

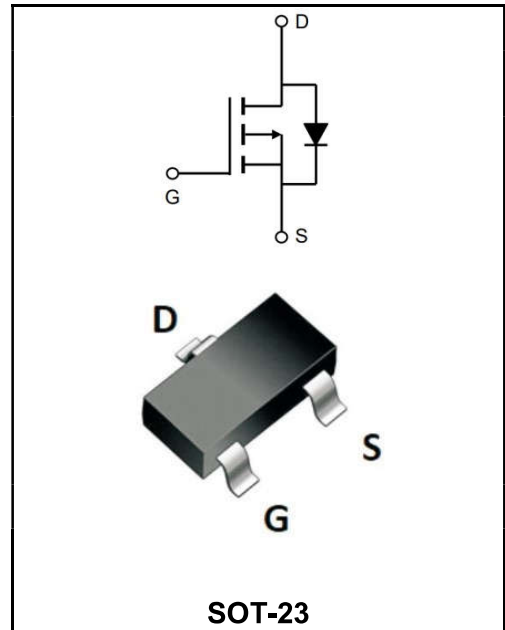
-30V P-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	-4.8A
V_{DSS}	-30V
R_{DS(on)-typ(@V_{GS}=10V)}	< 55mΩ (Type:40 mΩ)

Application

- ◆ Battery protection
- ◆ Load switch
- ◆ Uninterruptible power supply



Product Specification Classification

Part Number	Package	Marking	Pack
YFW3407A	SOT-23	3407	3000PCS/Tape

Maximum Ratings at T_c=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V _{DS}	-30	V
Gate - Source Voltage	V _{GS}	±20	V
Continuous Drain Current, V _{GS} @ -10V ¹ @T _C =25°C	I _D	-4.8	A
Continuous Drain Current, V _{GS} @ -10V ¹ @T _C =100°C	I _D	-3.3	A
Pulsed Drain Current ^{note1}	I _{DM}	-20.4	A
Power Dissipation T _A =25°C	P _D	2.15	W
Thermal Resistance Junction-Ambient	R _{θJA}	104	°C/W
Thermal Resistance from Junction to Ambient ²	R _{θJC}	125	°C/W
Operating and Storage 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	-30	-	-	V
Zero Gate Voltage Drain Current	$V_{DS}=-30V, V_{GS}=0V$	I_{DSS}	-	-	1	μA
Gate Source Leakage	$V_{GS}=\pm 20V, V_{DS}=0V$	I_{GSS}	-	-	±100	nA
Gate-Source Threshold voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	V_{GS(th)}	-1	-1.5	-2.5	V
Drain-Source on-State Resistance ³	$V_{GS}=-10V, I_D=-4.1A$	R_{DS(ON)}	-	40	55	mΩ
	$V_{GS}=-4.5V, I_D=-3A$		-	54	65	
Input Capacitance	$V_{DS}=-15V$ $V_{GS}=0V$ $f=1MHz$	C_{iss}	-	530	-	pF
Output Capacitance		C_{oss}	-	70	-	
Reverse Transfer Capacitance		C_{rss}	-	56	-	
Total Gate Charge	$V_{DS}=-15V$ $V_{GS}=-10V$ $I_D=-4.1A$	Q_g	-	6.8	-	nC
Gate-Source Charge		Q_{gs}	-	1.0	-	
Gate-Drain Charge		Q_{gd}	-	1.4	-	
Turn-on delay time	$V_{DD}=-15V$ $V_{GS}=-10V$ $R_L=15\Omega$ $R_{GEN}=2.5\Omega$	t_{d(on)}	-	14	-	ns
Rise Time		T_r	-	61	-	
Turn-Off Delay Time		t_{d(OFF)}	-	19	-	
Fall Time		t_f	-	10	-	
Diode Forward Voltage ³	$I_S = -4.1A, V_{GS} = 0V$	V_{SD}	-	-	-1.1	A
Continuous Source Current		I_S	-	-	-4.1	A

Note :

- 1、 The data tested by surface mounted on a 1 inch 2 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

Typical Characteristics

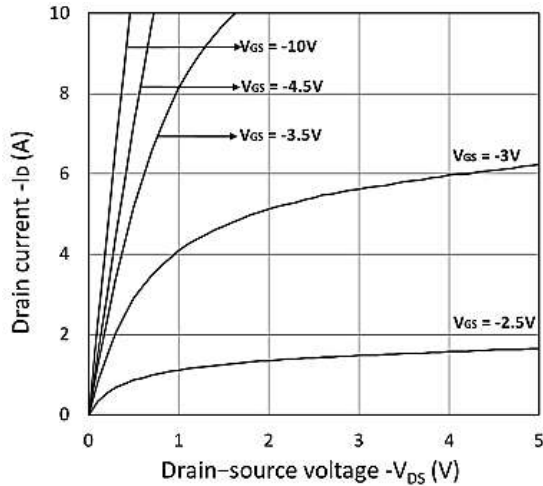


Figure 1. Output Characteristics

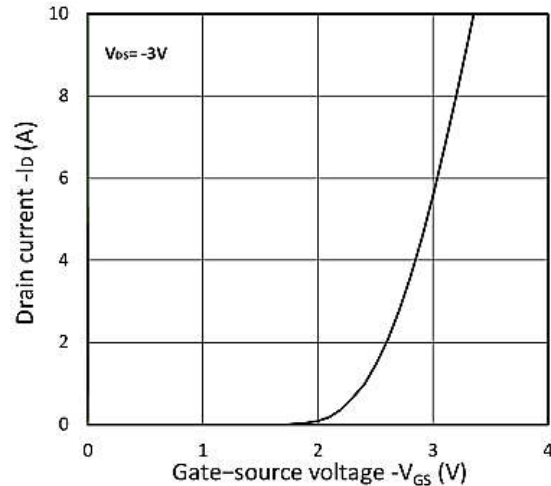


Figure 2. Transfer Characteristics

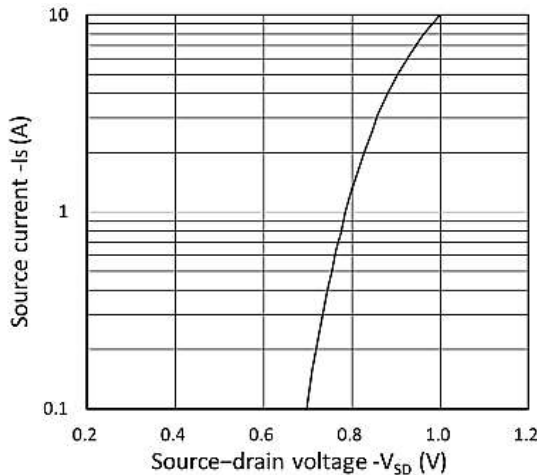


Figure 3. Forward Characteristics of Reverse

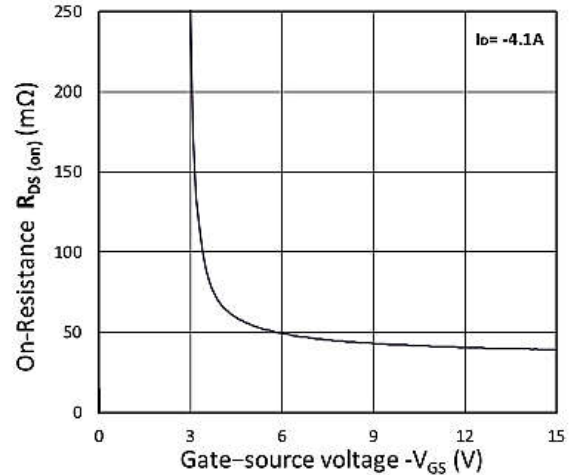


Figure 4. $R_{DS(ON)}$ vs. V_{GS}

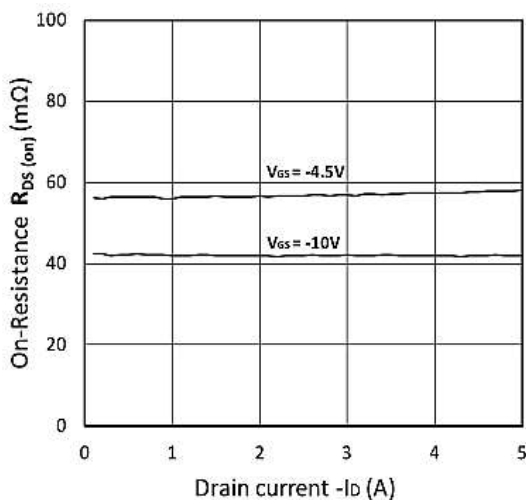


Figure 5. $R_{DS(ON)}$ vs. I_D

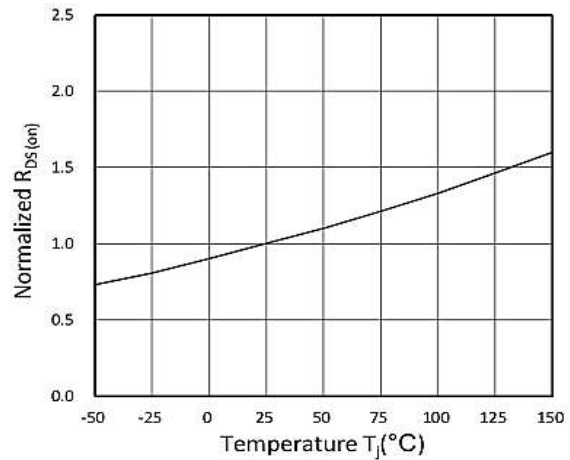


Figure 6. Normalized $R_{DS(on)}$ vs. Temperature

Ratings and Characteristic Curves

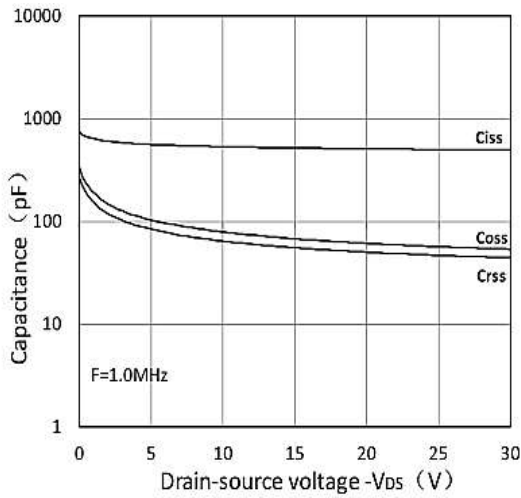


Figure 7. Capacitance Characteristics

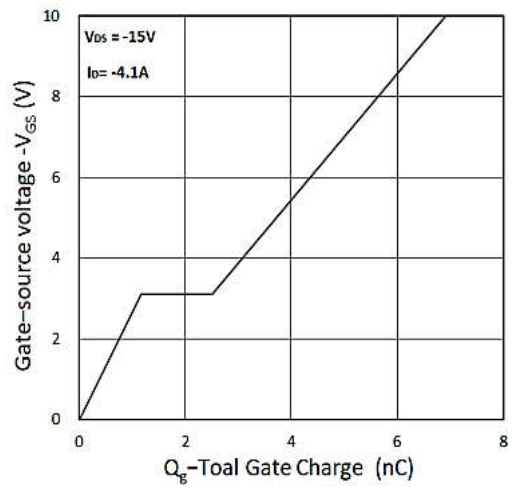


Figure 8. Gate Charge Characteristics

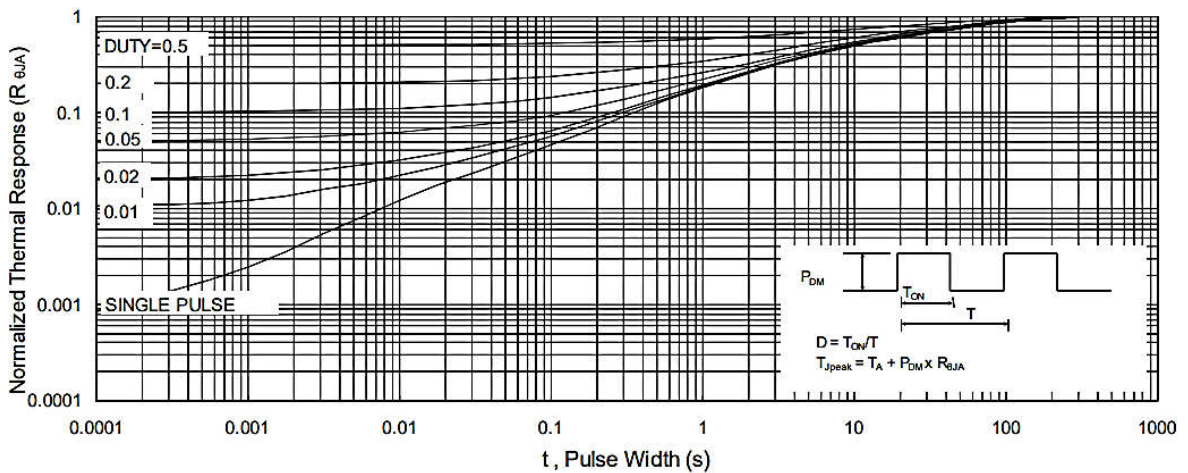


Figure 9 Normalized Maximum Transient Thermal Impedance

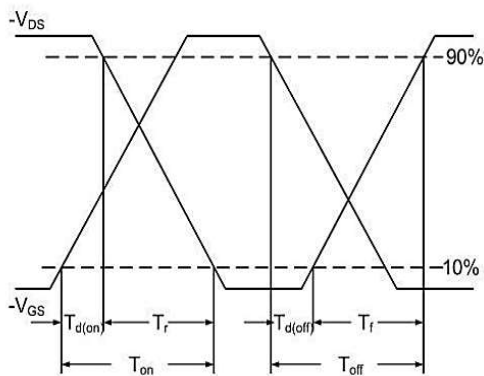


Figure.10 Switching Time Waveform

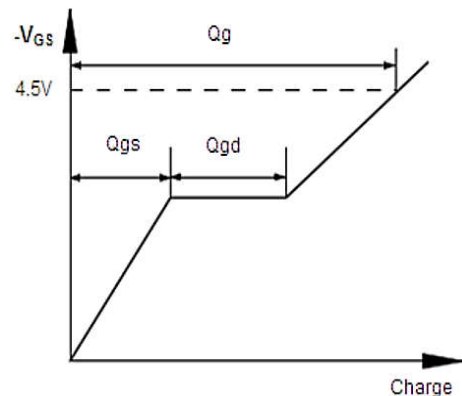
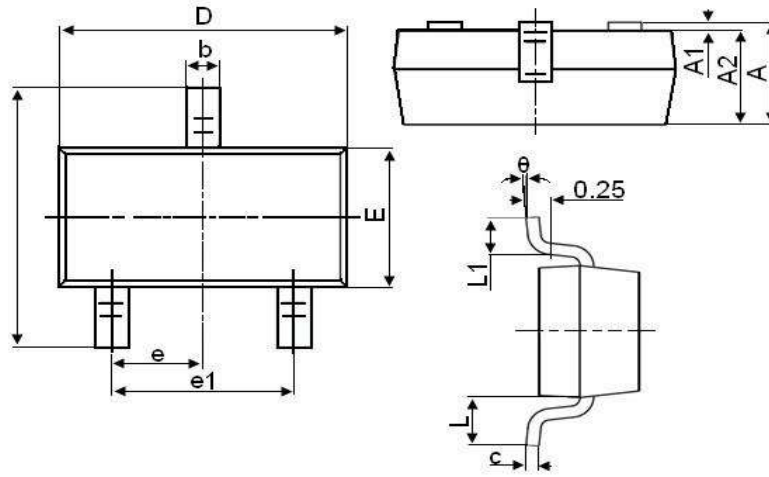


Figure.11 Gate Charge Waveform

SOT-23



Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°