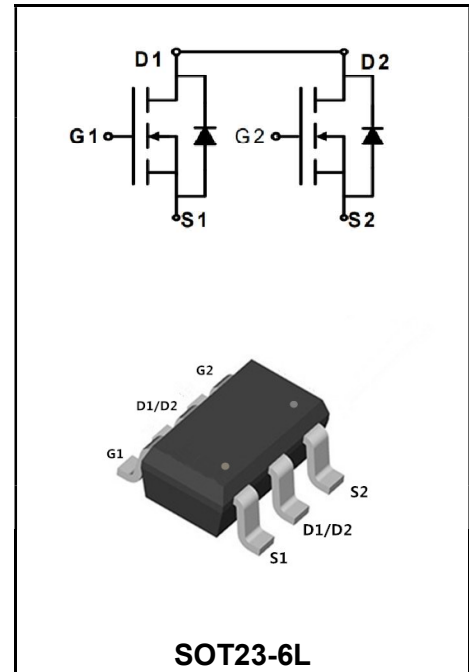


**20V N+N-CHANNEL ENHANCEMENT MODE MOSFET**

**MAIN CHARACTERISTICS**

$I_D$	6.0A
$V_{DSS}$	20V
$R_{DSON-typ}(@V_{GS}=10V)$	<25mΩ (Type:21 mΩ)



**Application**

- ◆ Lithium battery protection
- ◆ Mobile phone fast charging

**Product Specification Classification**

Part Number	Package	Marking	Pack
YFW8205SLI	SOT23-6L	8205S	3000PCS/Tape

**Maximum Ratings at Tc=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 Current1 @TA=25°C	$I_D$	6.0	A
Continuous Drain Current1 @TA=70°C	$I_D$	4.8	A
Pulsed Drain Current2	$I_{DM}$	24	A
Total Power Dissipation3 @TA=25°C	$P_D$	1.5	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>	$R_{θJA}$	85	°C/W

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

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS} = 0\text{ V}, I_D = 250\ \mu\text{A}$	$BV_{DSS}$	20	22	-	<b>V</b>
Static Drain-Source On-Resistance <sup>2</sup>	$V_{GS} = 4.5\text{ V}, I_D = 5\text{ A}$	$R_{DS(on)}$	-	21	25	<b>mΩ</b>
	$V_{GS} = 2.5\text{ V}, I_D = 4\text{ A}$		-	28	40	
Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\ \mu\text{A}$	$V_{GS(th)}$	0.5	0.7	1.2	<b>V</b>
Drain-Source Leakage Current	$V_{DS}=16\text{V}, V_{GS}=0\text{V}, T_J=25^\circ\text{C}$	$I_{DSS}$	-	-	1	<b>uA</b>
Gate-Source Leakage Current	$V_{GS} = \pm 8\text{ V}, V_{DS} = 0\text{ V}$	$I_{GSS}$	-	-	±100	<b>nA</b>
Forward Transconductance	$V_{DS}=5\text{V}, I_D=3.5\text{A}$	$g_{fs}$	-	20	-	<b>S</b>
Total Gate Charge(4.5V)	$I_D = 7\text{ A}$ $V_{DS} = 15\text{ V}$ $V_{GS} = 4.5\text{ V}$	$Q_g$	-	11.4	-	<b>nC</b>
Gate-Source Charge		$Q_{gs}$	-	1.6	-	
Gate-Drain Charge		$Q_{gd}$	-	2.9	-	
Turn-on Delay time	$V_{DD} = 10\text{ V}$ $V_{GS} = 4.5\text{ V}$ $R_G = 3.3$ $I_D = 5\text{ A}$	$Td(on)$	-	5	-	<b>nS</b>
Rise Time		$Tr$	-	32.4	-	
Turn-Off Delay Time		$td(OFF)$	-	28	-	
Fall Time		$Tf$	-	9	-	
Input Capacitance	$V_{GS}=0\text{V}$ $V_{DS}=15\text{V}$ $f=1\text{MHz}$	$C_{iss}$	-	863	-	<b>pF</b>
Output Capacitance		$C_{oss}$	-	87	-	
Reverse Transfer Capacitance		$C_{rss}$	-	71	-	
Continuous Source Current <sup>1,4</sup>	$V_G=V_D=0\text{V}$ , Force Current	$I_S$	-	-	6	<b>A</b>
Diode Forward Voltage <sup>2</sup>	$V_{DS}=0\text{V}, I_S=1\text{V}, T_J=25^\circ\text{C}$	$V_{SD}$	-	-	1.2	<b>V</b>

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  $\cong 300\mu\text{s}$  , duty cycle  $\cong 2\%$
- 3、 The power dissipation is limited by 175°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

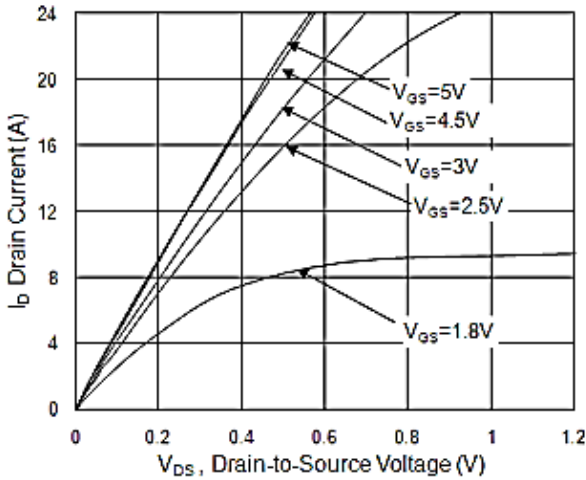


Fig.1 Typical Output Characteristics

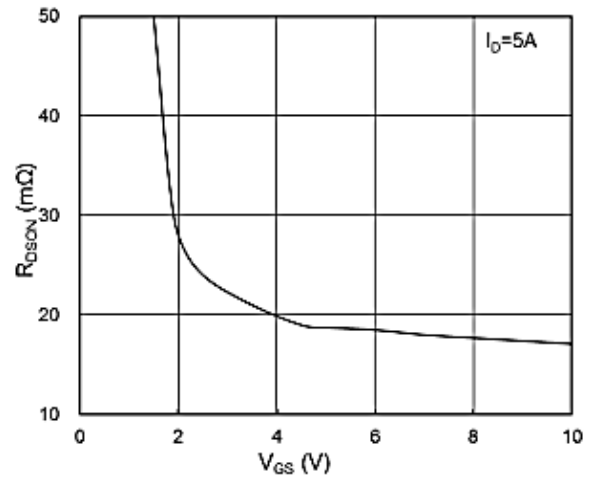


Fig.2 On-Resistance vs. Gate-Source Voltage

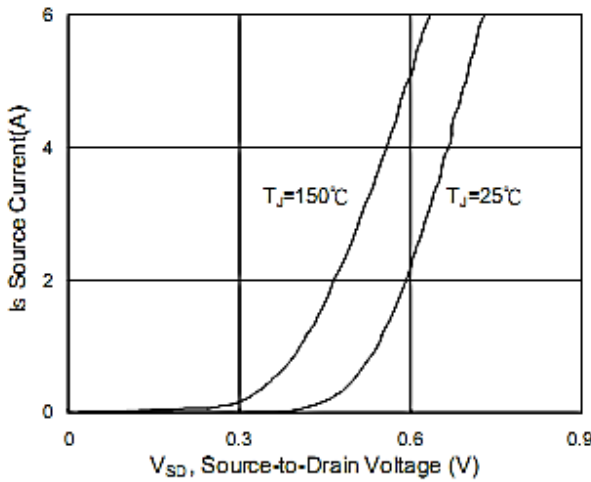


Fig.3 Forward Characteristics of Reverse

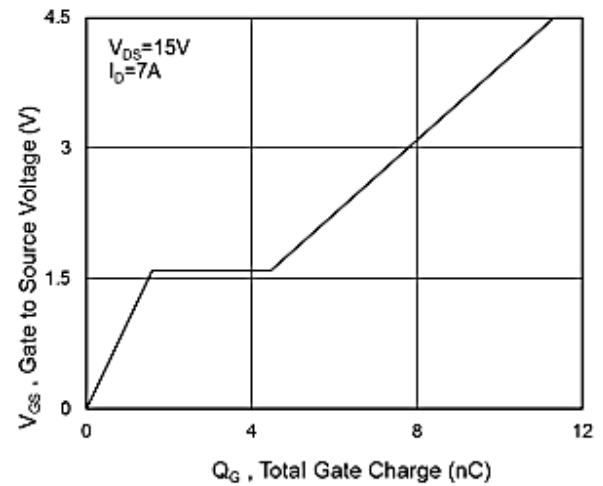


Fig.4 Gate-Charge Characteristics

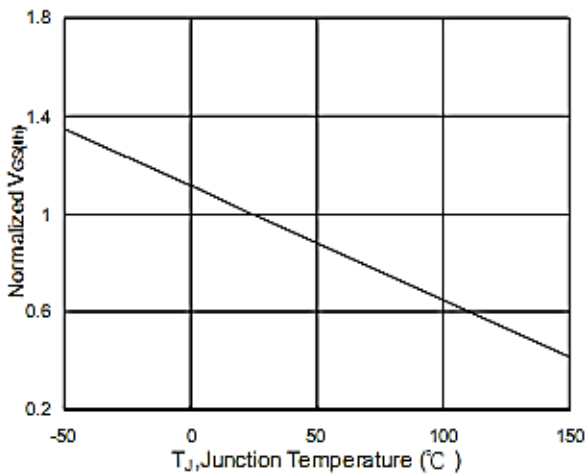


Fig.5  $V_{GS(th)}$  vs.  $T_J$

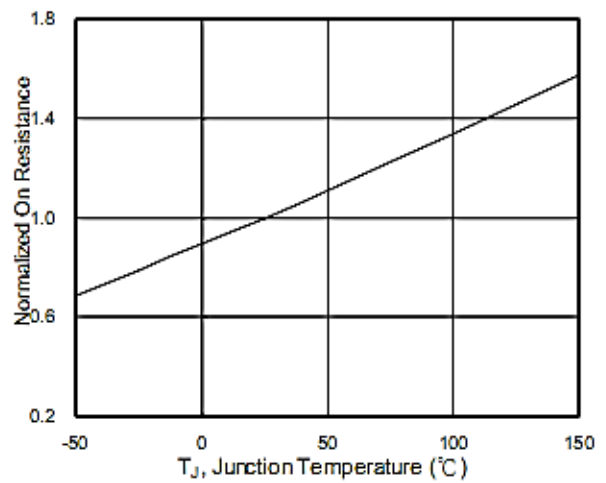


Fig.6 Normalized  $R_{DS(on)}$  vs.  $T_J$

Ratings and Characteristic Curves

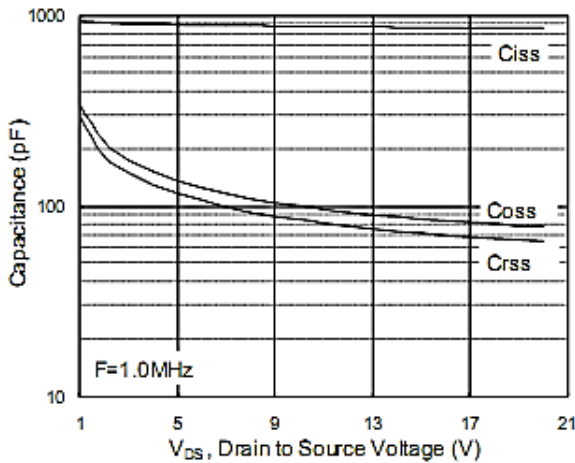


Fig.7 Capacitance

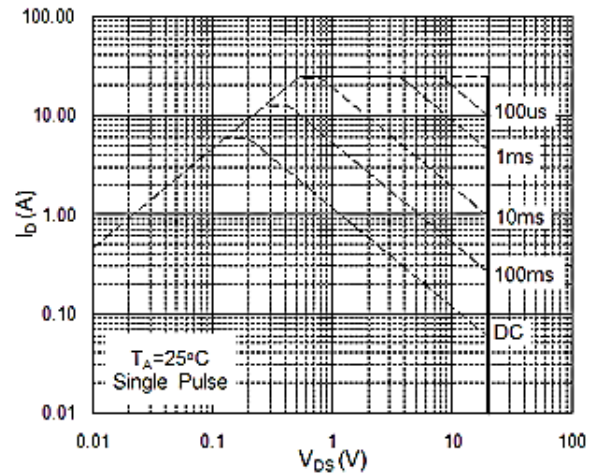


Fig.8 Safe Operating Area

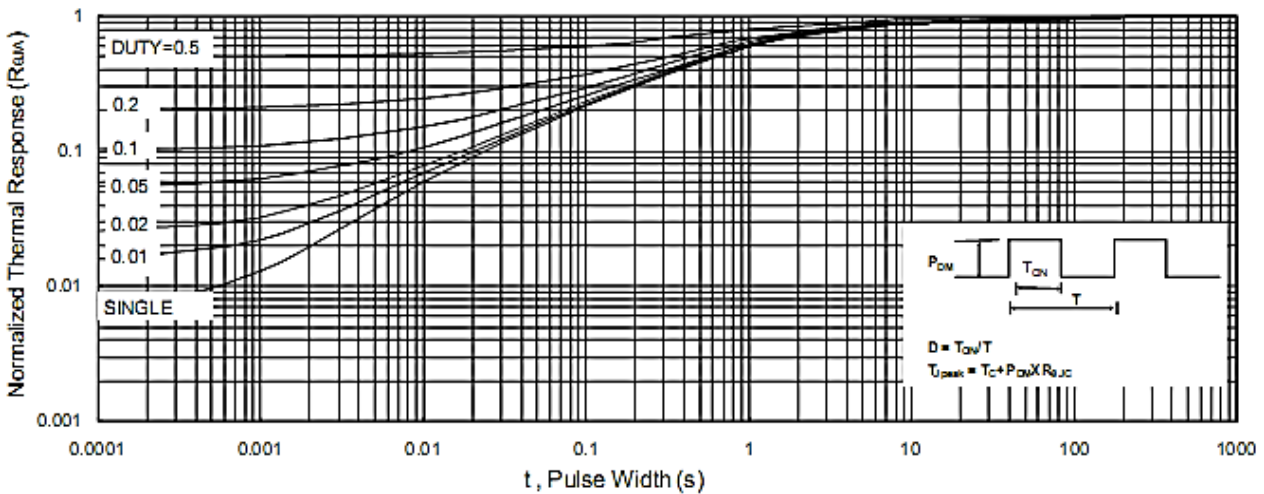


Fig.9 Normalized Maximum Transient Thermal Impedance

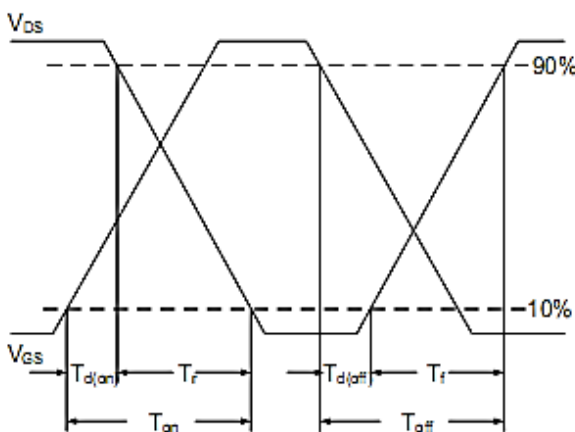


Fig.10 Switching Time Waveform

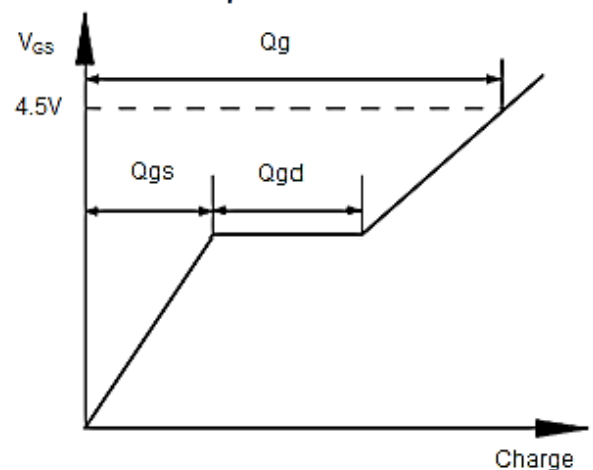
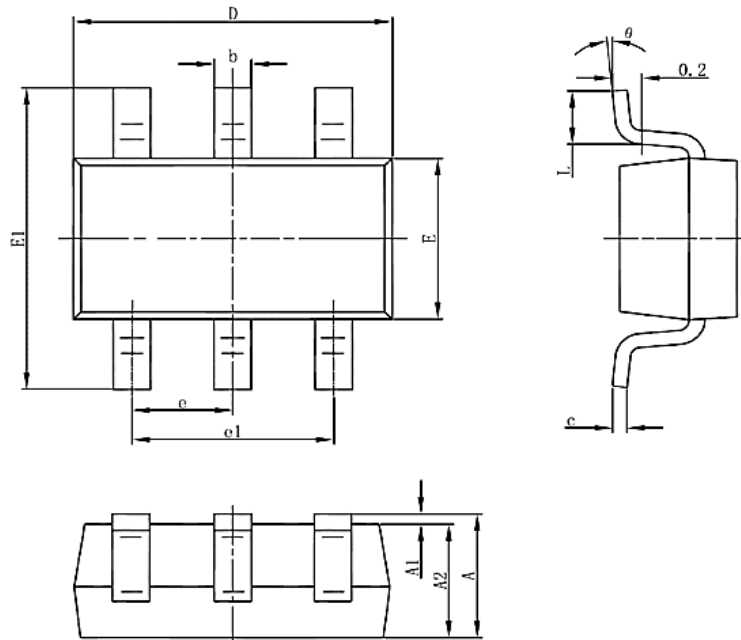


Fig.11 Gate Charge Waveform

**SOT23-6L**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
C	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950 (BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0	8	0	8

单击下面可查看定价，库存，交付和生命周期等信息

[>>YFW\(佑风微\)](#)