



### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
-20V	45mΩ@-4.5V	-3.1A
	70mΩ@-2.5V	
20V	23mΩ@4.5V	4.5A
	30mΩ@2.5V	

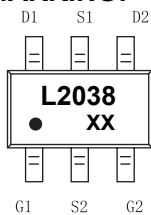
### Feature

- TrenchFET Power MOSFET
- High Density Cell Design for Low  $R_{DS(ON)}$

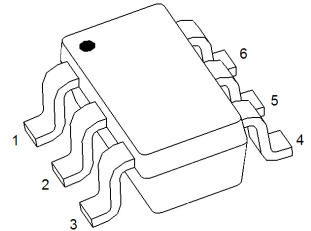
### Application

- Load Switch for Portable Devices
- DC/DC Converter

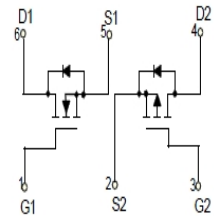
### MARKING:



SOT-23-6L



Schematic diagram



### ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
<b>P-MOSFET</b>			
Drain-Source Voltage	$V_{DS}$	-20	V
Gate-Source Voltage	$V_{GS}$	±12	V
Continuous Drain Current <sup>1,2</sup>	$I_D$	-3.1	A
Pulsed Drain Current	$I_{DM}$	-12	A
Power Dissipation	$P_D$	0.75	W
<b>N-MOSFET</b>			
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	±12	V
Continuous Drain Current <sup>1,2</sup>	$I_D$	4.5	A
Pulsed Drain Current	$I_{DM}$	18	A
Power Dissipation	$P_D$	0.75	W
<b>Temperature and Thermal Resistance</b>			
Thermal Resistance from Junction to Ambient <sup>1,2</sup>	$R_{\theta JA}$	167	$^\circ\text{C/W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55~ +150	$^\circ\text{C}$

**P-channel MOSFET ELECTRICAL CHARACTERISTICS(T<sub>a</sub> = 25°C unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Off Characteristics</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA	-20			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = -16V, V <sub>GS</sub> = 0V			-1	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±12V, V <sub>DS</sub> = 0V			±100	nA
<b>On Characteristics<sup>3</sup></b>						
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA	-0.4	-0.6	-1.0	V
Drain-source on-resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -3.0A		45	74	mΩ
		V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -1.5A		70	110	
Forward transconductance	g <sub>FS</sub>	V <sub>DS</sub> = -5V, I <sub>D</sub> = -2.0A	3			S
<b>Dynamic Characteristics</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -10V, V <sub>GS</sub> = 0V, f = 1MHz		550		pF
Output Capacitance	C <sub>oss</sub>			89		
Reverse Transfer Capacitance	C <sub>rss</sub>			65		
<b>Switching Characteristics</b>						
Total gate charge	Q <sub>g</sub>	V <sub>DS</sub> = -10V, V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -3A		4.3		nC
Gate-source charge	Q <sub>gs</sub>			0.8		
Gate-drain charge	Q <sub>gd</sub>			1.1		
Turn-on delay time	t <sub>d(on)</sub>	V <sub>DD</sub> = -10V, V <sub>GS</sub> = -4.5V, R <sub>L</sub> = 10Ω, R <sub>G</sub> = 2.5Ω		12		nS
Turn-on rise time	t <sub>r</sub>			54		
Turn-off delay time	t <sub>d(off)</sub>			15		
Turn-off fall time	t <sub>f</sub>			9		
<b>Diode Characteristics</b>						
Diode Forward Voltage <sup>3</sup>	V <sub>SD</sub>	V <sub>GS</sub> = 0V, I <sub>SD</sub> = -0.6A			-1.2	V

**N-channel MOSFET ELECTRICAL CHARACTERISTICS(T<sub>a</sub> = 25°C unless otherwise noted)**

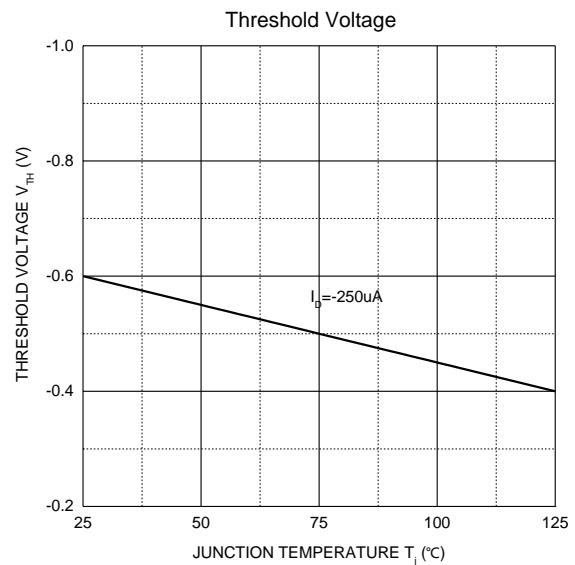
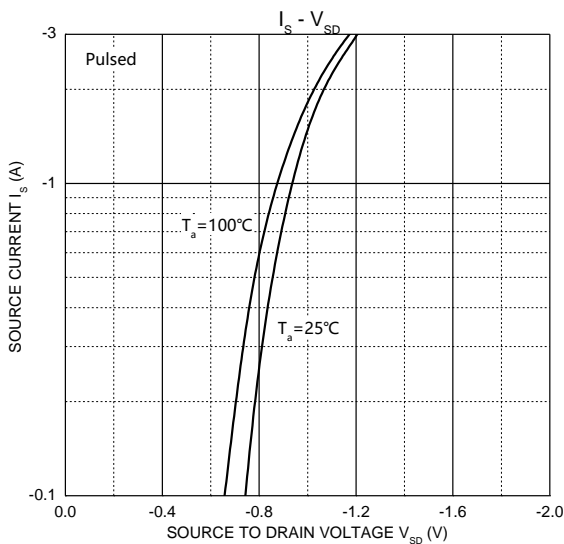
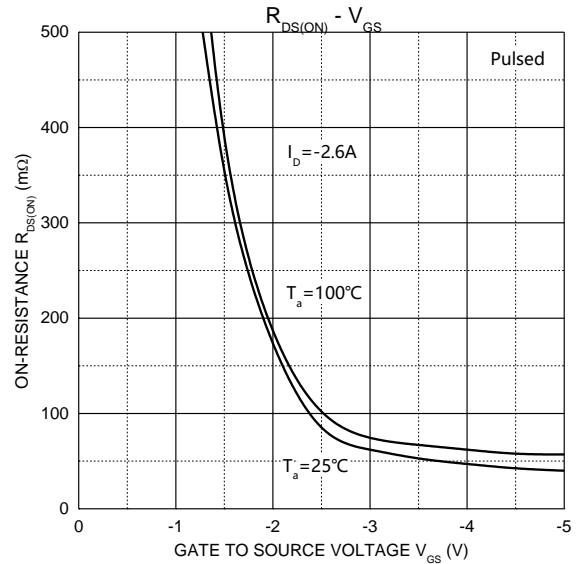
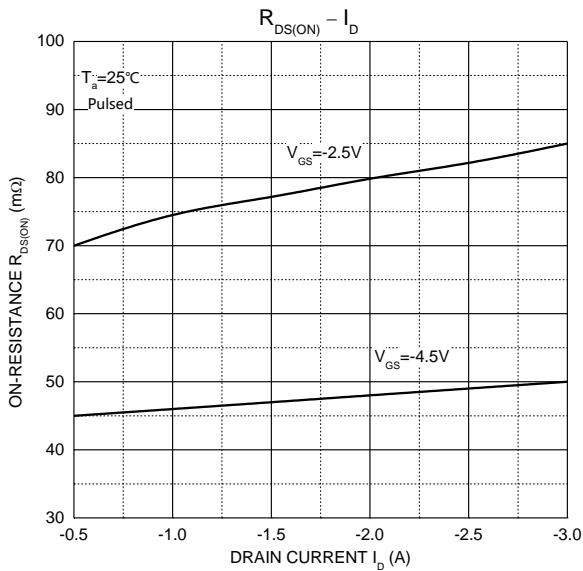
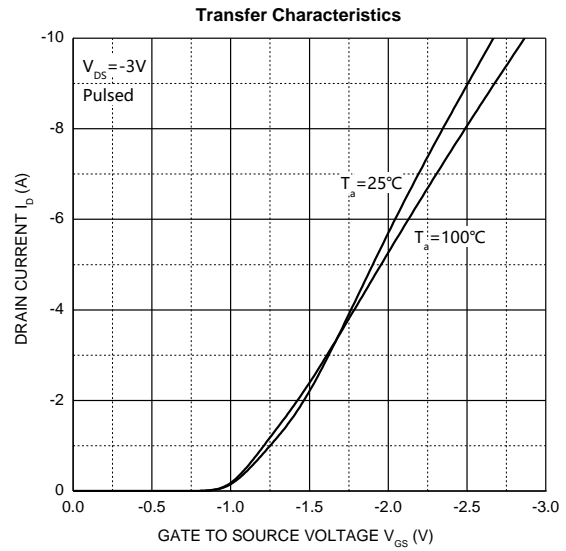
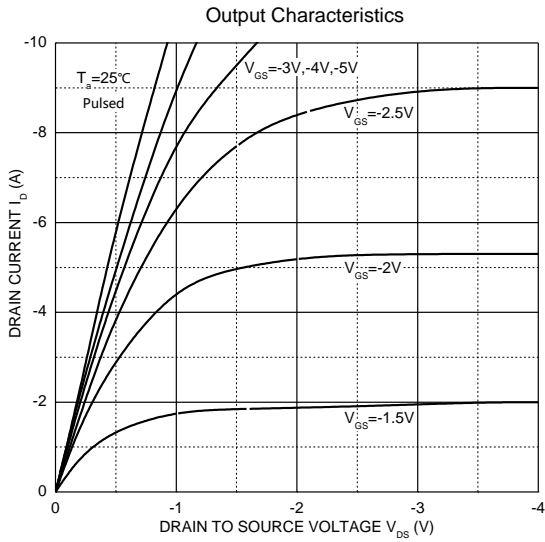
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Off Characteristics</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	20			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = 16V, V <sub>GS</sub> = 0V			1	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±12V, V <sub>DS</sub> = 0V			±100	nA
<b>On Characteristics<sup>3</sup></b>						
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	0.4	0.6	1.0	V
Drain-source on-resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 4.0A		23	35	mΩ
		V <sub>GS</sub> = 2.5V, I <sub>D</sub> = 2.5A		30	43	
Forward transconductance	g <sub>FS</sub>	V <sub>DS</sub> = 5V, I <sub>D</sub> = 3.6A	5			S
<b>Dynamic Characteristics</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = 10V, V <sub>GS</sub> = 0V, f = 1MHz		595		pF
Output Capacitance	C <sub>oss</sub>			106		
Reverse Transfer Capacitance	C <sub>rss</sub>			59		
<b>Switching Characteristics</b>						
Total gate charge	Q <sub>g</sub>	V <sub>DS</sub> = 10V, V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 4.3A		6.6		nC
Gate-source charge	Q <sub>gs</sub>			0.9		
Gate-drain charge	Q <sub>gd</sub>			1.4		
Turn-on delay time	t <sub>d(on)</sub>	V <sub>DD</sub> = 10V, R <sub>L</sub> = 1.5Ω, V <sub>GS</sub> = 4.5V, R <sub>G</sub> = 3Ω		13		ns
Turn-on rise time	t <sub>r</sub>			54		
Turn-off delay time	t <sub>d(off)</sub>			18		
Turn-off fall time	t <sub>f</sub>			11		
<b>Diode Characteristics</b>						
Diode Forward Voltage <sup>3</sup>	V <sub>SD</sub>	V <sub>GS</sub> = 0V, I <sub>SD</sub> = 1.0A			1.2	V

Notes :

- 1.R<sub>θJA</sub> is measured with the device mounted on 1 in<sup>2</sup> FR4 board with 1 oz. single side copper, in a still air environment with T<sub>A</sub> = 25°C.
- 2.R<sub>θJA</sub> is measured in the steady state
- 3.Pulse test : Pulse width ≤ 380μs, duty cycle ≤ 2%.

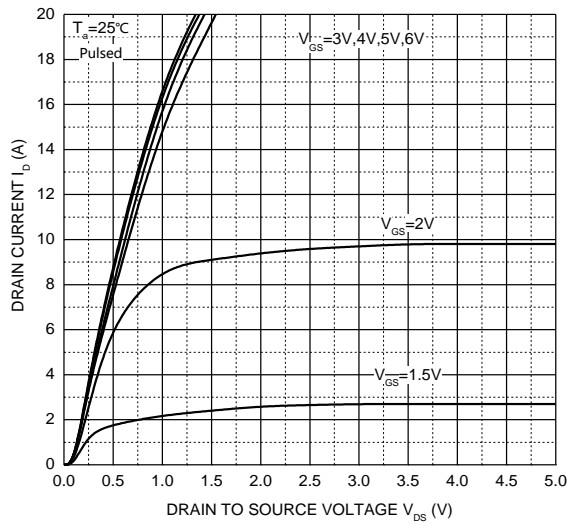
**Typical Electrical and Thermal Characteristics**

**P-Channel MOS**

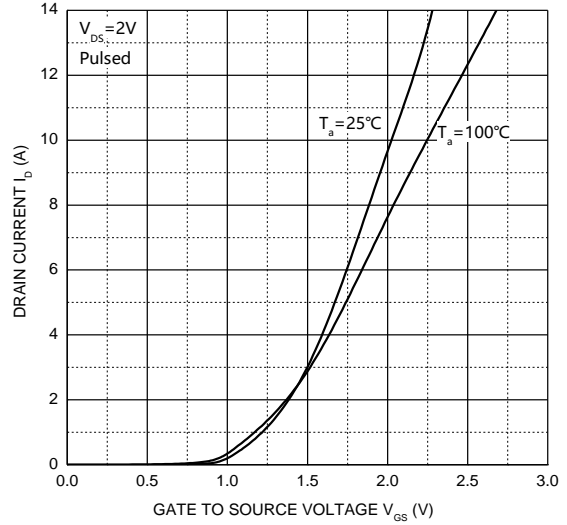


N-Channel MOS

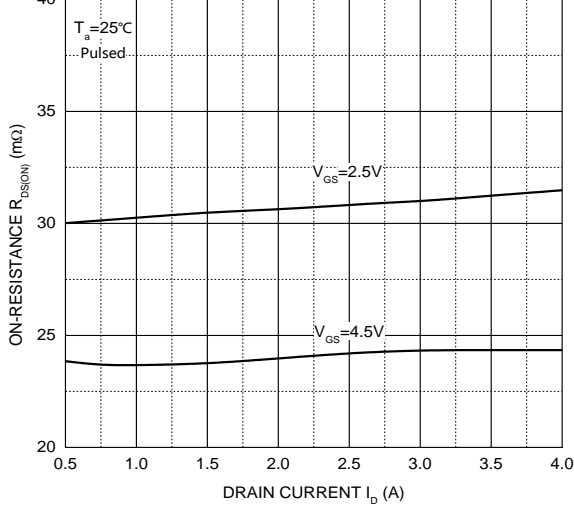
Output Characteristics



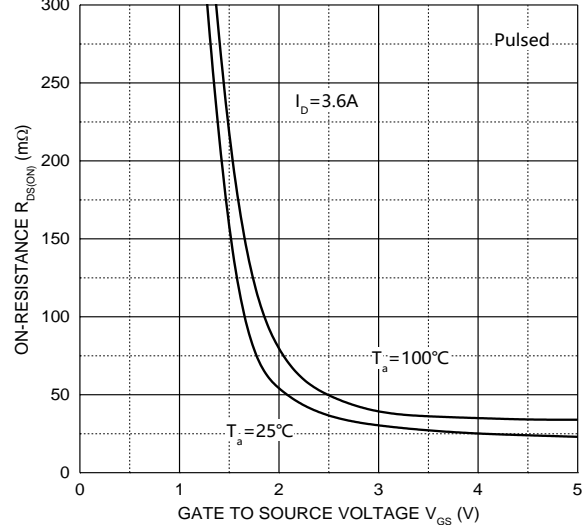
Transfer Characteristics



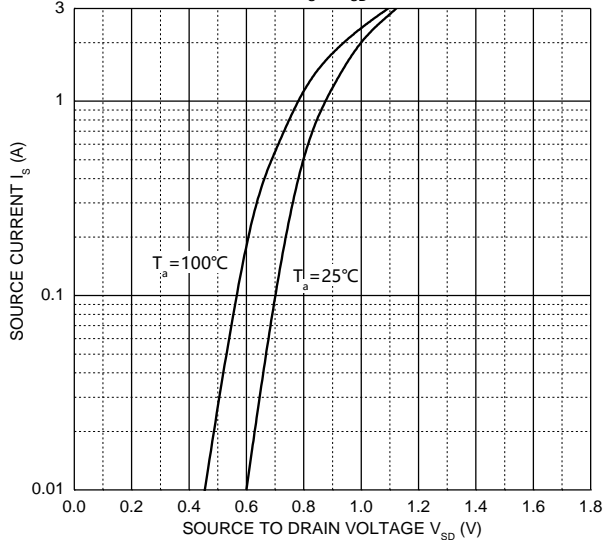
$R_{DS(ON)} - I_D$



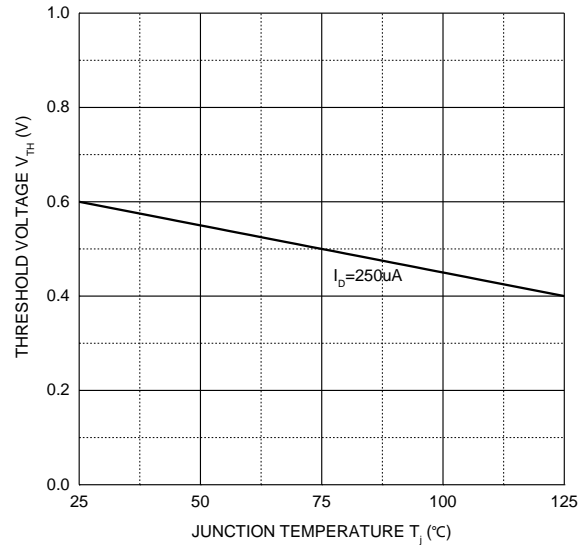
$R_{DS(ON)} - V_{GS}$



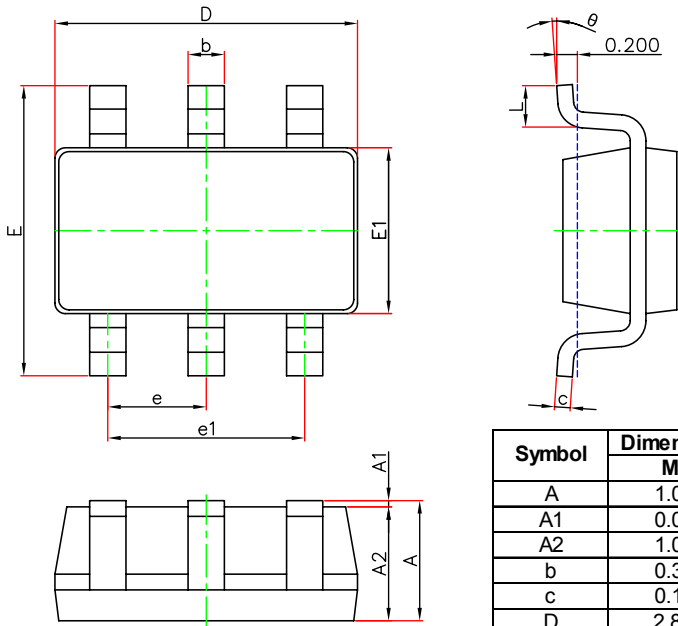
$I_S - V_{SD}$



Threshold Voltage



**SOT-23-6L Package Information**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

单击下面可查看定价，库存，交付和生命周期等信息

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