

SOT -23 Plastic-Encapsulate MOSFETS

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

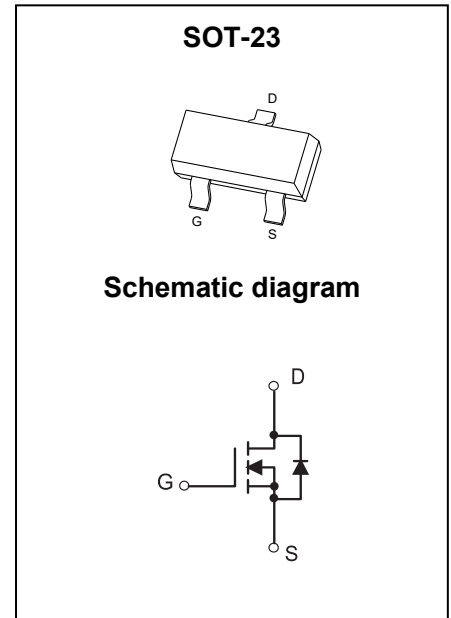
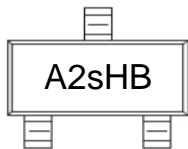
FEATURE

- TrenchFET Power MOSFET

APPLICATION

- Load Switch for Portable Devices
- DC/DC Converter

MARKING



Maximum ratings ($T_a=25^{\circ}\text{C}$ 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($t \leq 5s$)	$R_{\theta JA}$	100	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55~+150	

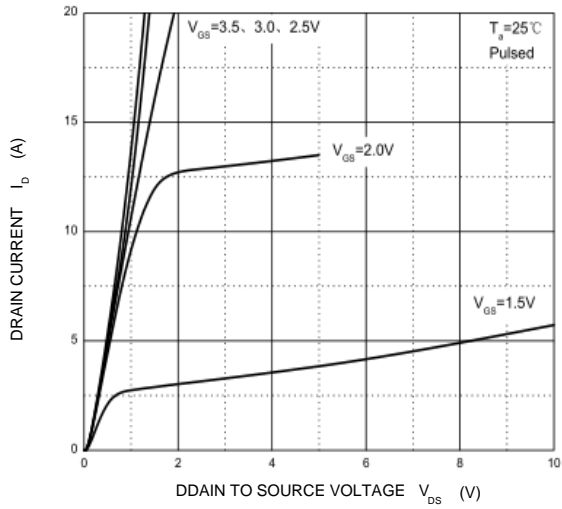
MOSFET ELECTRICAL CHARACTERISTICS
T_a=25 °C unless otherwise specified

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

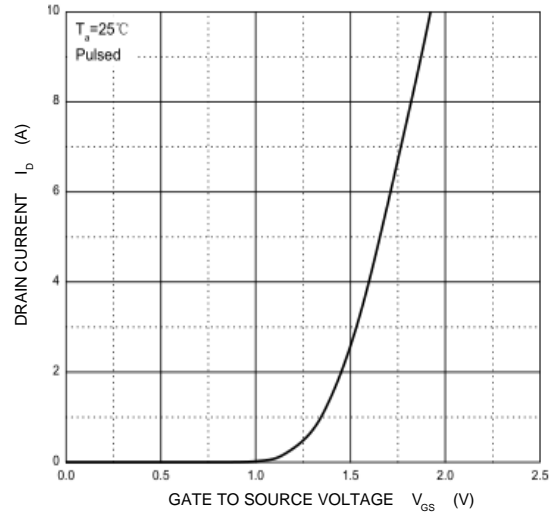
Notes :

- a. Pulse Test : Pulse width < 300us, duty cycle < 2%.
- b. These parameters have no way to verify.

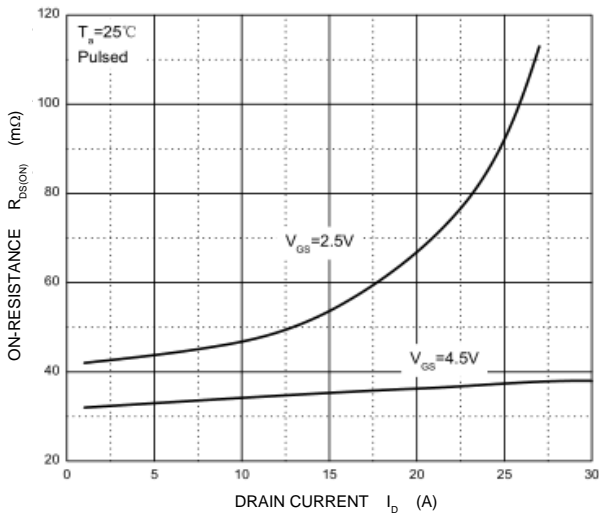
Output Characteristics



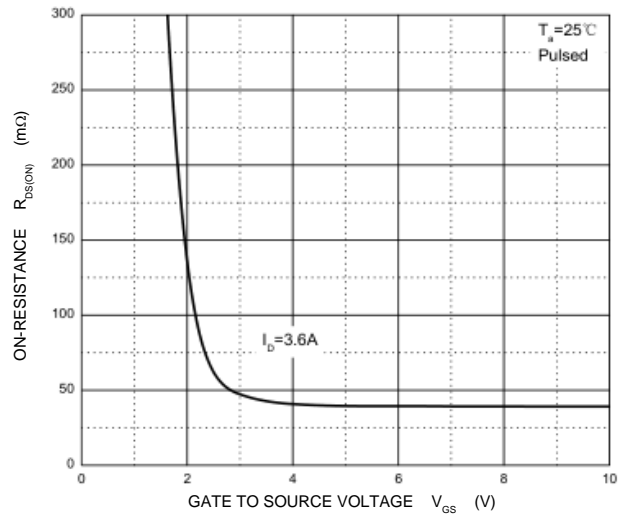
Transfer Characteristics



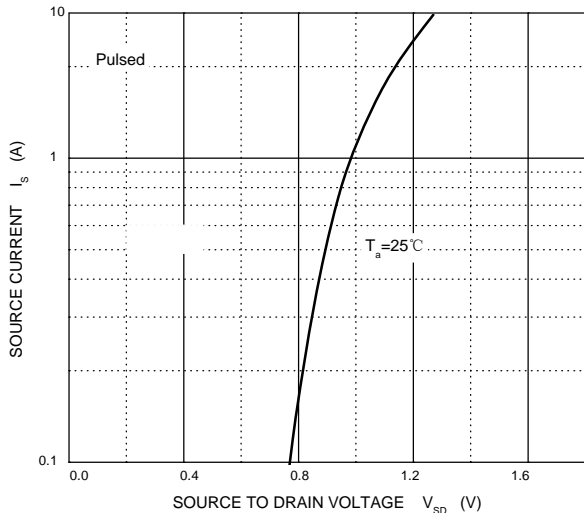
$R_{DS(ON)}$ — I_D



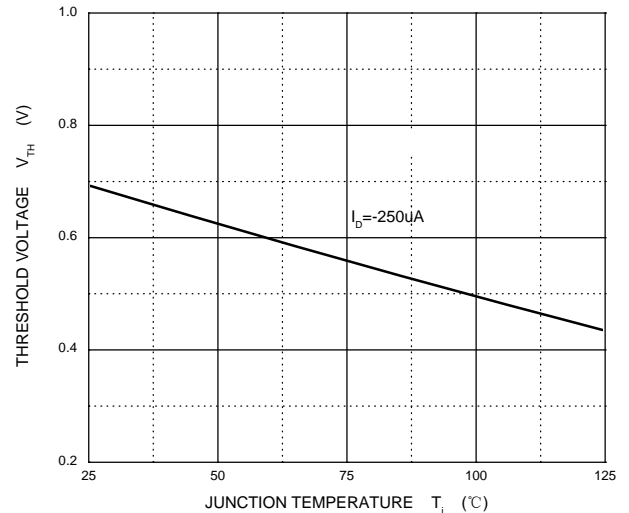
$R_{DS(ON)}$ — V_{GS}

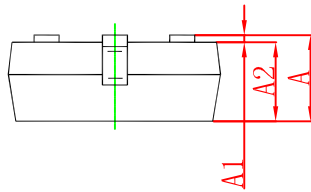
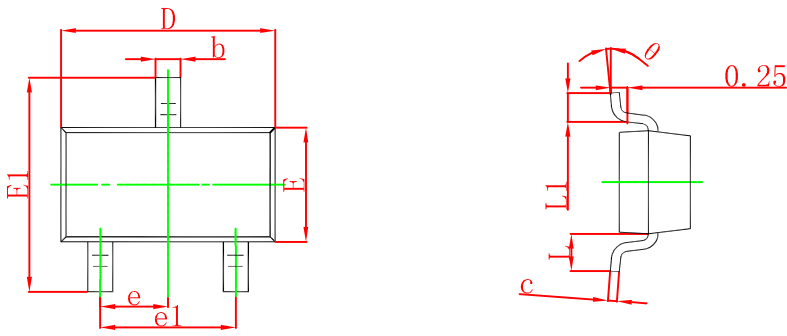


I_S — V_{SD}



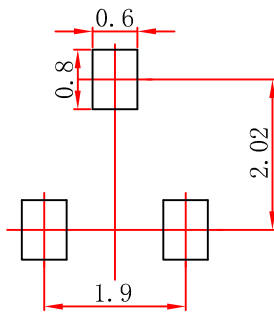
Threshold Voltage





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: ± 0.05 mm.
 3. The pad layout is for reference purposes only.