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

PW2301A

20V P-Channel MOSFET

-3.4A -20V； $R_{DS(ON)typ}$=60mΩ@-4.5V， $R_{DS(ON)typ}$=70mΩ@-2.5V

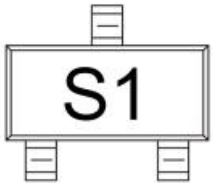
FEATURE

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

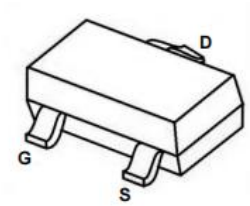
Application

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

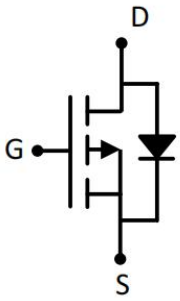
MARKING:



SOT-23



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}	±12	V
Continuous Drain Current(1,2)	I_D	-3.4	A
Pulsed Drain Current	I_{DM}	-14	A
Power Dissipation	P_D	0.77	W
Thermal Resistance from Junction to Ambient(1,2)	$R_{\theta JA}$	162	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS(T_a=25°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 =-250μA	-20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-16V,V_{GS} = 0V			-1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±12V, V_{DS} = 0V			±100	nA
On Characteristics						
Gate threshold voltage(3)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.4	-0.7	-1	V
Drain-source on-resistance(3)	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-3.4A		60	80	mΩ
		V_{GS} =-2.5V, I_D =-3.0A		70	90	
Forward tranconductance(3)	g_{FS}	V_{DS} =-5V, I_D =-2A	5			S
Dynamic characteristics						
Input Capacitance	C_{iss}	V_{DS}=-10V,V_{GS}=0V,f=1MHz		550		pF
Output Capacitance	C_{oss}			90		
Reverse Transfer Capacitance	C_{rss}			66		
Switching characteristics						
Total gate charge	Q_g	V_{DS} =-10V,V_{GS} =-4.5V,I_D =-3.4A		4.4		nC
Gate-source charge	Q_{gs}			0.9		
Gate-drain charge	Q_{gd}			1.2		
Turn-on delay time	$t_{d(on)}$	V_{DD}=-10V,V_{GEN}=-4.5V,ID=-1A, R_{GEN}=2.5Ω		13		ns
Turn-on rise time	t_r			55		
Turn-off delay time	$t_{d(off)}$			16		
Turn-off fall time	t_f			10		
Source-Drain Diode characteristics						
Diode forward current	I_S	T_A=25°C			-3.4	A
Diode pulsed forward current(a)	I_{SM}				-14	A
Diode Forward voltage	V_{DS}	I_S=-3.4A, V_{GS} = 0V			-1.2	V

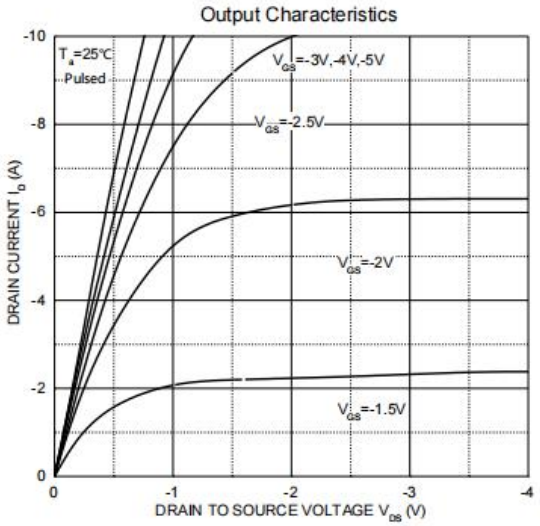
Notes:

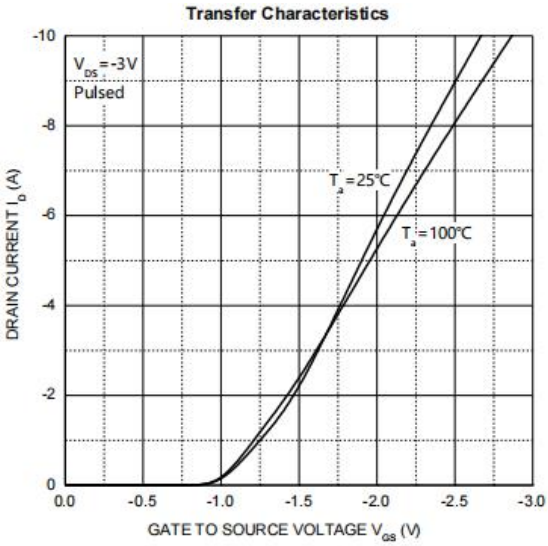
1.$R_{\theta JA}$ is measured with the device mounted on 1 in^2 FR4 board with 1oz. single side copper, in a still air environment with T_A = 25°C.

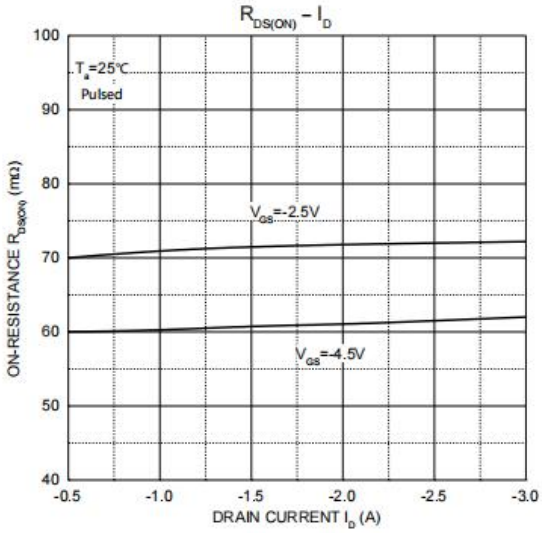
2. $R_{\theta JA}$ is measured in the steady state

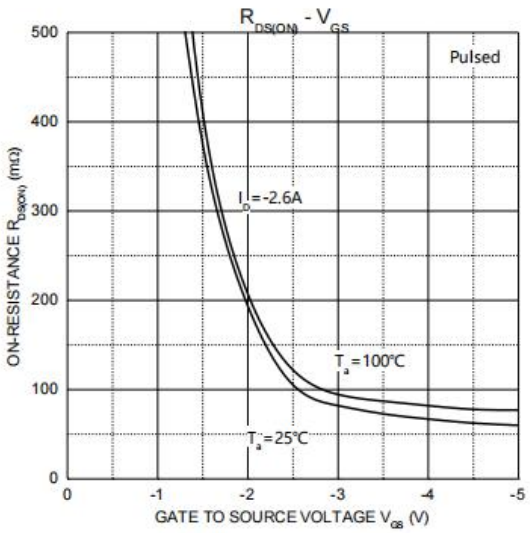
3.Pulse test : Pulse width ≤ 380μs, duty cycle ≤ 2%.

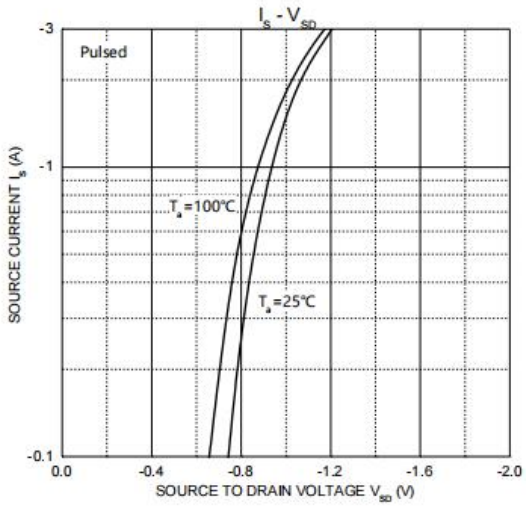
Typical Electrical and Thermal Characteristics

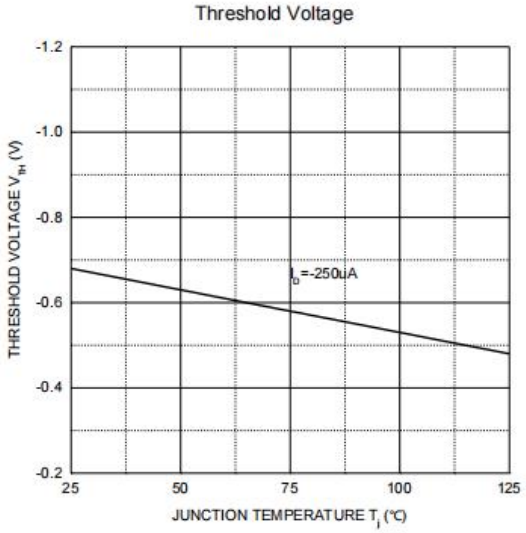




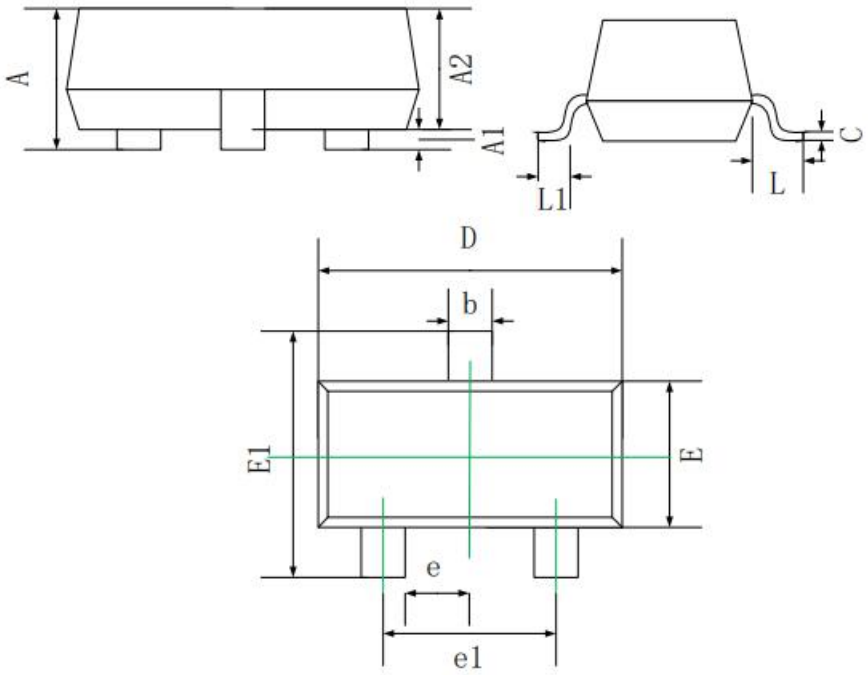








SOT-23 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.15
A1	0.00	0.10
A2	0.90	1.05
b	0.30	0.50
c	0.08	0.15
D	2.80	3.00
E	1.20	1.40
E1	2.25	2.55
e	0.95 REF.	
e1	1.80	2.00
L	0.55 REF.	
L1	0.30	0.50