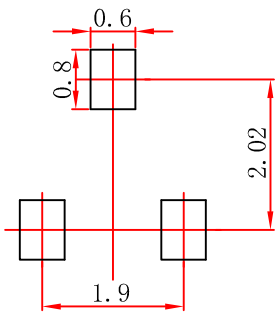






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.