重庆平伟实业股份有限公司
CHONGQING PINGWEI ENTERPRISE CO.,LTD

PW2019L

20V N-Channel MOSFET

5A 20V；$R_{DS(ON)typ}$=19.5mΩ@4.5V，$R_{DS(ON)typ}$=24mΩ@2.5V

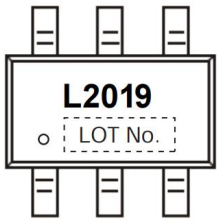
FEATURE

- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$
- Low Gate Charge
- High Power and Current Handing Capability
- Surface Mount Package

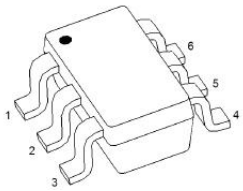
Application

- Battery Protection
- Load Switch
- Power Management

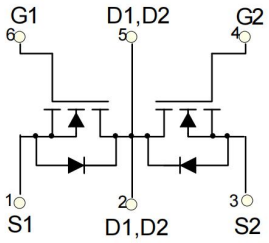
MARKING:



SOD-23-6L



Schematic diagram



ABSOLUTE MAXIMUM RATINGS (T_a=25℃ 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	5	A
Pulsed Drain Current1	I_{DM}	21	A
Power Dissipation	P_D	1.5	W
Thermal Resistance from Junction to Ambient2	$R_{\theta JA}$	83.3	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS(T_a=25℃ 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 =250μA	20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =18V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±10V, V_{DS} = 0V			±100	nA
Gate threshold voltage[3]	$V_{GS(th)}$	V_{DS} =VGS , I_D =250μA	0.5	0.7	1.2	V
Drain-source on-resistance[3]	$R_{DS(on)}$	V_{GS} =4.5V, I_D =3A		19.5	27	mΩ
		V_{GS} =2.5V, I_D =3A		24	35	
Forward Transconductance[3]	g_{fs}	V_{DS}=5V , I_D=4.5A	5			S
Diode Forward Voltage	V_{SD}	V_{GS}=0V , I_S=1.25A			1.2	V
DYNAMIC CHARACTERISTICS[4]						
Input Capacitance	Ciss	V_{DS} =8V,V_{GS} =0V,f =1MHz		755		pF
Output Capacitance	Coss			130		
Reverse Transfer Capacitance	Crss			1 12		
SWITCHING CHARACTERISTICS[4]						
Total Gate Charge	Qg	V_{DS}=10V , V_{GS}=4.5V , I_D=4A		9		nC
Gate-Source Charge	Qgs			1.8		
Gate-Drain Charge	Qgd			2.2		
Turn-on delay time	$t_{d(on)}$	V_{DD}=10V , V_{GS}=4V , I_D=1A , R_G=10Ω		15		ns
Turn-on rise time	t_r			4		
Turn-off delay time	$t_{d(off)}$			36		
Turn-off fall time	t_f			15		

Notes :

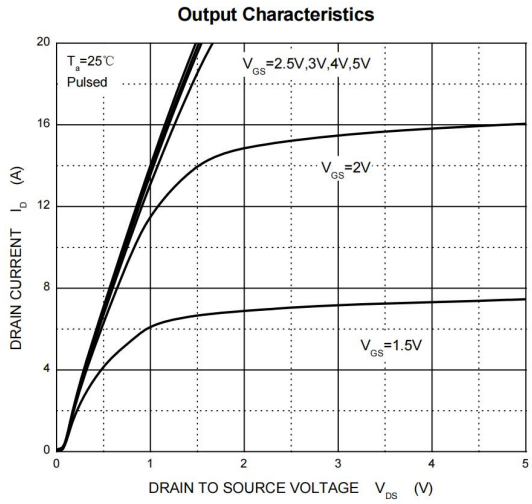
1.Repetitive rating ： Pluse width limited by maximum junction temperature

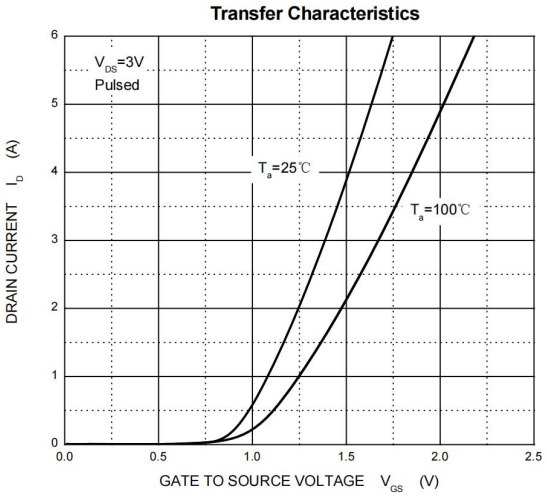
2.Surface mounted on FR4 board using 1 square inch pad size,1oz single-side copper.

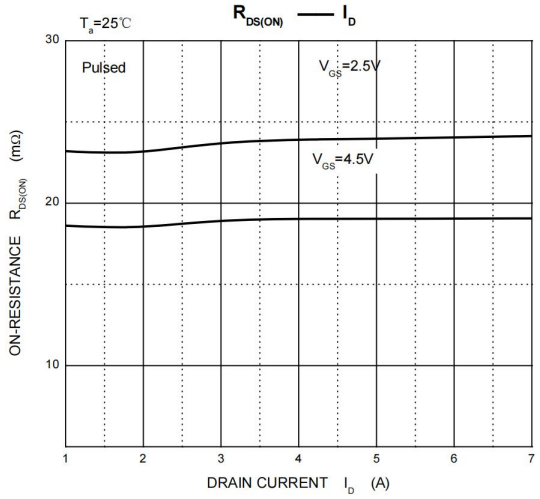
3.Pulse test : Pulse width≤300μs, duty cycle≤2%.

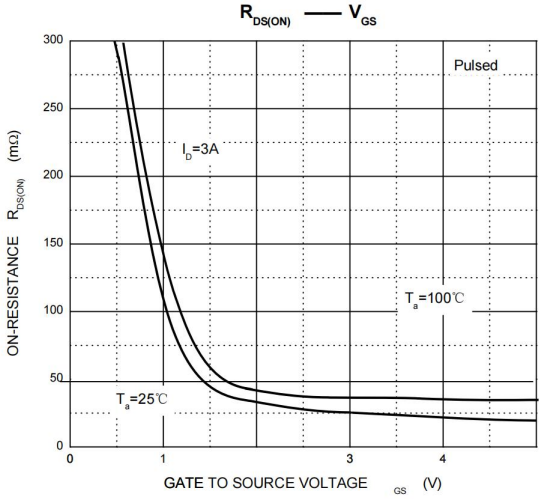
4.Guaranteed by design, not subject to production.

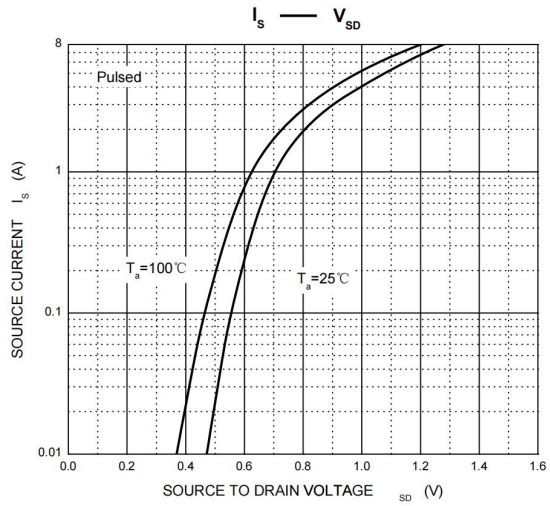
Typical Characteristics

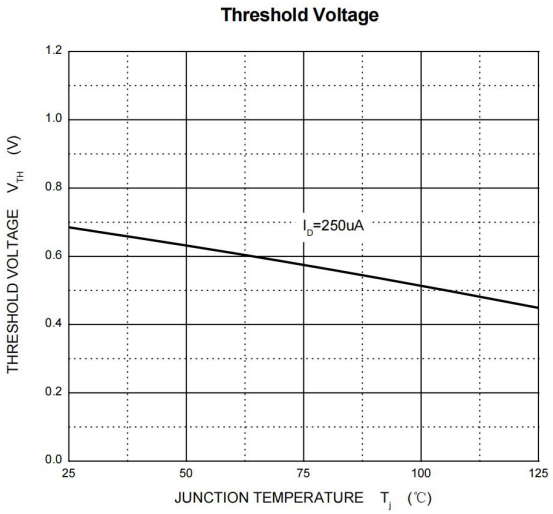




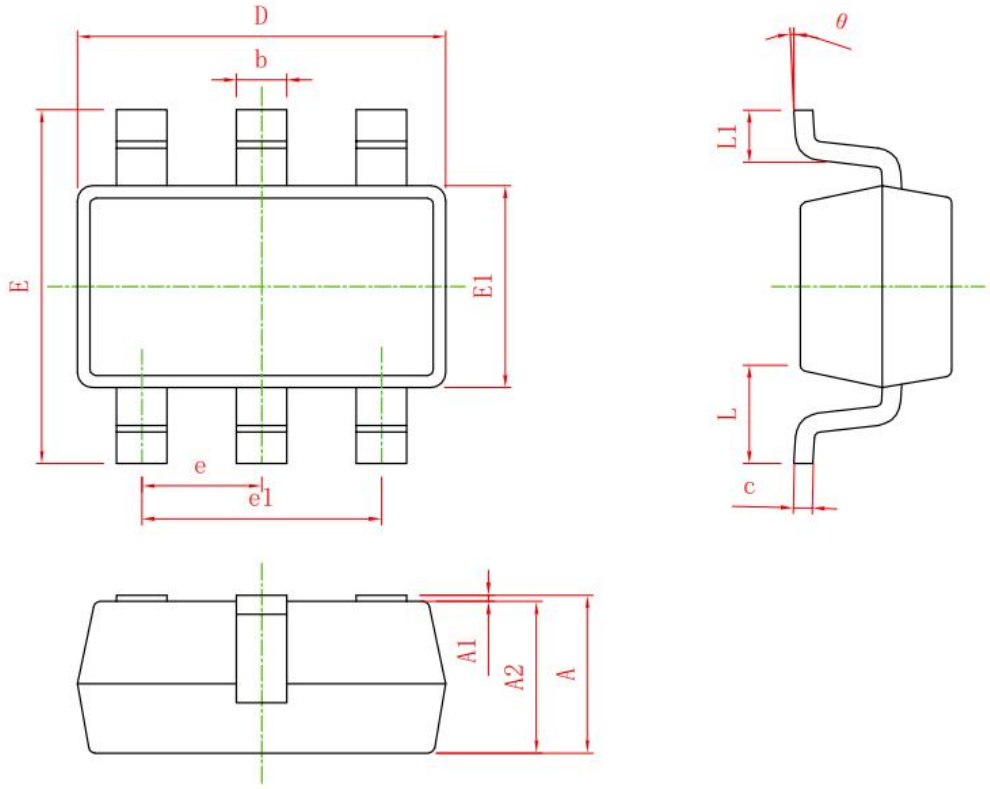








SOT-23-6L Package Outline Dimensions



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°