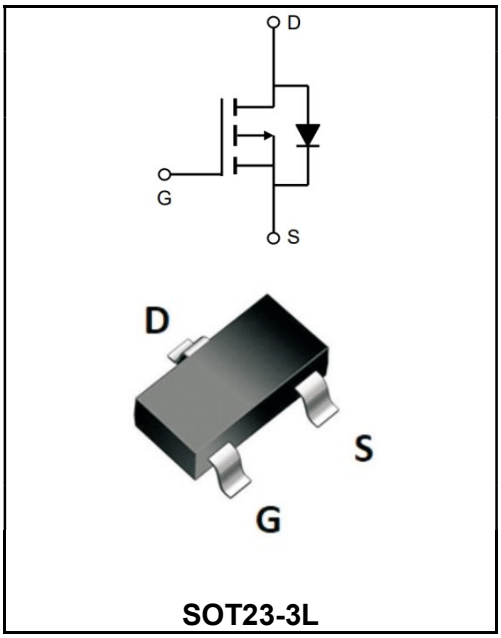
-12V P-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	-7.0A
V_{DSS}	-12V
R_{DSON}-typ(@V_{GS}=-4.5V)	< 24mΩ(Type:19 mΩ)



Pb lead-free ROHS

Application

- electronic cigarette
- Load switch

Product Specification Classification

Part Number	Package	Marking	Pack
YFW2311MI	SOT23-3L	20P07	3000PCS/Tape

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	-12	V
Gate - Source Voltage	V_{GS}	±12	V
Continuous Drain Current, V_{GS} @ 10V[1] @T_C=25℃	I_D	-7.0	A
Continuous Drain Current, V_{GS} @ 10V[1] @T_C=100℃	I_D	-3.6	A
Pulsed Drain Current note1	I_{DM}	-22	A
Power Dissipation @T_C=25℃	P_D	1.6	W
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	125	°C/W
Operating Junction Temperature Range	T_J ,T_{STG}	-55 to +150	°C

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=-250uA	**V(BR)DSS**	-12	-18	-	**V**
Zero Gate Voltage Drain Current	V_{DS}=-12V , V_{GS}=0V	**I_{DSS}**	-	-	-1	**μA**
Gate to Body Leakage Current	V_{GS}=±12V, V_{DS}=0V	**I_{GSS}**	-	-	±100	**nA**
Gate Threshold Voltage	V_{DS}= V_{GS}, I_D=-250μA	**$V_{GS(th)}$**	-0.5	-0.65	-1.0	**V**
Static Drain-Source on-Resistance note2	V_{GS}=-4.5V, I_D=-5.2A	**$R_{DS(ON)}$**	-	19	24	**mΩ**
	V_{GS}=-2.5V, I_D=-4.2A		-	28	35	
Input Capacitance	V_{DS}=-6V V_{GS}=0V f=1MHz	**C_{iss}**	-	1100	-	**pF**
Output Capacitance		**C_{oss}**	-	390	-	
Reverse Transfer Capacitance		**C_{rss}**	-	300	-	
Total Gate Charge	V_{DS}=-4V I_D=-4.1A V_{GS}=-4.5V	**Q_g**	-	11.5	-	**nC**
Gate-Source Charge		**Q_{gs}**	-	1.5	-	
Gate-Drain(“Miller”) Charge		**Q_{gd}**	-	3.2	-	
Turn-on delay time	V_{DD}=-4V I_D=-3.3A R_G=1.0Ω V_{GEN}=-4.5V R_L=1.2Ω	**$t_{d(on)}$**	-	25	-	**ns**
Turn-on Rise Time		**T_r**	-	45	-	
Turn-Off Delay Time		**$t_{d(OFF)}$**	-	72	-	
Turn-Off Fall Time		**t_f**	-	60	-	
Maximum Continuous Drain to Source Diode Forward Current		**I_S**	-	-	-6.0	**A**
Maximum Pulsed Drain to Source Diode Forward Current		**I_{SM}**	-	-	-16	**A**
Drain to Source Diode Forward Voltage	V_{GS}=0V , I_S=-4.1A	**V_{SD}**	-	-	-1.2	**V**
Reverse Recovery Time	I_S=-4.1A, dI/dt=100A/μs, V_{GS}=0V	**t_{rr}**	-	20	-	**ns**
Reverse Recovery Charge		**Q_{rr}**	-	9	-	**nC**

Note :
1、The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper.
2、The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%
3、The power dissipation is limited by 150℃ junction temperature
4、The data is theoretically the same as ID and IDM , in real applications , should be limited by total power dissipation.

Ratings and Characteristic Curves

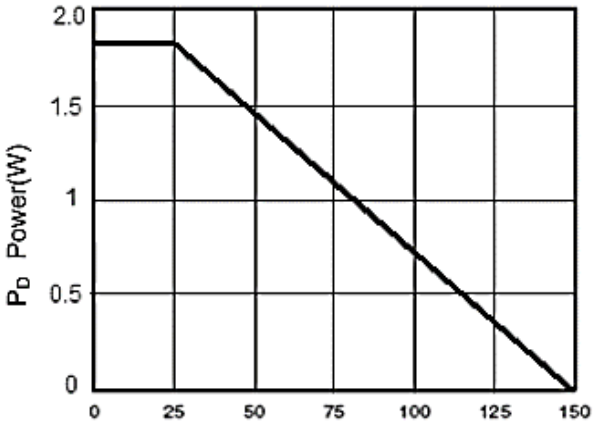


Figure 1 Power Dissipation

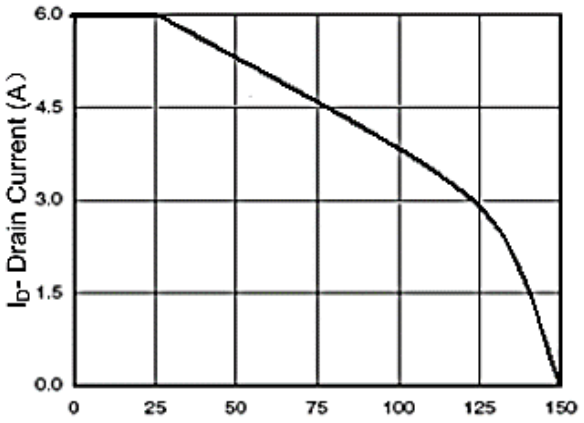


Figure 2 Drain Current

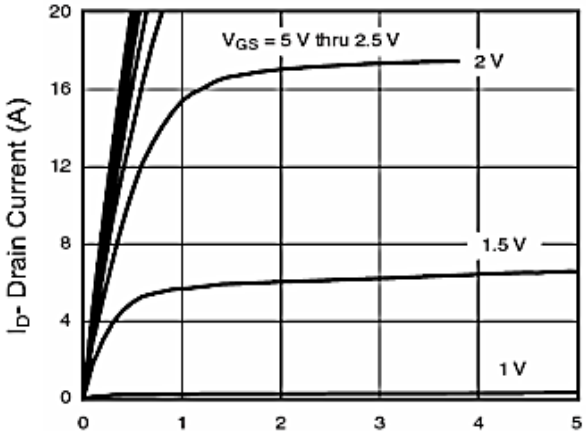


Figure 3 Output Characteristics

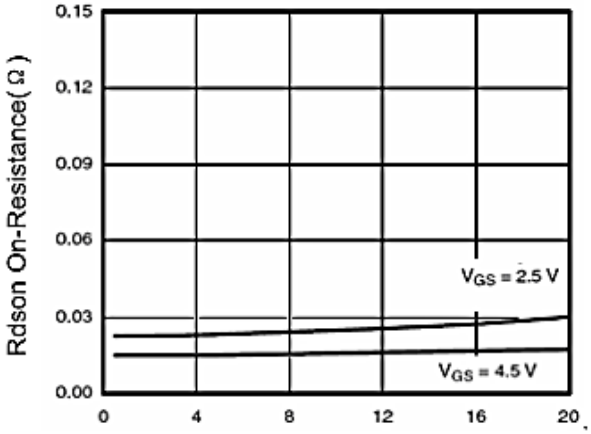


Figure 4 Drain-Source On-Resistance

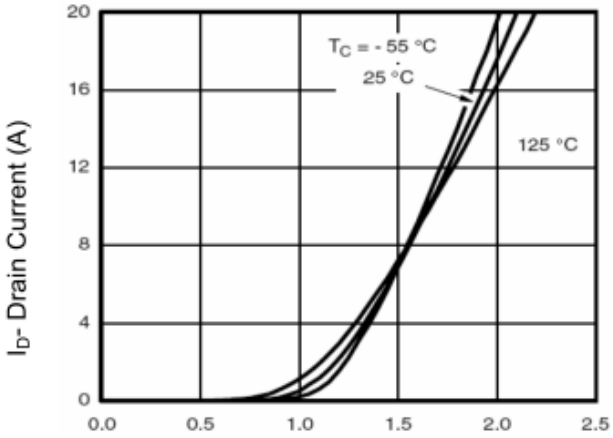


Figure 5 Transfer Characteristics

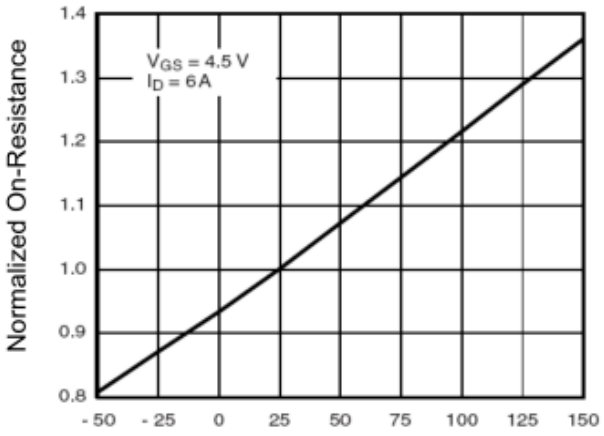


Figure 6 Drain-Source On-Resistance

Ratings and Characteristic Curves

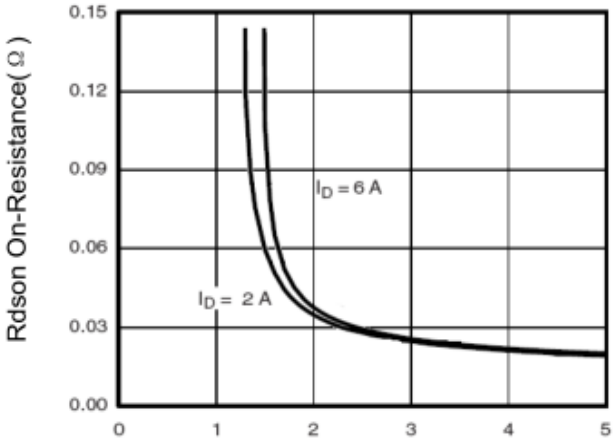


Figure 7 Rdson vs Vgs

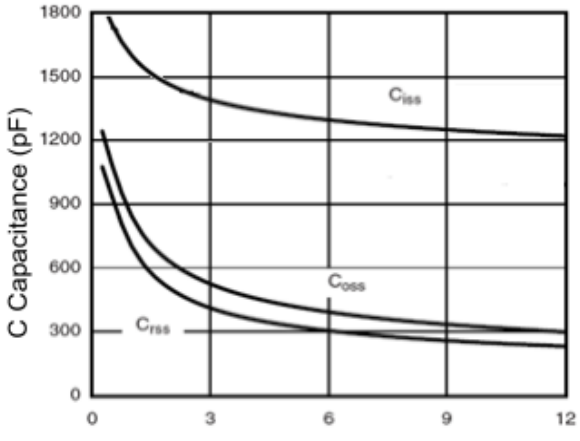


Figure 8 Capacitance vs Vds

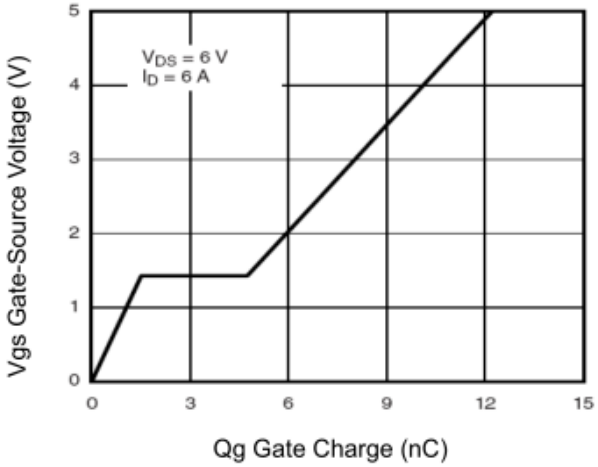


Figure 9 Gate Charge

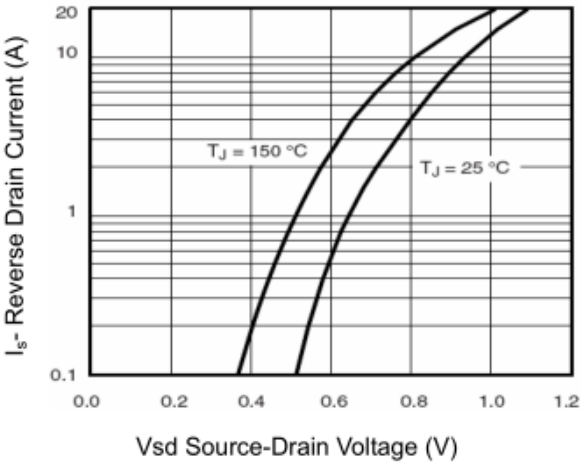


Figure 10 Source- Drain Diode Forward

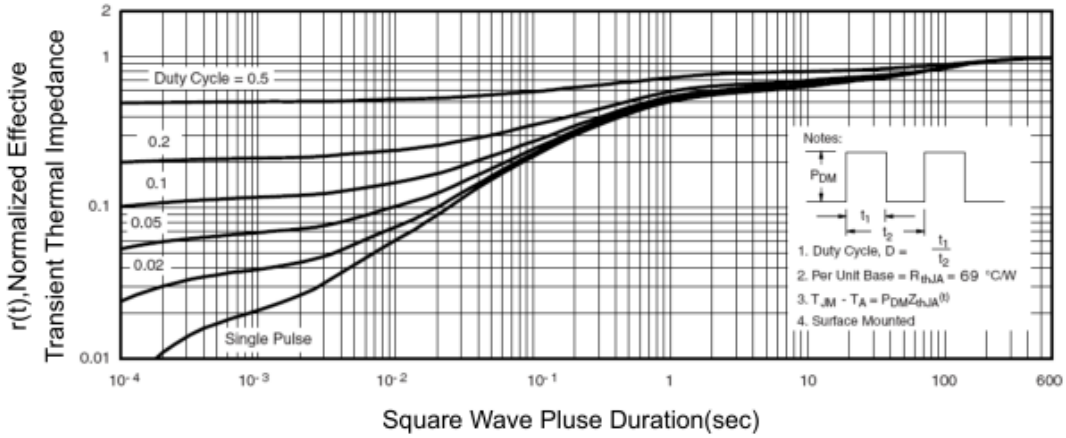
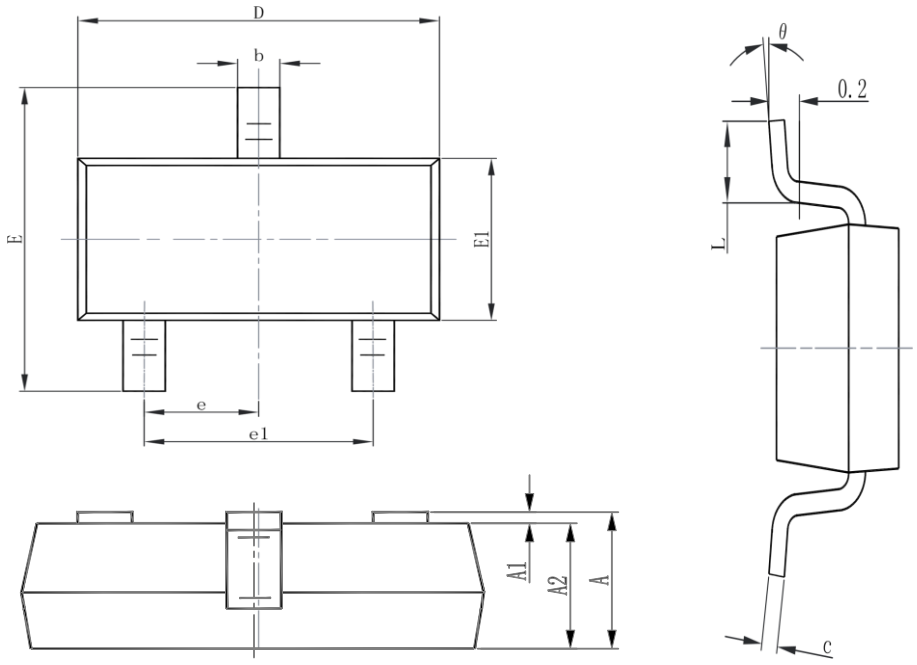


Figure 12 Normalized Maximum Transient Thermal Impedance

Package Outline Dimensions Millimeters

SOT23-3L



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°