

## PW2016L

### 20V Dual N-Channel MOSFET

5.5A 20V;  $R_{DS(ON)typ}=15.7m\Omega@4.5V$ ,  $R_{DS(ON)typ}=20m\Omega@2.5V$

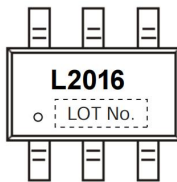
#### FEATURE

- TrenchFET Power MOSFET
- Excellent RDS(on)
- Low Gate Charge
- High Power and Current Handling Capability
- Surface Mount Package

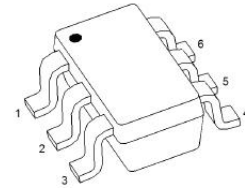
#### Application

- Battery Protection
- Load Switch
- Power Management

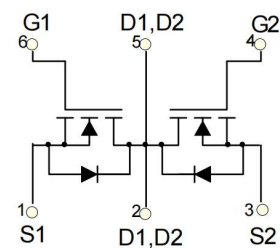
#### MARKING:



#### SOD-23-6L



#### Schematic diagram



#### 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	$V_{GS}$	$\pm 10$	V
Continuous Drain Current	$I_D$	5.5	A
Pulsed Drain Current <sup>1</sup>	$I_{DM}$	23	A
Power Dissipation	$P_D$	1.5	W
Thermal Resistance from Junction to Ambient <sup>2</sup>	$R_{\theta JA}$	83.3	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55~ +150	$^\circ\text{C}$

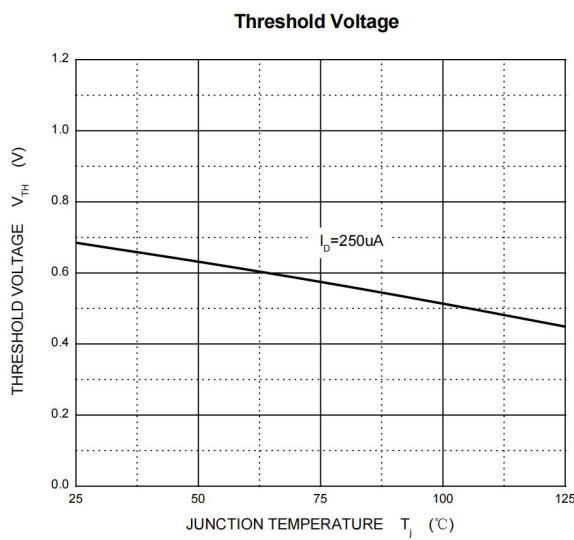
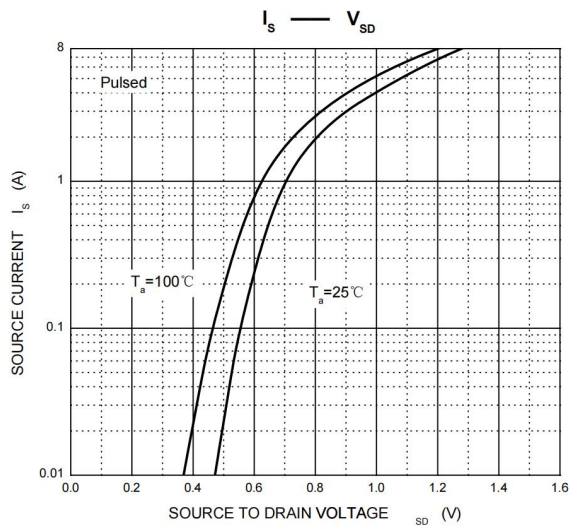
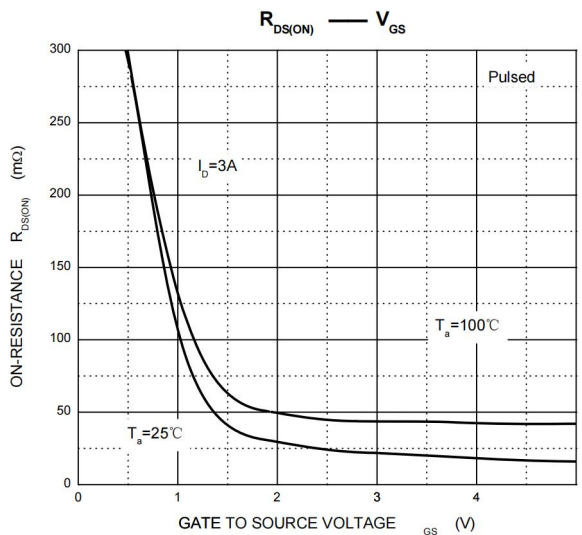
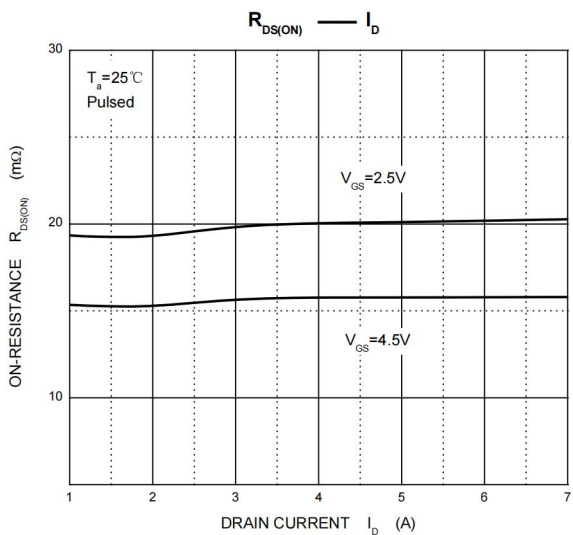
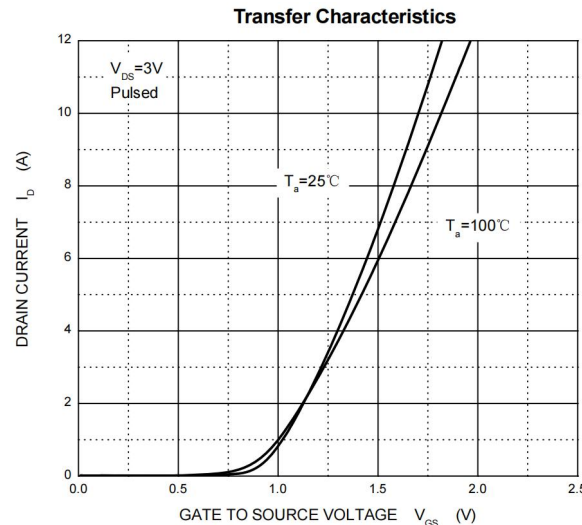
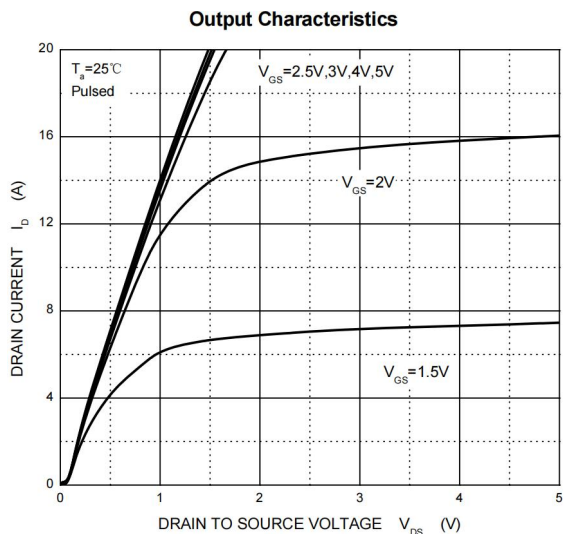
**MOSFET ELECTRICAL CHARACTERISTICS(T<sub>a</sub>=25°C unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>STATIC 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> = 18V, V <sub>GS</sub> = 0V			1	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±10V, V <sub>DS</sub> = 0V			±100	nA
Gate threshold voltage <sup>3</sup>	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	0.5	0.7	1.2	V
Drain-source on-resistance <sup>3</sup>	R <sub>Ds(on)</sub>	V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 3A		15.7	20	mΩ
		V <sub>GS</sub> = 2.5V, I <sub>D</sub> = 3A		20	27	
Forward Transconductance <sup>3</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 5V, I <sub>D</sub> = 4.5A	5			S
Diode Forward Voltage <sup>3</sup>	V <sub>SD</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = 1.25A			1.2	V
<b>DYNAMIC CHARACTERISTICS<sup>4</sup></b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = 8V, V <sub>GS</sub> = 0V, f = 1MHz		800		pF
Output Capacitance	C <sub>oss</sub>			155		
Reverse Transfer Capacitance	C <sub>rss</sub>			125		
<b>SWITCHING CHARACTERISTICS<sup>4</sup></b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = 10V, V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 4A		11		nC
Gate-Source Charge	Q <sub>gs</sub>			2.3		
Gate-Drain Charge	Q <sub>gd</sub>			2.5		
Turn-on delay time	t <sub>d(on)</sub>	V <sub>DD</sub> = 10V, V <sub>GS</sub> = 4V I <sub>D</sub> = 1A, R <sub>G</sub> = 10Ω		18		ns
Turn-on rise time	t <sub>r</sub>			5		
Turn-off delay time	t <sub>d(off)</sub>			43		
Turn-off fall time	t <sub>f</sub>			20		

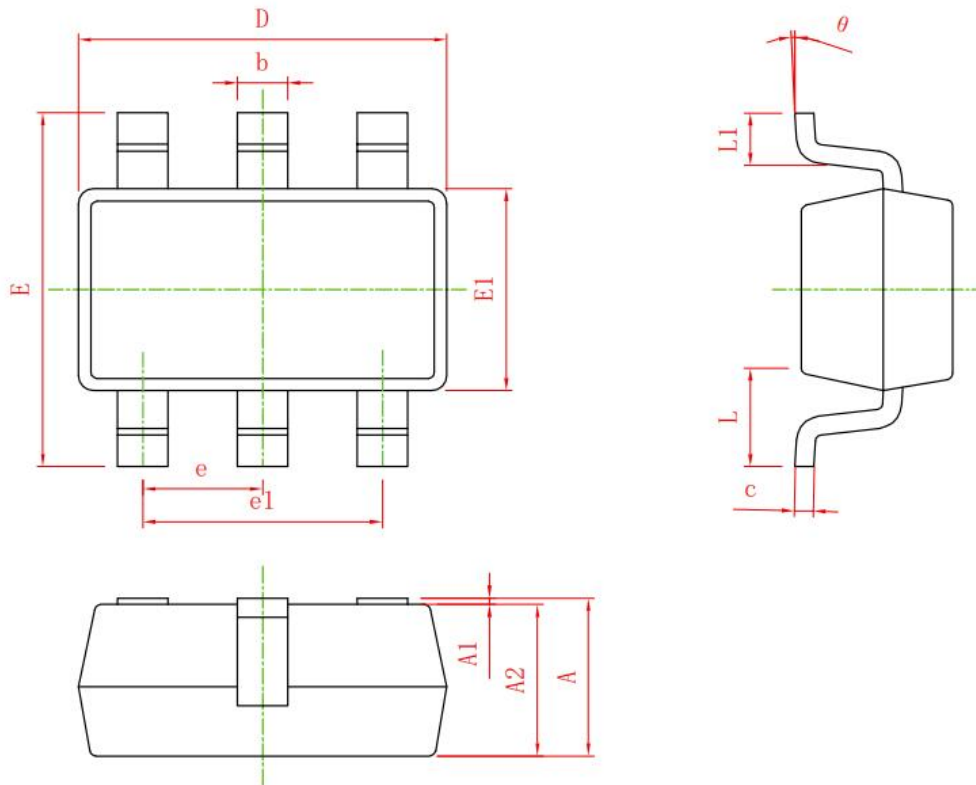
**Notes :**

- 1.Repetitive rating : Pluse width limited by maximum junction temperature
- 2.Surface mounted on FR4 board using 1 square inch pad size,1oz single-side copper.
- 3.Pulse test : Pulse width ≤ 300μs, duty cycle ≤ 2%.
- 4.Guaranteed by design, not subject to production.

Typical Characteristics



## SOT-23-6L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inche	
	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
L1	0.600REF.		0.024REF.	
θ	0°	8°	0°	8°