

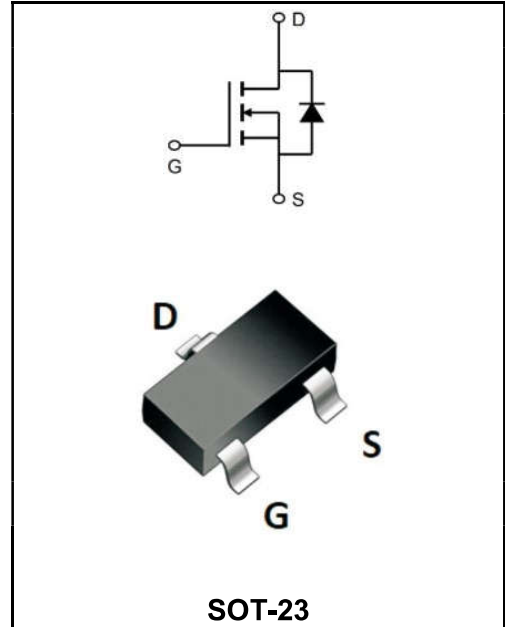
60V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

$I_D$	3A
$V_{DSS}$	60V
$R_{DS(on)-typ}(@V_{GS}=10V)$	< 100mΩ (Type:80 mΩ)

Application

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



Product Specification Classification

Part Number	Package	Marking	Pack
YFW3N06	SOT-23	6003	3000PCS/Tape

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	$V_{DS}$	60	V
Gate - Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current, $V_{GS} @ 10V^1 @ T_C=25^\circ C$	$I_D$	3.0	A
Continuous Drain Current, $V_{GS} @ 10V^1 @ T_A=70^\circ C$	$I_D$	1.8	A
Pulsed Drain Current <sup>2</sup>	$I_{DM}$	9.2	A
Total Power Dissipation <sup>4</sup> @ $T_A=25^\circ C$	$P_D$	1	W
Storage Temperature Range	$T_{STG}$	-55 to +150	°C
Operating Junction Temperature Range	$T_J$	-55 to +150	°C
Thermal Resistance Junction-Ambient <sup>1</sup>	$R_{\theta JA}$	125	°C/W
Thermal Resistance Junction-Case <sup>1</sup>	$R_{\theta JC}$	80	°C/W

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

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	$BV_{DSS}$	60	-	-	V
BVDSS Temperature Coefficient	Reference to 25°C, $I_D=1mA$	$\Delta BV_{DSS}/\Delta T_J$	-	0.054	-	V/°C
Static Drain-Source On-Resistance <sup>2</sup>	$V_{GS}=10V, I_D=2A$	$R_{DS(ON)}$	-	80	100	mΩ
	$V_{GS}=4.5V, I_D=1A$		-	85	110	
Gate -Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{GS(th)}$	1.2	-	2.5	V
$V_{GS(th)}$ Temperature Coefficient		$\Delta V_{GS(th)}$	-	-4.96	-	mV/°C
Drain -Source Leakage Current	$V_{DS}=48V, V_{GS}=0V, T_J=25^\circ C$	$I_{DSS}$	-	-	1	μA
	$V_{DS}=48V, V_{GS}=0V, T_J=55^\circ C$		-	-	5	
Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	$I_{GSS}$	-	-	±100	nA
Forward Transconductance	$V_{DS}=5V, I_D=2A$	$g_{FS}$	-	13	-	S
Total Gate Charge(4.5V)	$V_{DS}=48V$ $V_{GS}=4.5V$ $I_D=2A$	$Q_g$	-	5	7.0	nC
Gate-Source Charge		$Q_{gs}$	-	1.68	2.4	
Gate-Drain Charge		$Q_{gd}$	-	1.9	2.7	
Turn-on delay time	$V_{DD}=30V$ $V_{GS}=10V$ $R_G=3.3$ $I_D=2A$	$t_{d(on)}$	-	1.6	3.2	ns
Rise Time		$T_r$	-	7.2	13	
Turn-Off Delay Time		$t_{d(OFF)}$	-	25	50	
Fall Time		$t_f$	-	14.4	28.8	
Input Capacitance	$V_{DS}=15V$ $V_{GS}=0V$ $f=1.0MHz$	$C_{iss}$	-	511	715	pF
Output Capacitance		$C_{oss}$	-	38	53	
Reverse Transfer Capacitance		$C_{rss}$	-	25	35	
Continuous Source Current <sup>1,4</sup>	$V_G=V_D=0V$ , Force Current	$I_S$	-	-	2.3	A
Pulsed Source Current <sup>2,4</sup>		$I_{SM}$	-	-	9.2	A
Diode Forward Voltage <sup>2</sup>	$V_{GS}=0V, I_S=1A, T_J=25^\circ C$	$V_{SD}$	-	-	1.2	V
Reverse Recovery Time	$I_F=2A, dI/dt=100A/\mu s,$ $T_J=25^\circ C$	$t_{rr}$	-	9.7	-	ns
Reverse Recovery Charge		$Q_{rr}$	-	5.8	-	nC

Note :

- 1.The data tested by surface mounted on a 1 inch<sup>2</sup> FR-4 board with 2OZ copper.
- 2.The data tested by pulsed , pulse width  $\leq 300\mu s$  , duty cycle  $\leq 2\%$
- 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

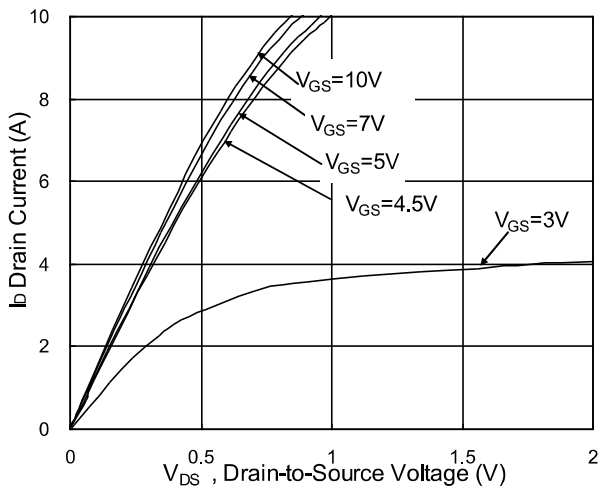


Fig.1 Typical Output Characteristics

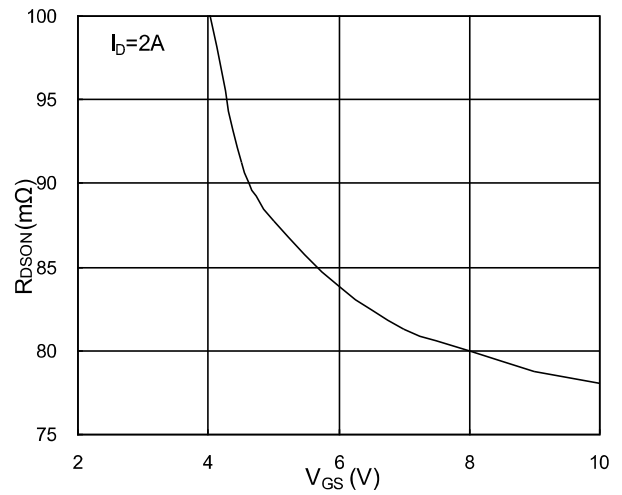


Fig.2 On-Resistance v.s Gate-Source

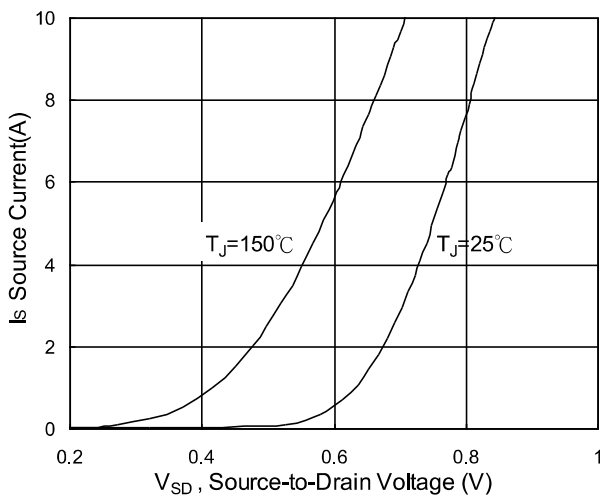


Fig.3 Forward Characteristics of Reverse

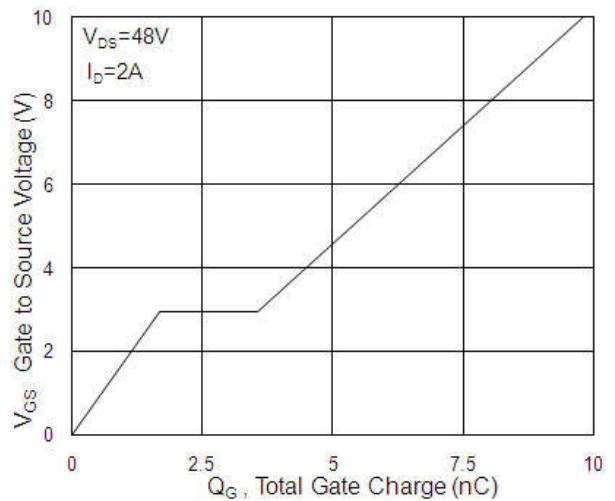


Fig.4 Gate-Charge Characteristics

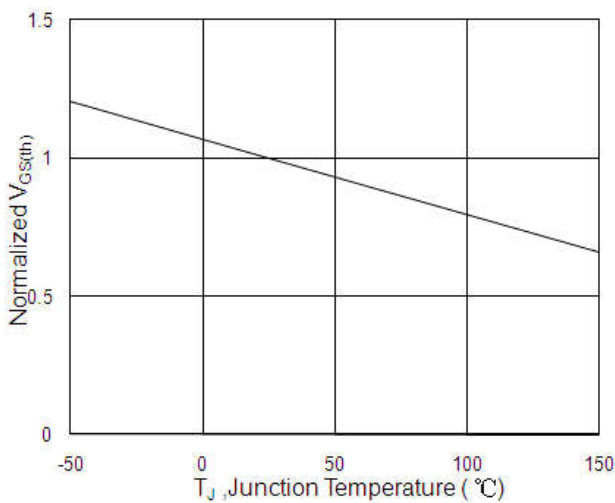


Fig.5 Normalized  $V_{GS(th)}$  v.s  $T_J$

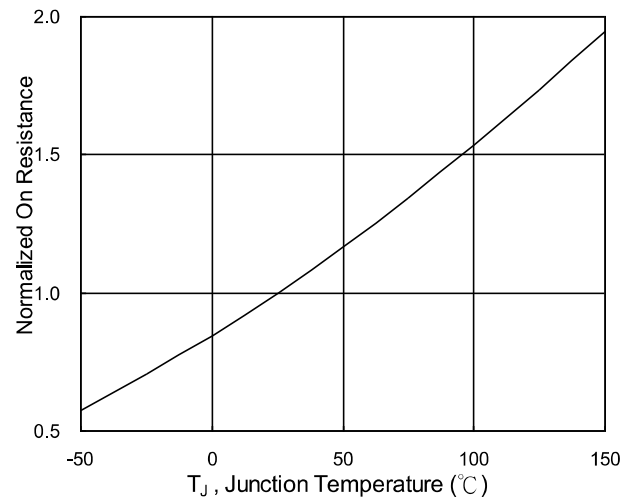
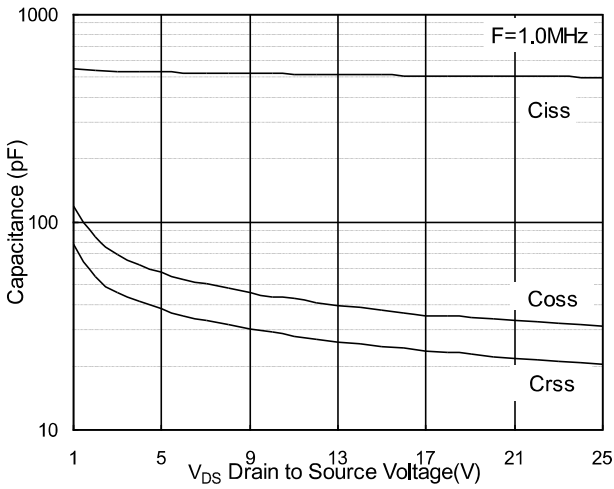
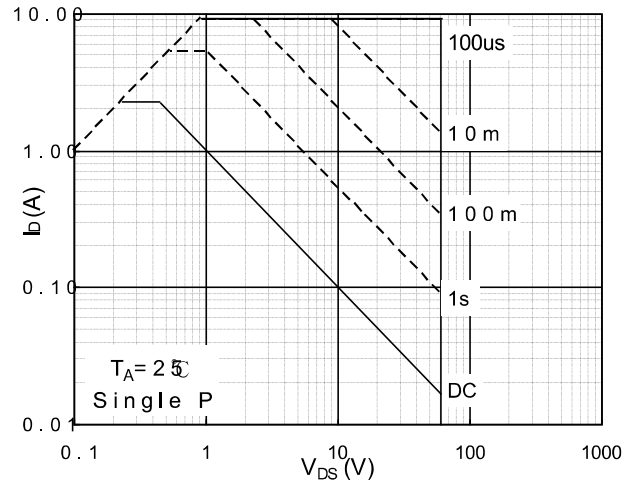


Fig.6 Normalized  $R_{DS(on)}$  v.s  $T_J$

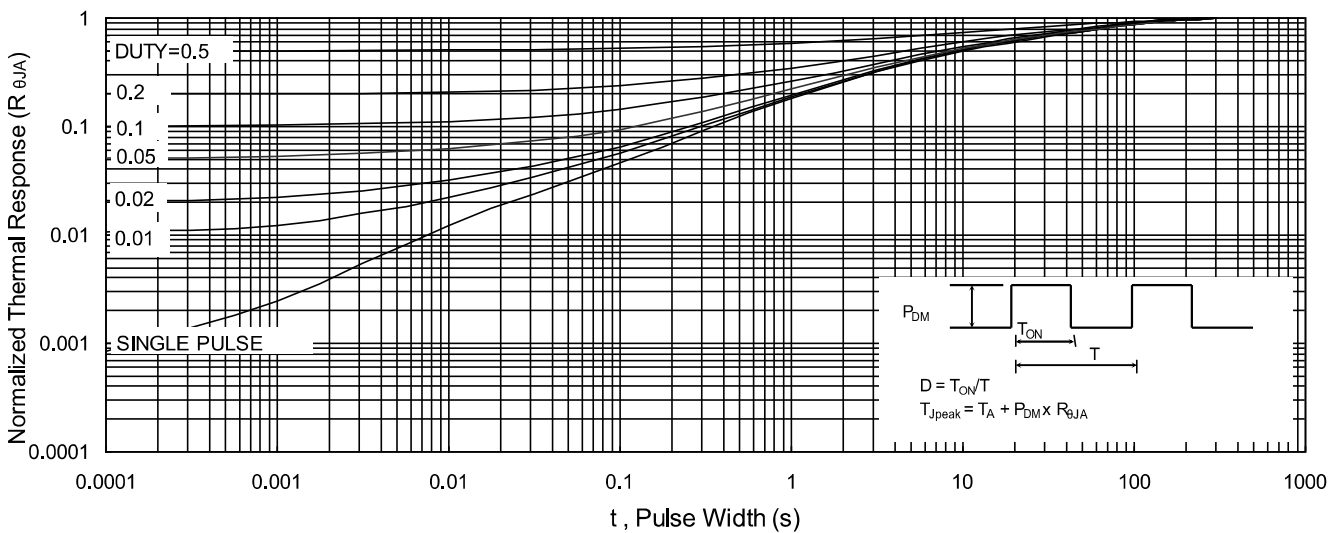
**Ratings and Characteristic Curves**



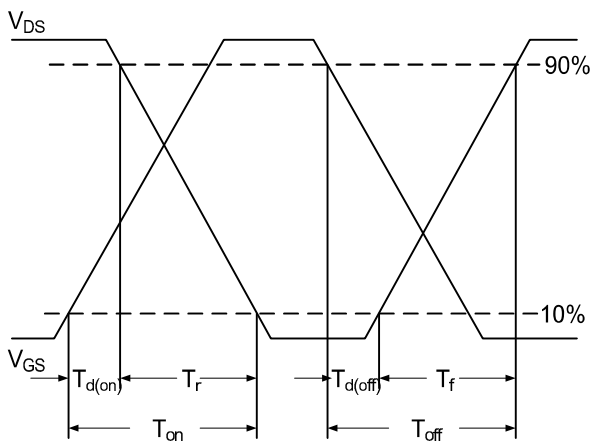
**Fig.7 Capacitance**



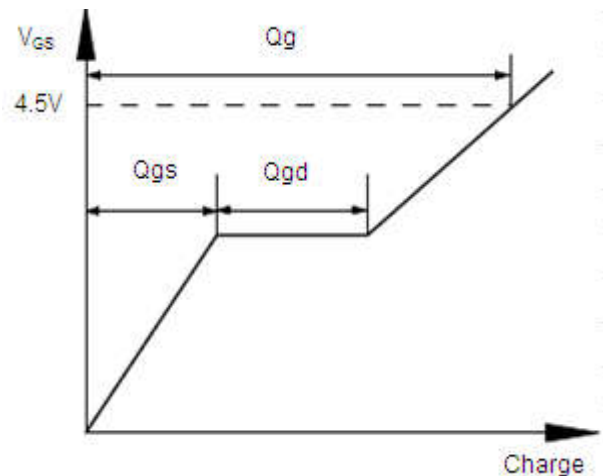
**Fig.8 Safe Operating Area**



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

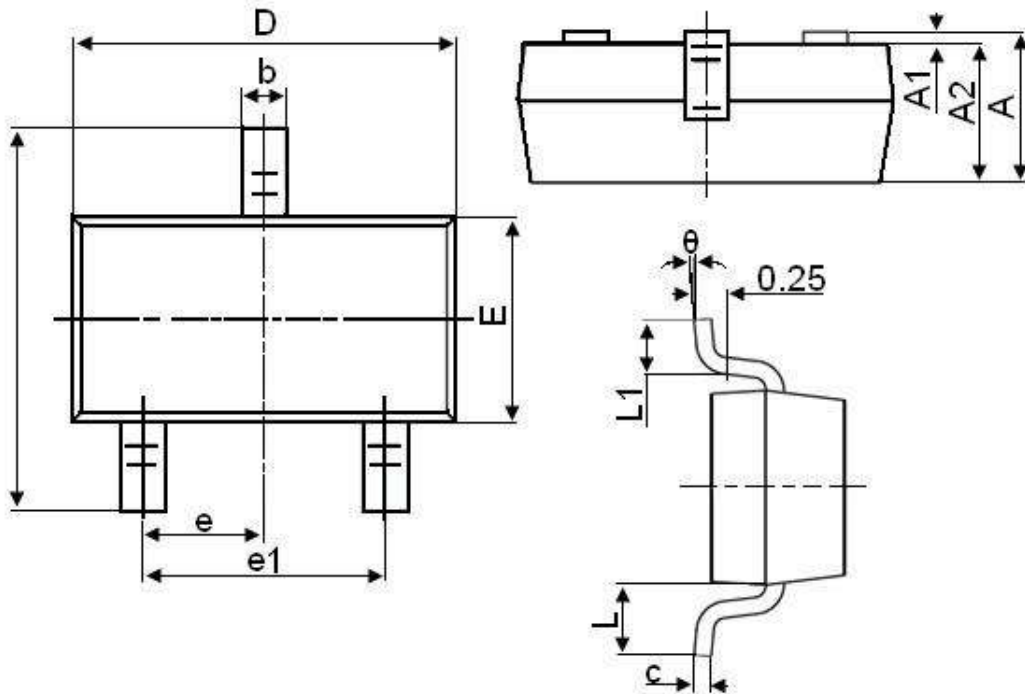


**Fig.10 Switching Time Waveform**



**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°

单击下面可查看定价，库存，交付和生命周期等信息

[>>YFW\(佑风微\)](#)