



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	32m Ω @4.5V	3.5A
	43m Ω @2.5V	

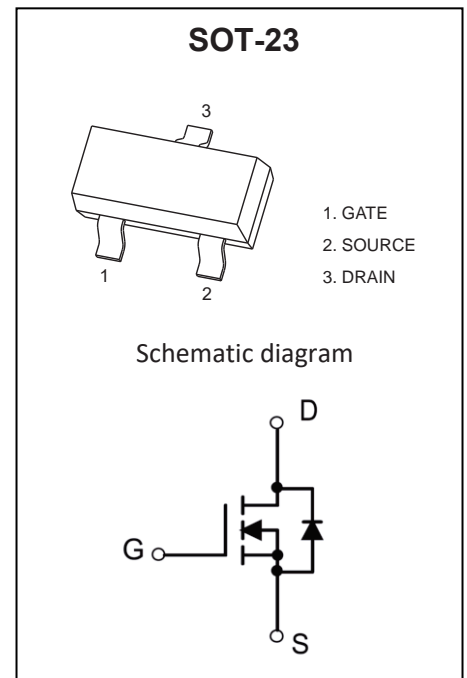
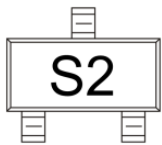
Feature

- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$ and Low Gate Charge

Application

- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

MARKING:



ABSOLUTE 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}	± 10	V
Continuous Drain Current	I_D	3.5	A
Plused Drain Current	I_{DM}	14	A
Continuous Source-Drain Current(Diode Conduction)	I_S	0.6	A
Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	312.5	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}\text{C}$

MOSFET ELECTRICAL CHARACTERISTICS($T_a=25^{\circ}\text{C}$ unless otherwise noted)

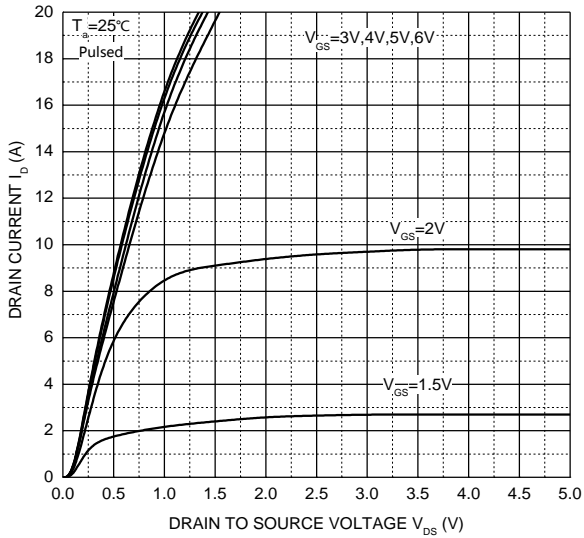
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 20V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 10V, V_{DS} = 0V$			± 0.1	μA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.65	0.95	1.2	V
Drain-source on-resistance ^a	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 3.6A$		32	42	m Ω
		$V_{GS} = 2.5V, I_D = 3.1A$		43	65	
Forward transconductance ^a	g_{FS}	$V_{DS} = 5V, I_D = 3.6A$		8		S
Dynamic characteristics						
Input Capacitance ^b	C_{iss}	$V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$		260		pF
Output Capacitance ^b	C_{oss}			48		pF
Reverse Transfer Capacitance ^b	C_{rss}			27		pF
Total gate charge	Q_g	$V_{DS} = 10V, V_{GS} = 4.5V, I_D = 3.0A$		2.9	5	nC
Gate-source charge	Q_{gs}			0.4		nC
Gate-drain charge	Q_{gd}			0.6		nC
Switching Characteristics^b						
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 10V, R_L = 3.3\Omega, V_{GEN} = 4.5V, R_g = 6\Omega$		2.5		ns
Turn-on rise time	t_r			3.2		ns
Turn-off delay time	$t_{d(off)}$			21		ns
Turn-off fall time	t_f			3		ns
Source-Drain Diode characteristics						
Diode Forward voltage	V_{DS}	$V_{GS} = 0V, I_S = 0.94A$		0.7	1.2	V

Notes :

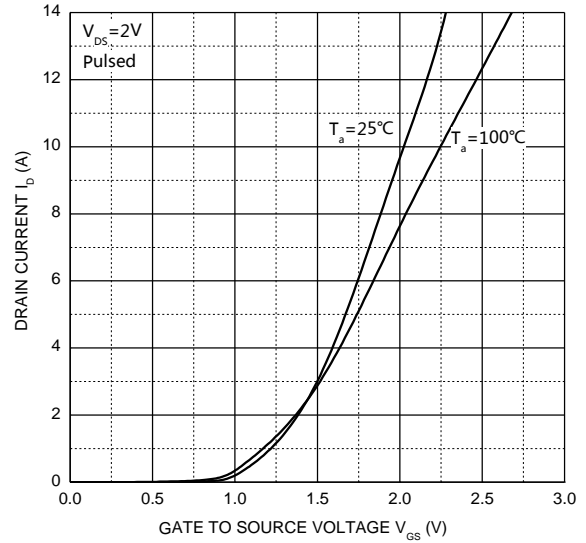
- a. Pulse Test : Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
b. These parameters have no way to verify.

Typical Electrical and Thermal Characteristics

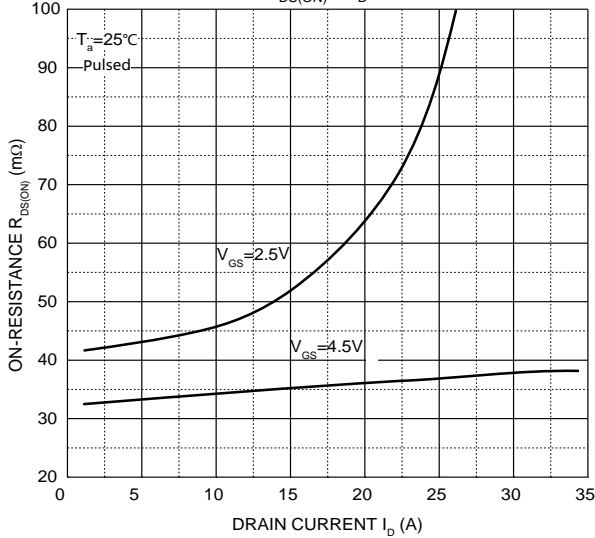
Output Characteristics



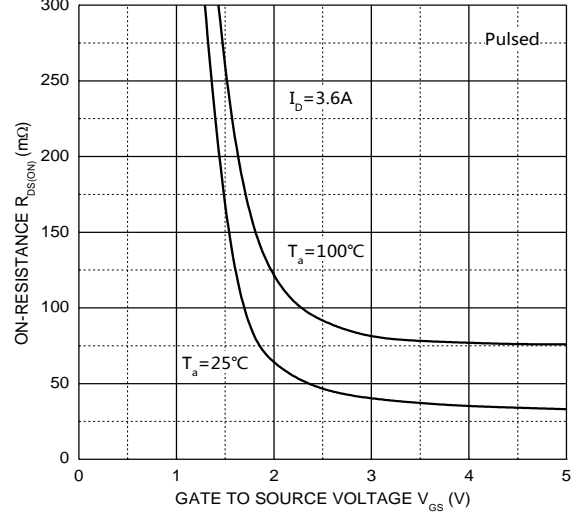
Transfer Characteristics



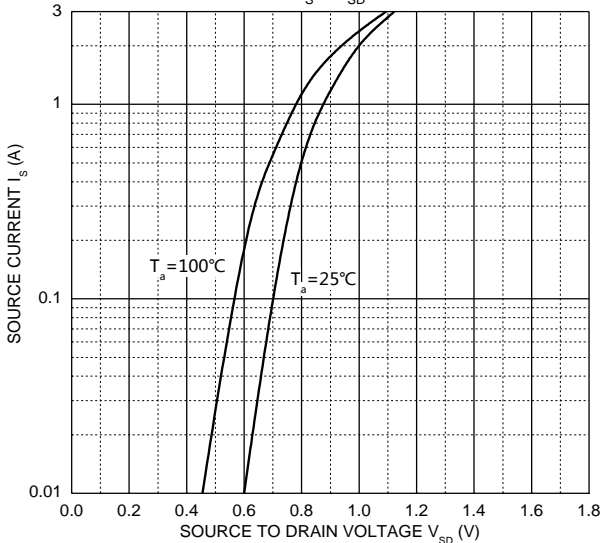
$R_{DS(ON)} - I_D$



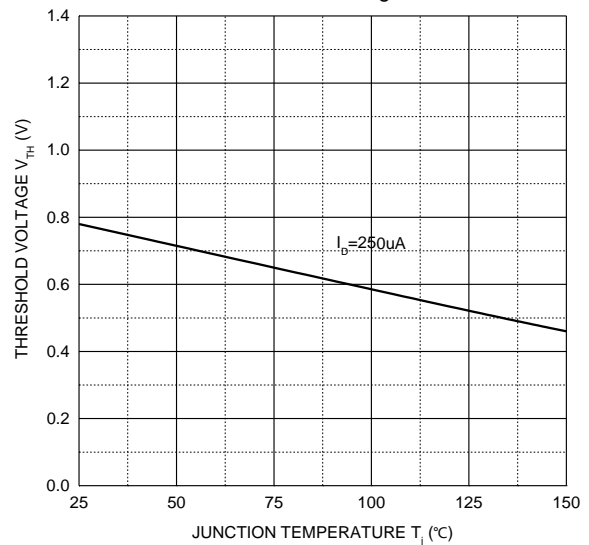
$R_{DS(ON)} - V_{GS}$

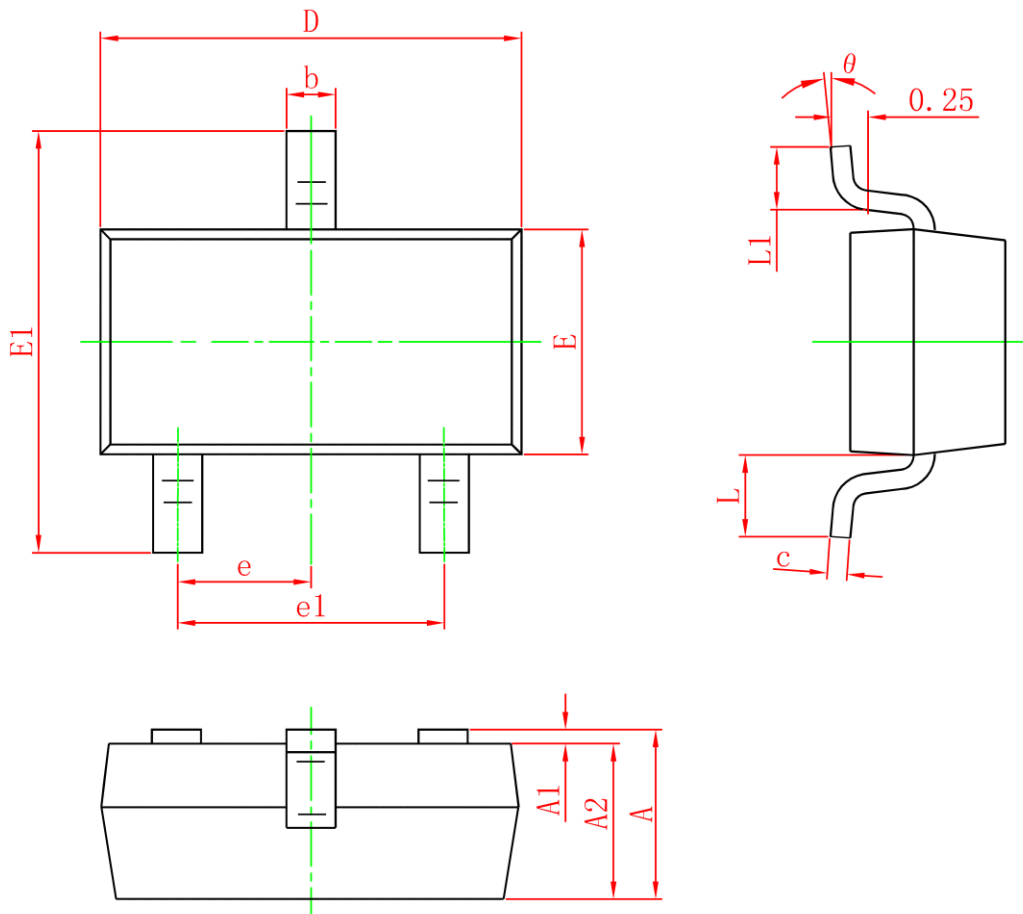


$I_S - V_{SD}$



Threshold Voltage



SOT-23 Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0	0.100	0	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	1.150	1.500	0.045	0.059
E1	2.250	2.650	0.089	0.104
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°