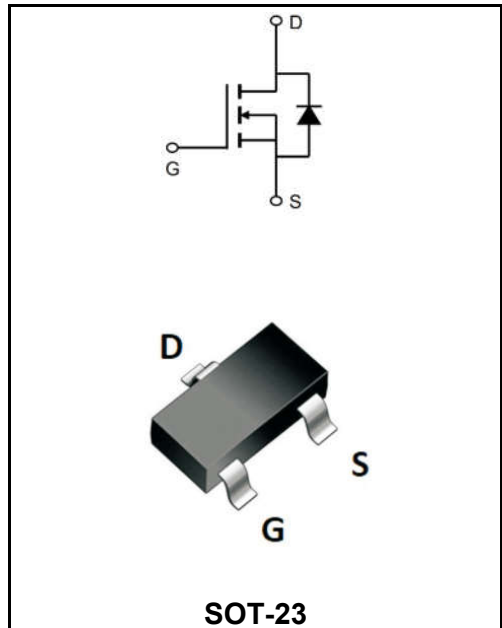


**30V N-CHANNEL ENHANCEMENT MODE MOSFET**

**MAIN CHARACTERISTICS**

<b>I<sub>D</sub></b>	5.8A
<b>V<sub>DSS</sub></b>	30V
<b>R<sub>DS(on)-typ(@V<sub>GS</sub>=10V)</sub></b>	< 28mΩ <b>(Type:26 mΩ)</b>



**Application**

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

**Product Specification Classification**

Part Number	Package	Marking	Pack
YFW3400B	SOT-23	A09T.	3000PCS/Tape

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

Characteristics	Symbols	Value	Units
Drain-Source Voltage	<b>V<sub>DS</sub></b>	30	<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 <sup>1</sup> @T <sub>A</sub> =25°C	<b>I<sub>D</sub></b>	5.8	<b>A</b>
Continuous Drain Current, V <sub>GS</sub> @ 4.5V <sup>1</sup> @T <sub>A</sub> =70°C	<b>I<sub>D</sub></b>	3.1	<b>A</b>
Pulsed Drain Current <sup>2</sup>	<b>I<sub>DM</sub></b>	16	<b>A</b>
Total Power Dissipation <sup>3</sup> @T <sub>A</sub> =25°C	<b>P<sub>D</sub></b>	1	<b>W</b>
Storage Temperature Range	<b>T<sub>STG</sub></b>	-55 to +150	<b>°C</b>
Operating Junction Temperature Range	<b>T<sub>J</sub></b>	-55 to +150	<b>°C</b>
Thermal Resistance Junction-ambient <sup>1</sup>	<b>R<sub>θJA</sub></b>	125	<b>°C/W</b>
Thermal Resistance Junction-Case <sup>1</sup>	<b>R<sub>θJC</sub></b>	80	<b>°C/W</b>

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

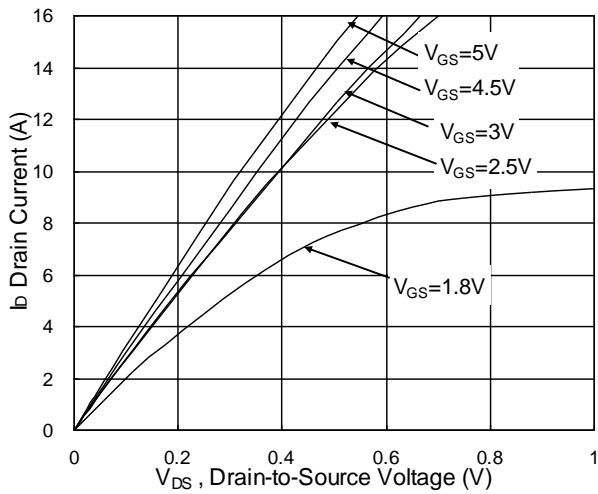
Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	$BV_{DSS}$	30	32	-	V
BVDSS Temperature Coefficient	Reference to 25°C, $I_D=1mA$	$\Delta BV_{DSS}/\Delta T_J$	-	0.029	-	V/°C
Static Drain-Source On-Resistance <sup>2</sup>	$V_{GS}=10V, I_D=4A$	$R_{DS(ON)}$	-	26	28	mΩ
	$V_{GS}=4.5V, I_D=3A$		-	29	32	
	$V_{GS}=2.5V, I_D=2A$		-	38	47	
Gate -Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{GS(th)}$	0.5	0.95	1.2	V
$V_{GS(th)}$ Temperature Coefficient		$\Delta V_{GS(th)}$	-	-2.82	-	mV/°C
Drain-Source Leakage Current	$V_{DS}=24V, V_{GS}=0V, T_J=25^\circ C$	$I_{DSS}$	-	-	1	μA
	$V_{DS}=24V, V_{GS}=0V, T_J=55^\circ C$		-	-	5	
Gate -Source Leakage Current	$V_{GS}=\pm 12V, V_{DS}=0V$	$I_{GSS}$	-	-	±100	nA
Forward Transconductance	$V_{DS}=5V, I_D=3A$	$g_{fs}$	-	19	-	S
Gate Resistance	$V_{DS}=0V, V_{GS}=0V, f=1MHz$	$R_g$	-	1.5	3	Ω
Total Gate Charge(4.5V)	$V_{DS}=15V$ $V_{GS}=4.5V$ $I_D=3A$	$Q_g$	-	8.34	11.7	nC
Gate-Source Charge		$Q_{gs}$	-	1.26	1.8	
Gate-Drain Charge		$Q_{gd}$	-	1.88	2.6	
Turn-on delay time	$V_{DD}=15V$ $V_{GS}=4.5V$ $R_G=3.3\Omega$ $I_D=3A$	$t_{d(on)}$	-	3.2	6.4	ns
Rise Time		$T_r$	-	41.8	75	
Turn-Off Delay Time		$t_{d(OFF)}$	-	21.2	42	
Fall Time		$t_f$	-	6.4	12.8	
Input Capacitance	$V_{DS}=15V$ $V_{GS}=0V$ $f=1.0MHz$	$C_{iss}$	-	662	927	pF
Output Capacitance		$C_{oss}$	-	51.3	72	
Reverse Transfer Capacitance		$C_{rss}$	-	43.6	61	
Continuous Source Current <sup>1,4</sup>	$V_G=V_D=0V$ , Force Current	$I_S$	-	-	3.9	A
Pulsed Source Current <sup>2,4</sup>	$V_{GS}=0V, I_S=1A, T_J=25^\circ C$	$I_{SM}$	-	-	16	A
Diode Forward Voltage <sup>2</sup>		$V_{SD}$	-	-	1.2	V
Reverse Recovery Time	$I_f=3A, di/dt=100A/\mu s,$ $T_J=25^\circ C$	$t_{rr}$	-	6.8	-	ns
Reverse Recovery Charge		$Q_{rr}$	-	2.3	-	nC

Note :

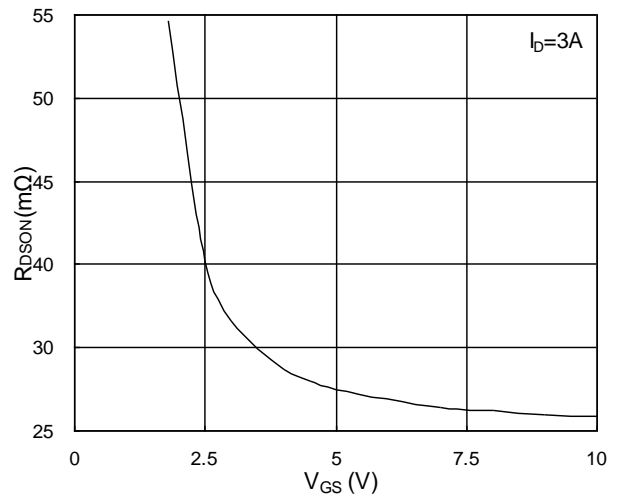
- 1、 The data tested by surface mounted on a 1 inch2 FR-4 board with 20Z copper.
- 2、 The data tested by pulsed , pulse width  $\cong 300\mu s$  , duty cycle  $\cong 2\%$
- 3、 The power dissipation is limited by 150°C junction temperature
- 4、 The data is theoretically the same as ID and IDM , in real applications , should be limited by total power dissipation.

**Ratings and Characteristic Curves**

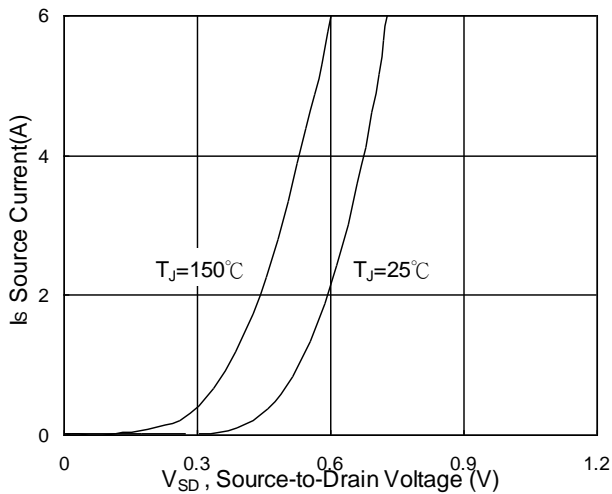
**Typical Characteristics**



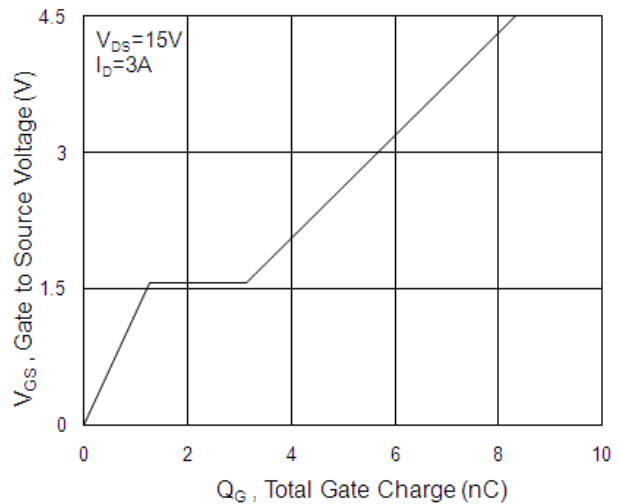
**Fig.1 Typical Output Characteristics**



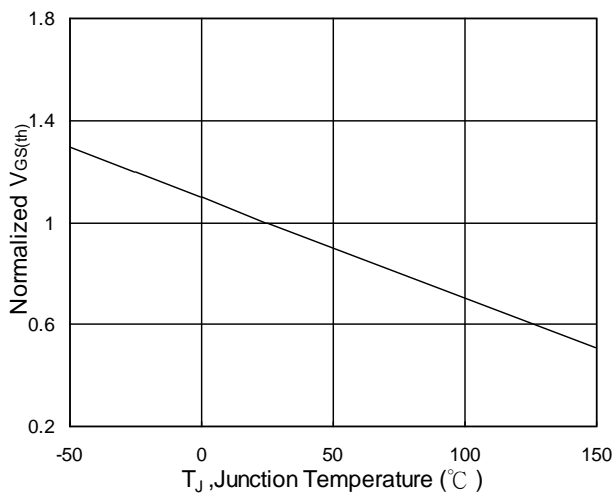
**Fig.2 On-Resistance vs G-S Voltage**



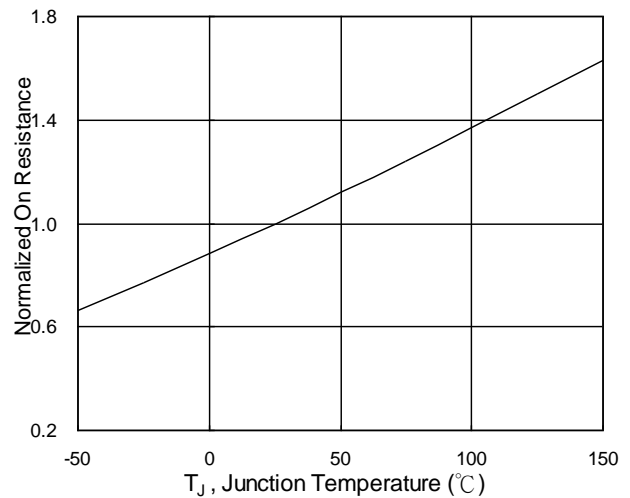
**Fig.3 Source Drain Forward Characteristics**



**Fig.4 Gate-Charge Characteristics**

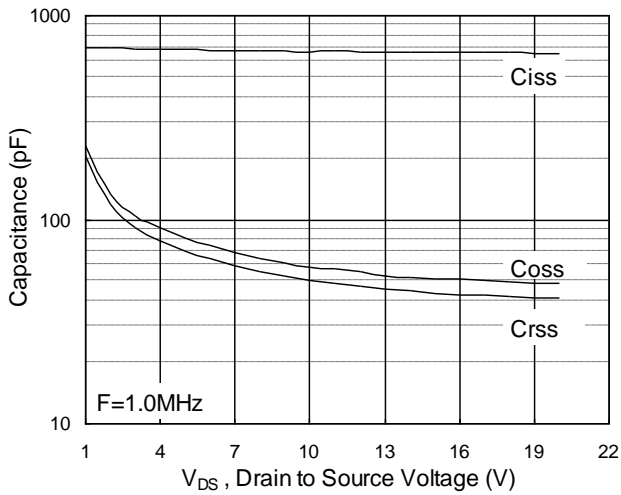


**Fig.5 Normalized V<sub>GS(th)</sub> vs T<sub>J</sub>**

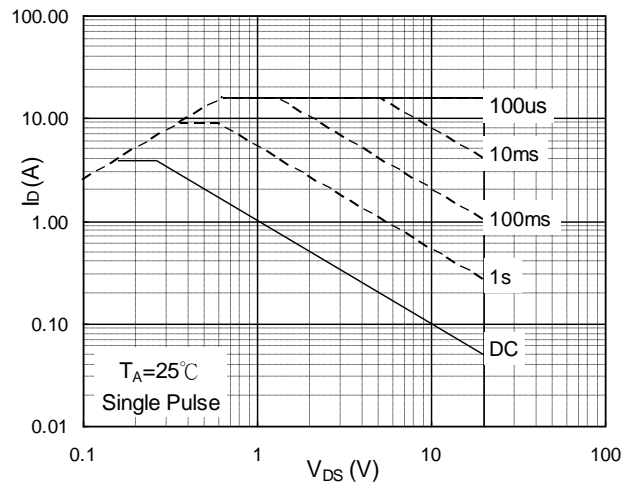


**Fig.6 Normalized R<sub>DS(on)</sub> vs T<sub>J</sub>**

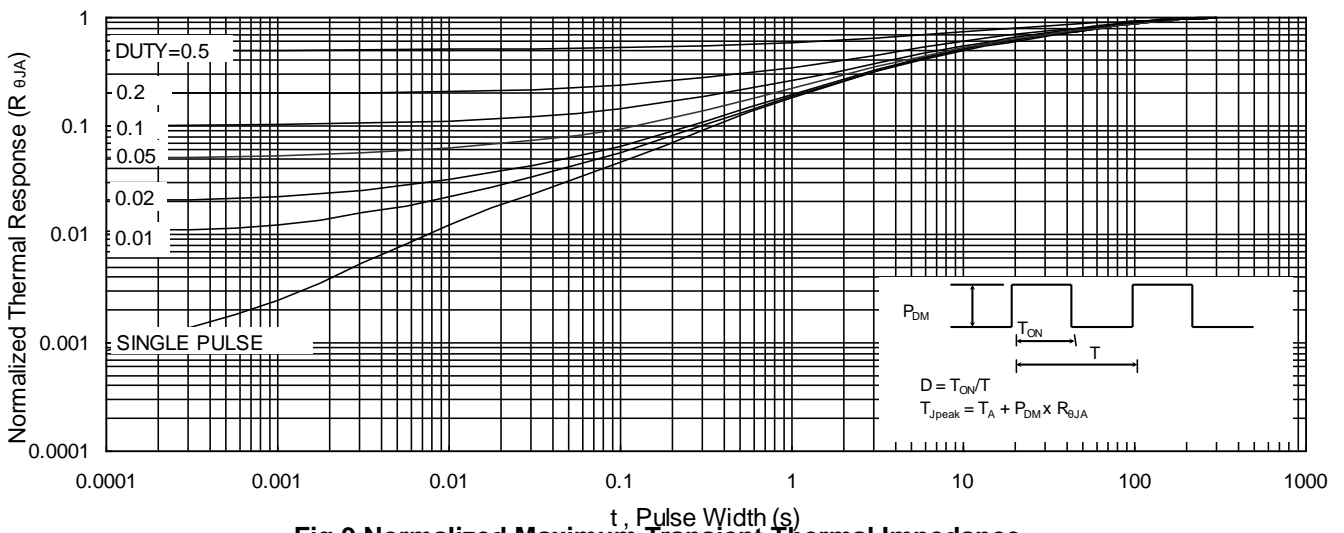
**Ratings and Characteristic Curves**



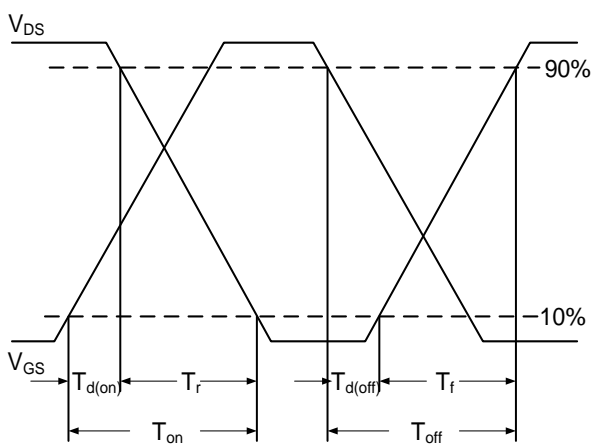
**Fig.7 Capacitance**



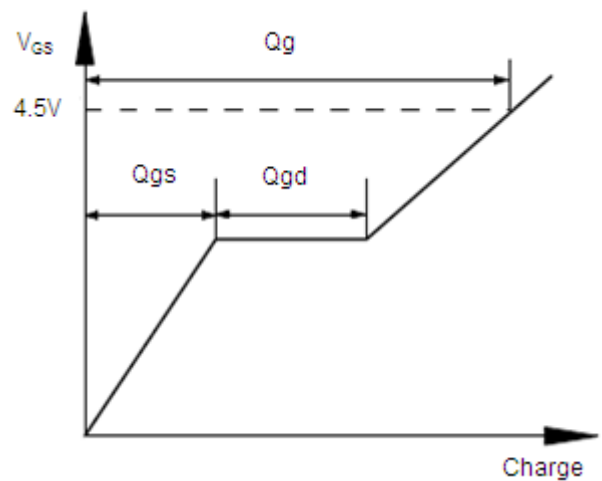
**Fig.8 Safe Operating Area**



**Fig.9 Normalized Maximum Transient Thermal Impedance**

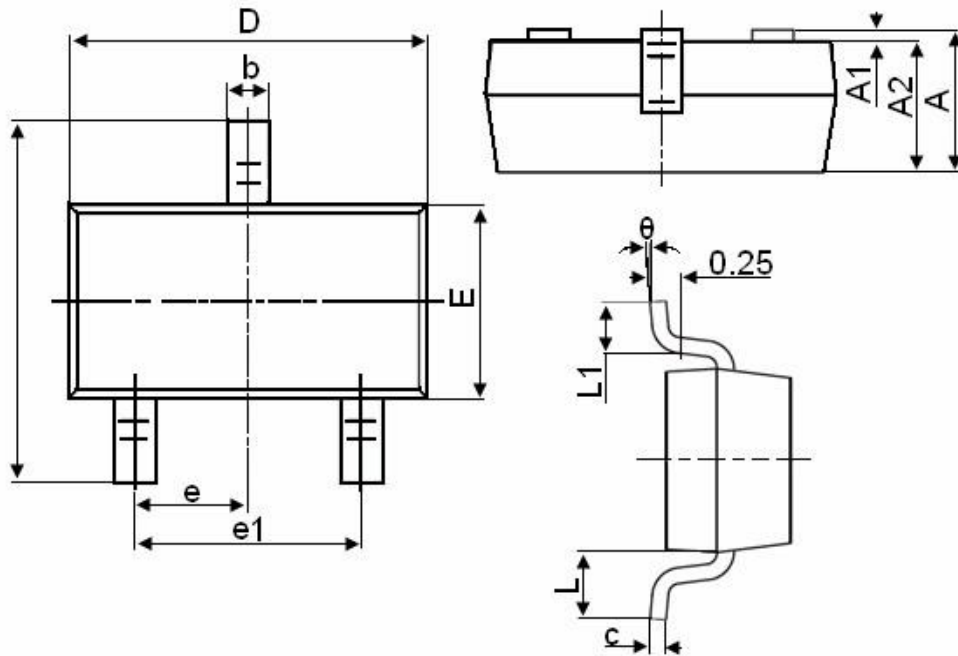


**Fig.10 Switching Time Waveform**



**Fig.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
$\theta$	0°	8°

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [MOSFET](#) category:*

*Click to view products by [YFW Electronics](#) manufacturer:*

Other Similar products are found below :

[IRFD120](#) [JANTX2N5237](#) [2SK2267\(Q\)](#) [BUK455-60A/B](#) [TK100A10N1,S4X\(S](#) [MIC4420CM-TR](#) [VN1206L](#) [NDP4060](#) [SI4482DY](#)  
[IRS2092STRPBF-EL](#) [IPS70R2K0CEAKMA1](#) [TK31J60W5,S1VQ\(O](#) [TK31J60W,S1VQ\(O](#) [TK16J60W,S1VQ\(O](#) [2SK2614\(TE16L1,Q\)](#)  
[DMN1017UCP3-7](#) [EFC2J004NUZTDG](#) [P85W28HP2F-7071](#) [DMN1053UCP4-7](#) [NTE2384](#) [DMC2700UDMQ-7](#) [DMN2080UCB4-7](#)  
[DMN61D9UWQ-13](#) [US6M2GTR](#) [DMN31D5UDJ-7](#) [DMP22D4UFO-7B](#) [IPS60R3K4CEAKMA1](#) [DMN1006UCA6-7](#) [DMN16M9UCA6-7](#)  
[STF5N65M6](#) [IRF40H233XTMA1](#) [STU5N65M6](#) [DMN6022SSD-13](#) [DMN13M9UCA6-7](#) [DMTH10H4M6SPS-13](#) [IPS60R360PFD7SAKMA1](#)  
[DMN2990UFB-7B](#) [SSM3K35CT,L3F](#) [IPLK60R1K0PFD7ATMA1](#) [2N7002W-G](#) [MCAC30N06Y-TP](#) [IPWS65R035CFD7AXKSA1](#)  
[MCQ7328-TP](#) [SSM3J143TU,LXHF](#) [DMN12M3UCA6-7](#) [PJMF280N65E1\\_T0\\_00201](#) [PJMF380N65E1\\_T0\\_00201](#)  
[PJMF280N60E1\\_T0\\_00201](#) [PJMF600N65E1\\_T0\\_00201](#) [PJMF900N65E1\\_T0\\_00201](#)