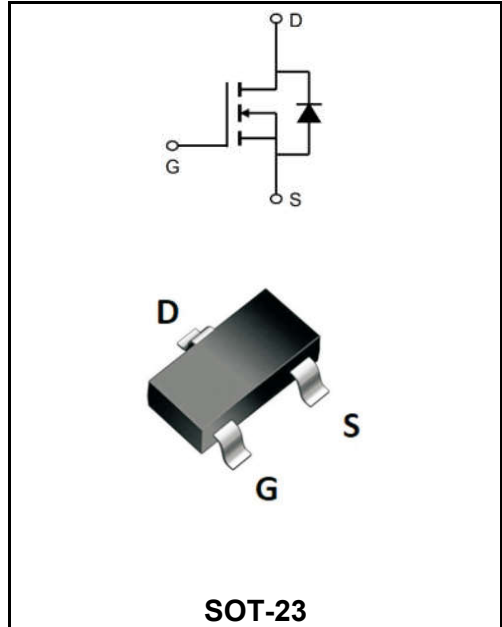


**20V N-CHANNEL ENHANCEMENT MODE MOSFET**

**MAIN CHARACTERISTICS**

<b>I<sub>D</sub></b>	2.3A
<b>V<sub>DSS</sub></b>	20V
<b>R<sub>DS(on)-typ(@V<sub>GS</sub>=4.5V)</sub></b>	< 56mΩ ( <b>Type:43 mΩ</b> )



**Application**

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

**Product Specification Classification**

Part Number	Package	Marking	Pack
YFW2300B	SOT-23	2300.	3000PCS/Tape
YFW2300B	SOT-23	A2SHB	3000PCS/Tape

**Maximum Ratings at Tc=25°C unless otherwise specified**

Characteristics	Symbols	Value	Units
Drain-Source Voltage	<b>V<sub>DS</sub></b>	20	<b>V</b>
Gate - Source Voltage	<b>V<sub>GS</sub></b>	±12	<b>V</b>
Continuous Drain Current, V <sub>GS</sub> @ 4.5V @T <sub>A</sub> =25°C	<b>I<sub>D</sub></b>	2.3	<b>A</b>
Continuous Drain Current, V <sub>GS</sub> @ 4.5V @T <sub>A</sub> =70°C	<b>I<sub>D</sub></b>	1.8	<b>A</b>
Pulsed Drain Current <sup>A</sup>	<b>I<sub>DM</sub></b>	14	<b>A</b>
Total Power Dissipation <sup>3</sup> @T <sub>A</sub> =25°C	<b>P<sub>D</sub></b>	0.7	<b>W</b>
Thermal Resistance Junction-to-Ambient @Steady State	<b>R<sub>θJA</sub></b>	178	<b>°C/W</b>
Operating Junction Temperature Range	<b>T<sub>J</sub>, T<sub>STG</sub></b>	-55 to +150	<b>°C</b>

**Maximum Ratings at Tc=25°C unless otherwise specified**

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	$BV_{DSS}$	20	21	-	V
Zero Gate Voltage Drain Current	$V_{DS}=20V, V_{GS}=0V, T_J=25^\circ C$	$I_{DSS}$	-	-	1	$\mu A$
Gate-Body Leakage Current	$V_{GS}=\pm 12V, V_{DS}=0V$	$I_{GSS}$	-	-	$\pm 100$	nA
Gate -Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{GS(th)}$	0.52	0.66	0.9	V
Static Drain-Source On-Resistance	$V_{GS}=4.5V, I_D=2.0A$	$R_{DS(on)}$	-	43	56	m $\Omega$
	$V_{GS}=2.5V, I_D=1.5A$		-	58	78	
Input Capacitance	$V_{DS}=10V$ $V_{GS}=0V$ $f=1.0MHz$	$C_{iss}$	-	280	-	$\mu F$
Output Capacitance		$C_{oss}$	-	46	-	
Reverse Transfer Capacitance		$C_{rss}$	-	29	-	
Total Gate Charge	$V_{GS}=4.5V$ $V_{DS}=10V$ $I_D=3.0A$	$Q_g$	-	2.9	-	nC
Gate-Source Charge		$Q_{gs}$	-	0.4	-	
Gate-Drain Charge		$Q_{gd}$	-	0.6	-	
Turn-on delay time	$V_{GS}=4.5V$ $V_{DD}=10V$ $R_L=1.5\Omega$ $R_{GEN}=3\Omega$	$t_{d(on)}$	-	13	-	ns
Turn-on Rise Time		$T_r$	-	54	-	
Turn-Off Delay Time		$t_{d(OFF)}$	-	18	-	
Turn-Off Fall Time		$t_f$	-	11	-	
Maximum Body-Diode Continuous Current		$I_S$	-	-	3.0	A
Diode Forward Voltage	$V_{GS}=0V, I_S=3.0A$	$V_{SD}$	-	-	1.2	V

Note:

- 1、Pulse Test: Pulse Width $\leq 300\mu s$ , Duty cycle  $\leq 2\%$ .
- 2、Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

Ratings and Characteristic Curves

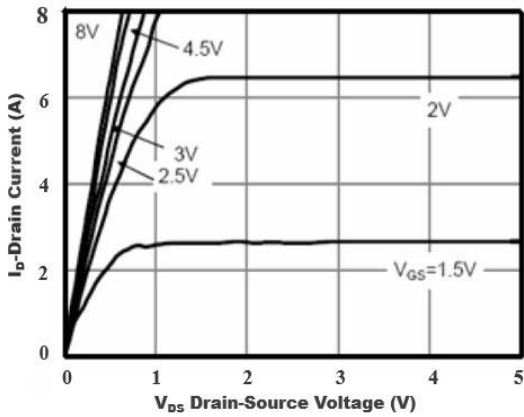


Figure1. Output Characteristics

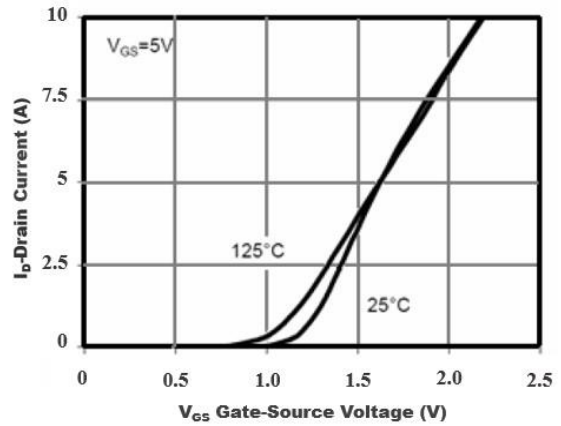


Figure2. Transfer Characteristics

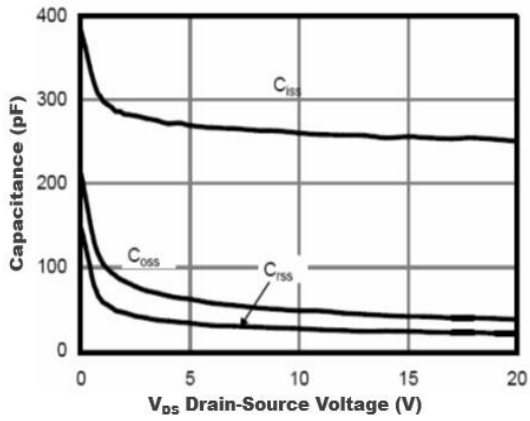


Figure3. Capacitance Characteristics

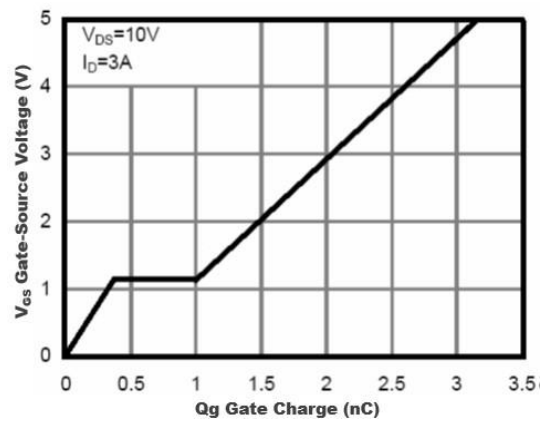


Figure4. Gate Charge

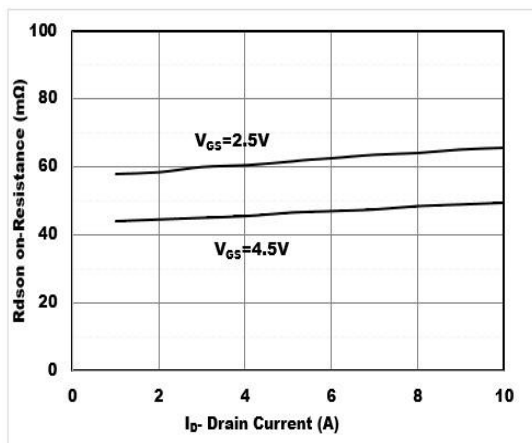


Figure5. Drain-Source on Resistance

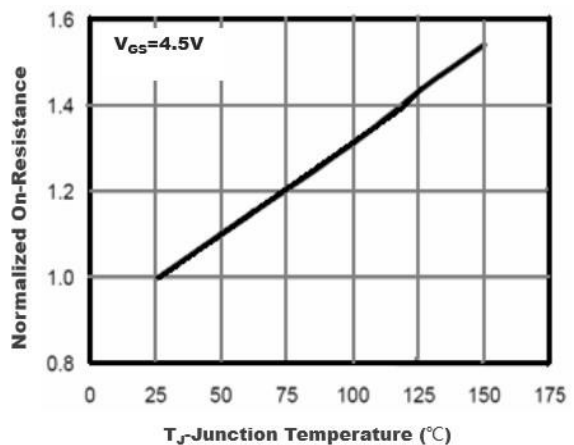


Figure6. Drain-Source on Resistance

Ratings and Characteristic Curves

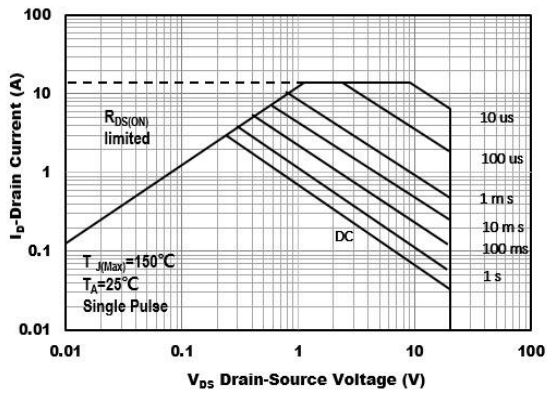


Figure7. Safe Operation Area

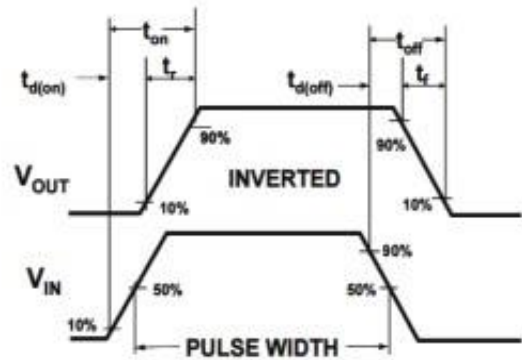
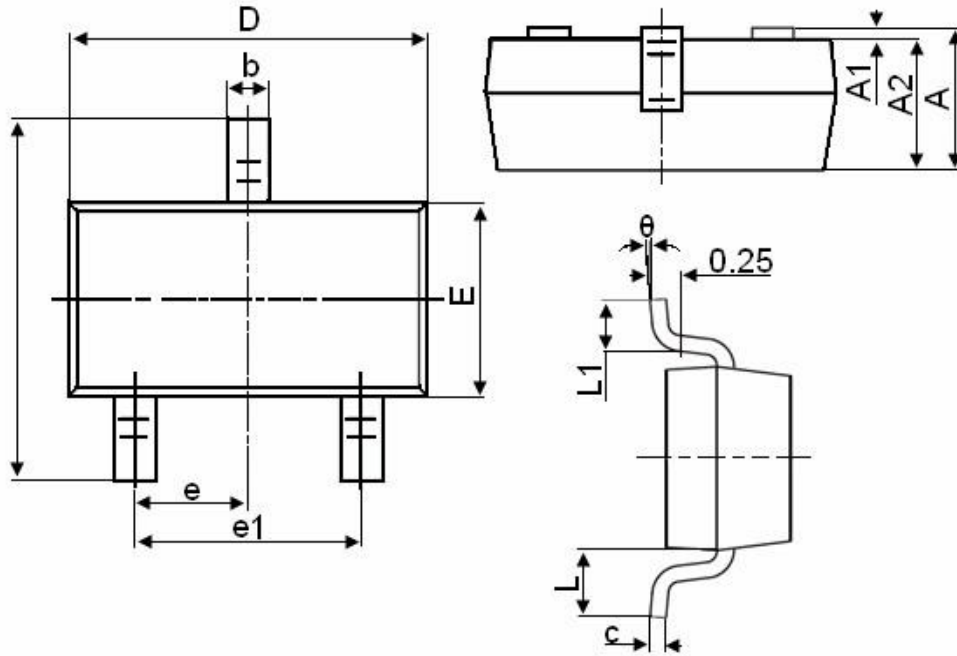


Figure8. Switching wave

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°