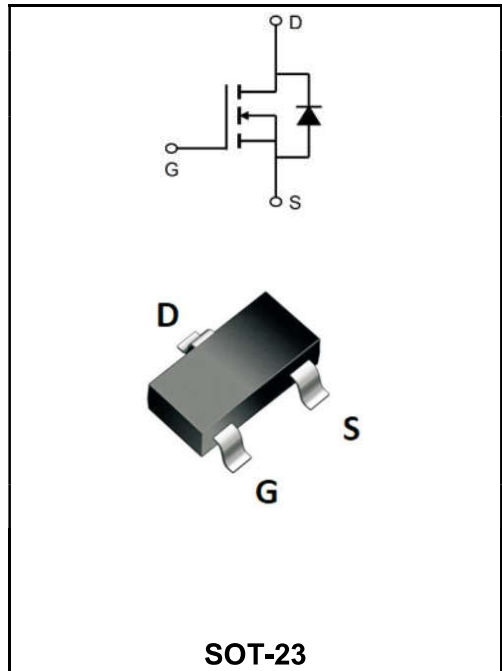


20V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	2.3A
V_{DSS}	20V
R_{DS(on)-typ(@V_{GS}=4.5V)}	< 65mΩ (Type:55 mΩ)



Application

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

Product Specification Classification

Part Number	Package	Marking	Pack
YFW2302	SOT-23	A2SHB	3000PCS/Tape

Maximum Ratings at T_c=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V _{DS}	20	V
Gate - Source Voltage	V _{GS}	±12	V
Continuous Drain Current @T _A =25°C	I _D	2.3	A
Pulsed Drain Current	I _{DM}	6.9	A
Power Dissipation T _A = 25°C	P _D	0.77	W
Thermal Resistance, Junction to Case	R _{θJA}	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	20	22	-	V
Zero Gate Voltage Drain Current	$V_{DS}=20V, V_{GS}=0V$	I_{DSS}	-	-	1.0	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	1.2	V
Static Drain-Source On-Resistance note2	$V_{GS}=4.5V, I_D=3A$	R_{DS(ON)}	-	55	65	mΩ
	$V_{GS}=2.5V, I_D=2A$		-	75	90	
Input Capacitance	$V_{DS}=10V$ $V_{GS}=0V$ $f=1.0MHz$	C_{iss}	-	150	-	pF
Output Capacitance		C_{oss}	-	34	-	
Reverse Transfer Capacitance		C_{rss}	-	26	-	
Total Gate Charge	$V_{GS}=4.5V$ $V_{DS}=10V$ $I_D=3A$	Q_g	-	2.4	-	nC
Gate-Source Charge		Q_{gs}	-	0.88	-	
Gate-Drain("Miller") Charge		Q_{gd}	-	0.77	-	
Turn-on delay time	$V_{DS}=10V$ $I_D=3A$ $R_{GEN}=3\Omega$ $V_{GS}=4.5V$	t_{d(on)}	-	6.8	-	ns
Turn-on Rise Time		T_r	-	57	-	
Turn-Off Delay Time		t_{d(OFF)}	-	14	-	
Turn-Off Fall Time		t_f	-	53	-	
Maximum Body-Diode Continuous Current		I_S	-	-	2.3	A
Maximum Pulsed Drain to Source Diode Forward Current		I_{SM}	-	-	6.8	A
Drain to Source Diode Forward Voltage	$V_{GS}=0V, I_S=3A$	V_{SD}	-	-	1.3	V

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 300us , 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

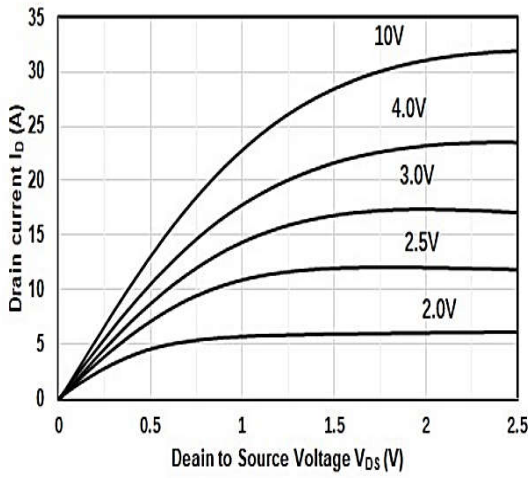


Figure1. Output Characteristics

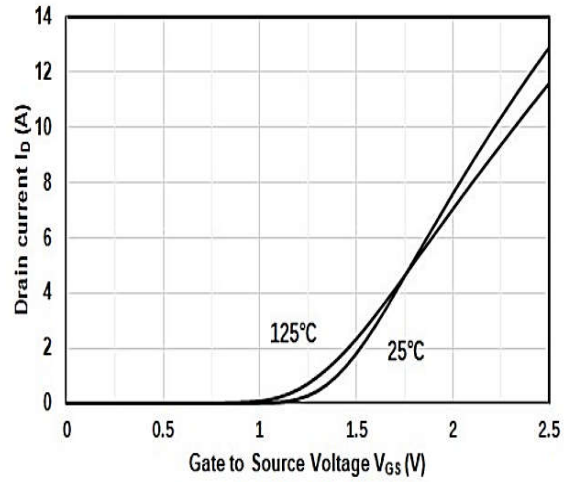


Figure2. Transfer Characteristics

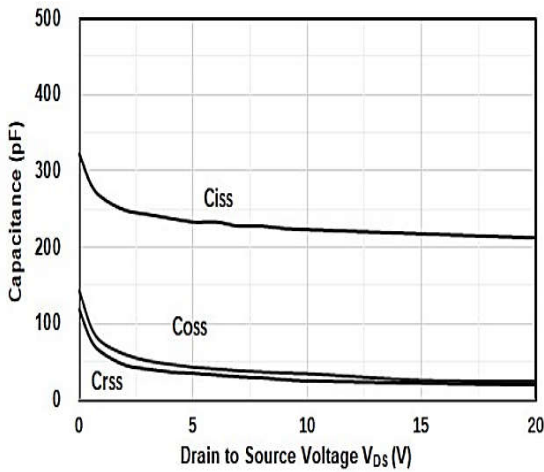


Figure3. Capacitance Characteristics

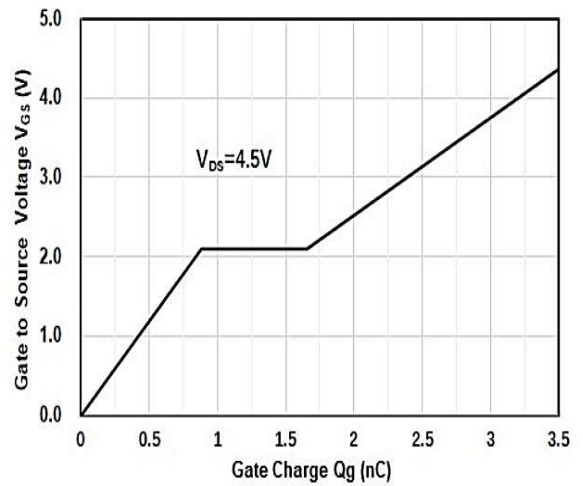


Figure4. Gate Charge

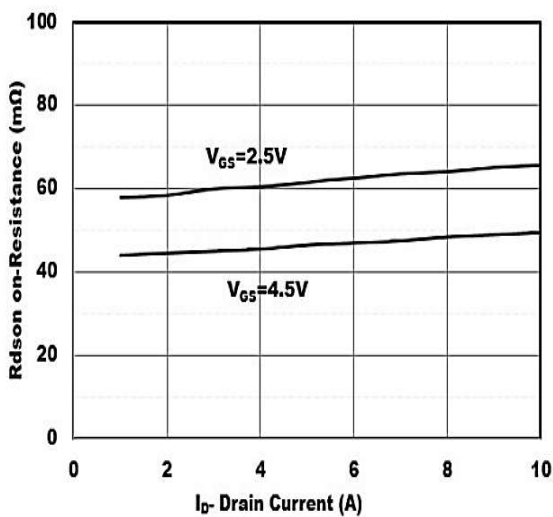


Figure5. Drain-Source on Resistance

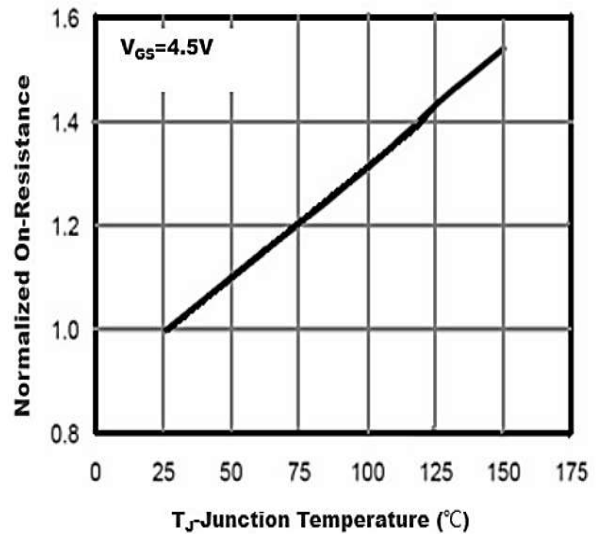
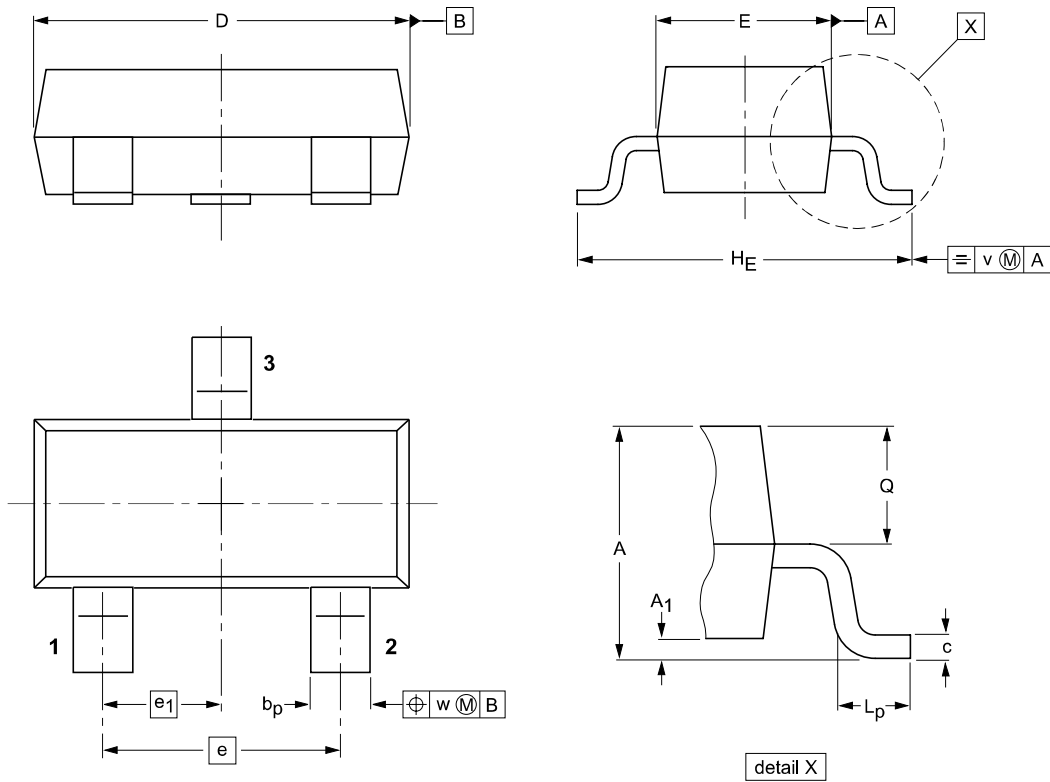


Figure6. Drain-Source on Resistance

Package Outline

SOT-23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max.	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

Summary of Packing Options

Package	Packing Description	Packing Quantity	Industry Standard
SOT-23	Tape/Reel, 7" reel	3000	EIA-481-1