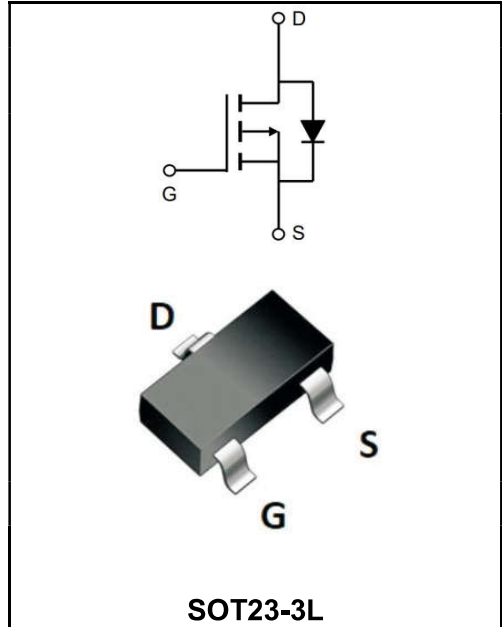


-12V P-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

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



Application

- ◆electronic cigarette
- ◆Load switch

Product Specification Classification

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

Maximum Ratings at T_c=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°C	I_D	-7.0	A
Continuous Drain Current, V _{GS} @ 10V ¹ @T _C =100°C	I_D	-3.6	A
Pulsed Drain Current ^{note1}	I_{DM}	-22	A
Power Dissipation @T _C =25°C	P_D	1.6	W
Thermal Resistance Junction-Ambient	R_{θJA}	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	$V_{GS}=0V, I_D=-250\mu A$	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	$V_{GS}=\pm 12V, V_{DS}=0V$	I_{GSS}	-	-	±100	nA
Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	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	$V_{DD}=-4V$ $I_D=-3.3A$ $R_G=1.0\Omega$ $V_{GEN}=-4.5V$ $R_L=1.2\Omega$	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	$I_S=-4.1A, dI/dt=100A/\mu s,$ $V_{GS}=0V$	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 $\cong 300\mu s$, duty cycle $\cong 2\%$
- 3、 The power dissipation is limited by 150°C 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

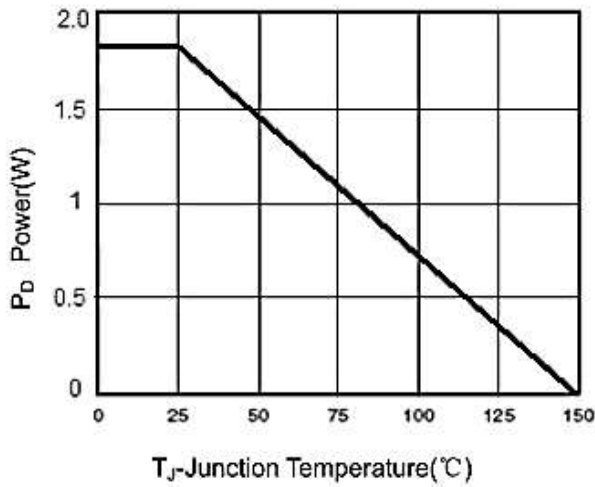


Figure 1 Power Dissipation

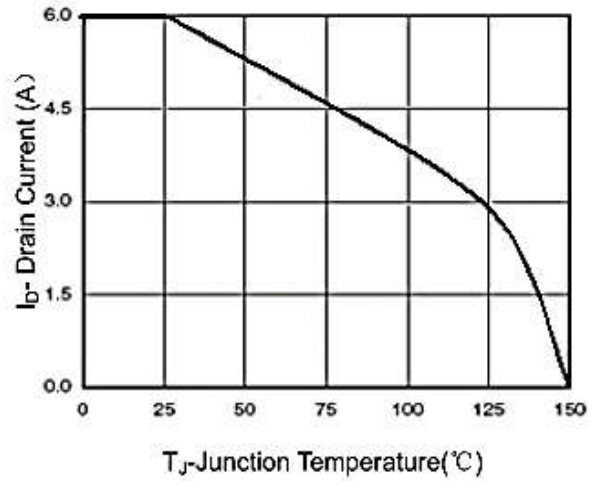


Figure 2 Drain Current

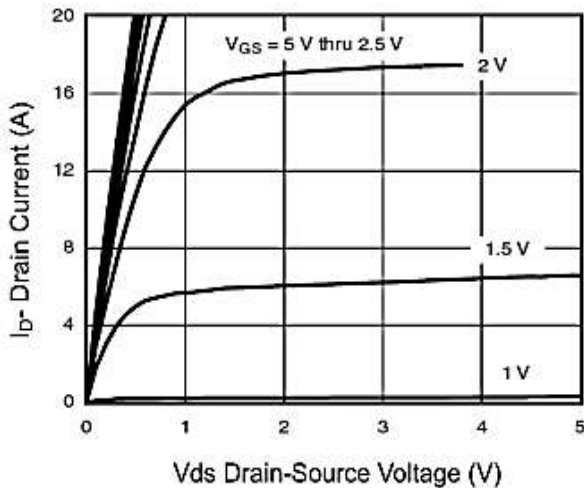


Figure 3 Output Characteristics

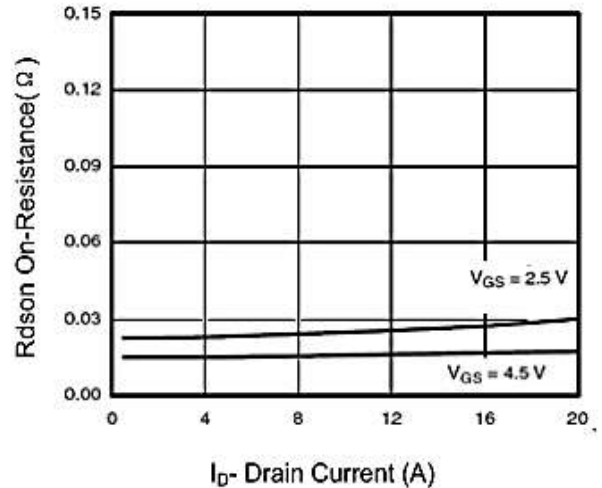


Figure 4 Drain-Source On-Resistance

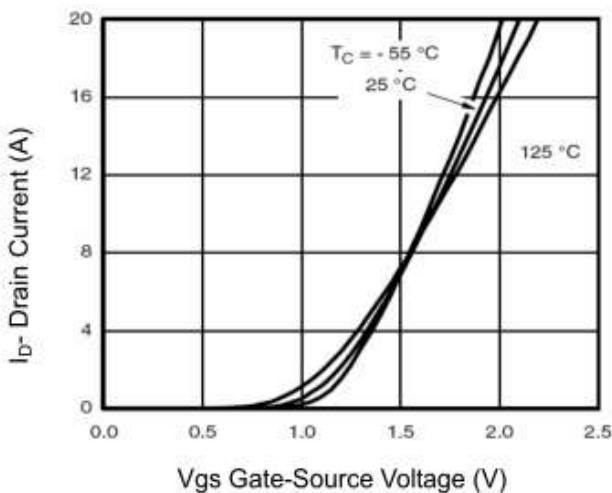


Figure 5 Transfer Characteristics

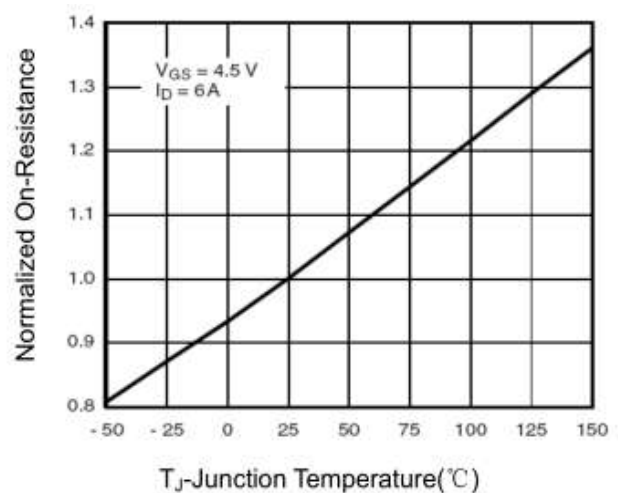
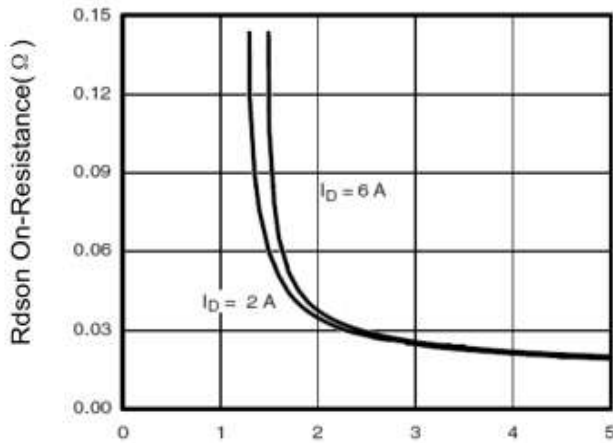
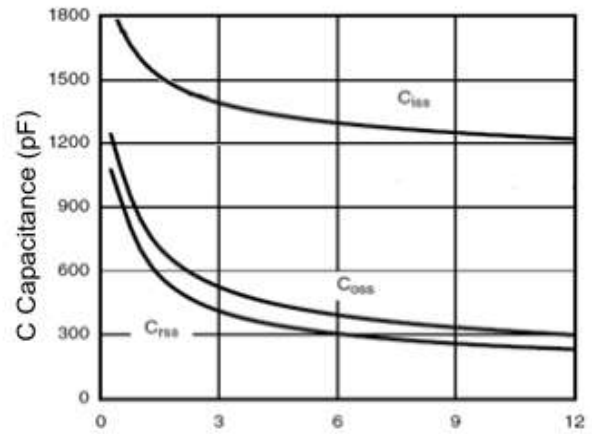


Figure 6 Drain-Source On-Resistance

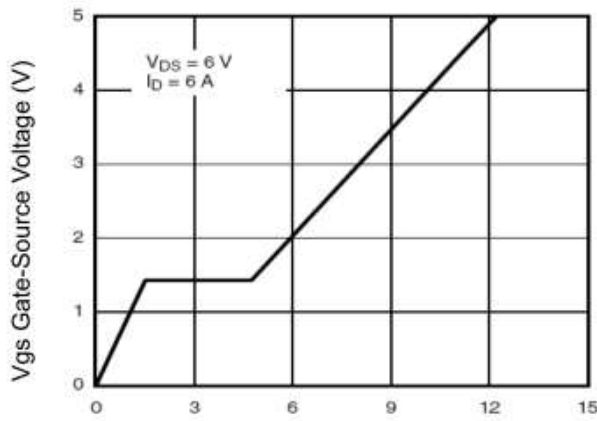
Ratings and Characteristic Curves



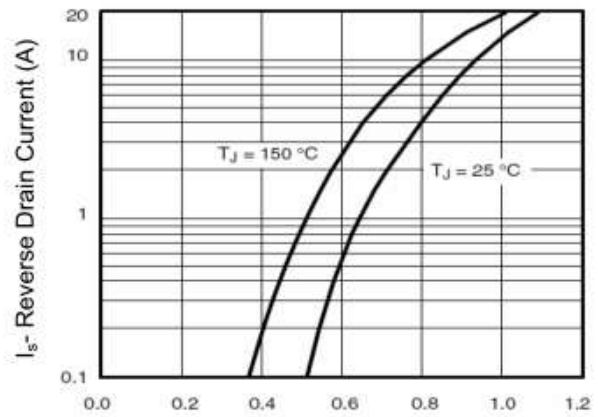
Vgs Gate-Source Voltage (V)
Figure 7 Rdson vs Vgs



Vds Drain-Source Voltage (V)
Figure 8 Capacitance vs Vds



Qg Gate Charge (nC)
Figure 9 Gate Charge



Vsd Source-Drain Voltage (V)
Figure 10 Source-Drain Diode Forward

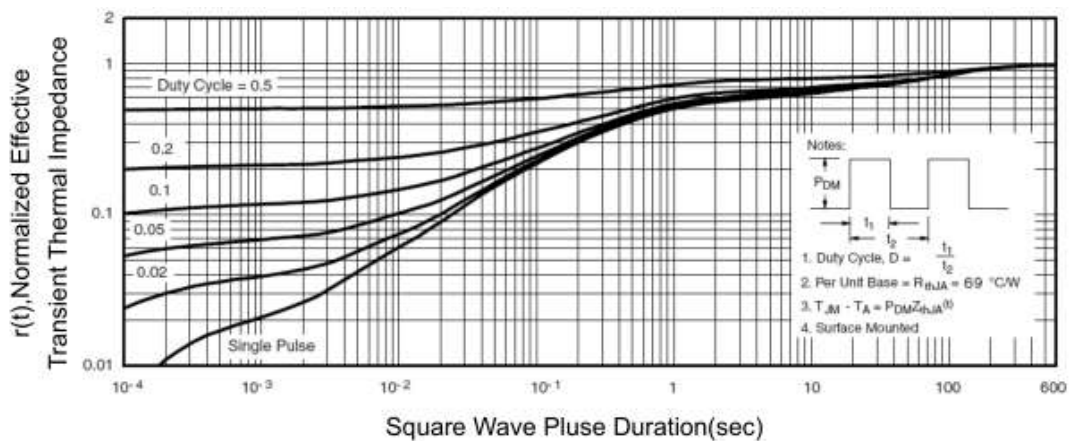
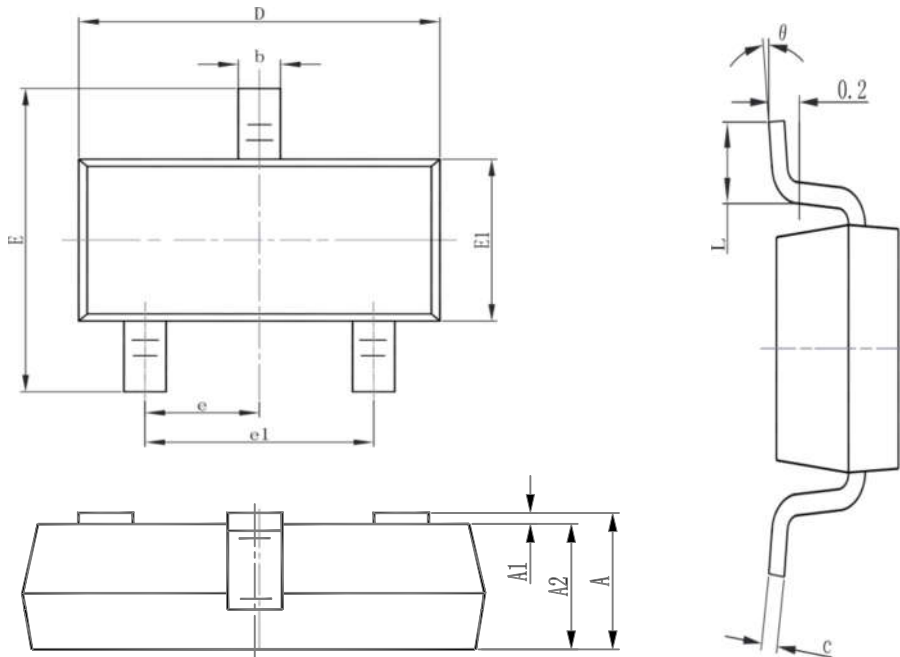


Figure 12 Normalized Maximum Transient Thermal Impedance

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°