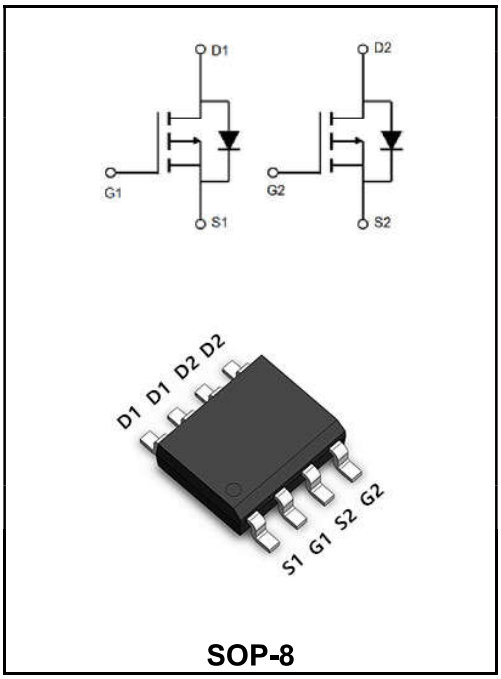
-30V P+P-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	-7A
V_{DSS}	-30V
R_{DSON}-typ(@V_{GS}=10V)	< 48mΩ(Type:37Ω)



SOP-8

Application

- Lithium battery protection
- Wireless impact
- Mobile phone fast charging

Product Specification Classification

Part Number	Package	Marking	Pack
YFW4953S	SOP-8	YFW 4953 XXXXX	3000PCS/Tape

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	-30	V
Gate - Source Voltage	V_{GS}	±20	V
Continuous Drain Current, -V_{GS} @ -10V[1] @T_A=25℃	I_D	-7	A
Continuous Drain Current, -V_{GS} @ -10V[1] @T_A=70℃	I_D	-4.3	A
Pulsed Drain Current [2]	I_{DM}	-21	A
Single Pulse Avalanche Energy[3]	E_{AS}	81.2	mJ
Total Power Dissipation[4] @T_A=25℃	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 [1]	$R_{\theta JA}$	85	°C/W
Thermal Resistance Junction-Case[1]	$R_{\theta JC}$	25	°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=-250uA	**V(BR)DSS**	-30	-33	-	**V**
Zero Gate Voltage Drain Current	V_{DS}=-30V , V_{GS}=0V	**I_{DSS}**	-	-	-1	**μA**
Gate-Source Leakage	V_{GS}=±20V, V_{DS}=0V	**I_{GSS}**	-	-	±100	**nA**
Gate-Source Threshold Voltage[3]	V_{DS}=V_{GS}, I_D=-250uA	**$V_{GS(th)}$**	-1	-1.6	-2.5	**V**
Drain-Source on-State Resistance[3]	V_{GS}=-10V, I_D=-4.1A	**$R_{DS(ON)}$**	-	37	48	**mΩ**
	V_{GS}=-4.5V, I_D=-3.0A		-	58	65	
Input Capacitance	V_{DS}=-15V V_{GS}=0V f=1MHz	**C_{iss}**	-	530	-	**pF**
Output Capacitance		**C_{oss}**	-	70	-	
Reverse Transfer Capacitance		**C_{rss}**	-	56	-	
Turn-on delay time[4]	V_{GS}=-10V V_{DS} =-15V R_L= 15 Ω R_{GEN}=2.5Ω	**$t_{d(on)}$**	-	14	-	**ns**
Rise Time[4]		**T_r**	-	61	-	
Turn-Off Delay Time[4]		**$t_{d(OFF)}$**	-	19	-	
Fall Time[4]		**t_f**	-	10	-	
Total Gate Charge[4]	V_{GS}=-10V V_{DS}=-15V I_D=-4.1A	**Q_g**	-	6.8	-	**nC**
Gate-Source Charge[4]		**Q_{gs}**	-	1.0	-	
Gate-Drain Charge[4]		**Q_{gd}**	-	1.4	-	
Diode Forward Voltage	V_{GS}=0V , I_S=-4.1A	**V_{SD}**	-	-	-1.2	**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 ≦ 300us , duty cycle ≦ 2%
3、The power dissipation is limited by 150℃ 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

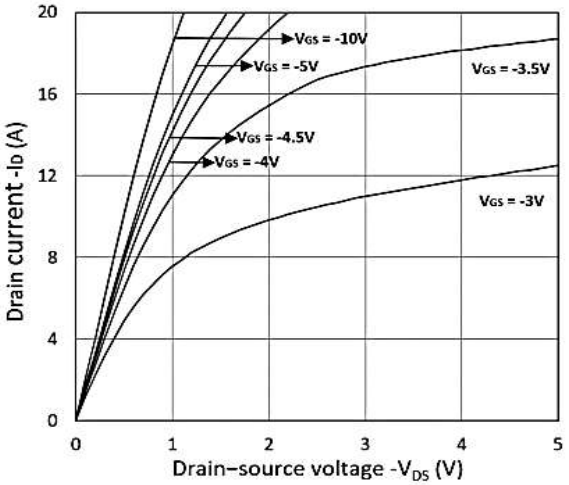


Figure 1. Output Characteristics

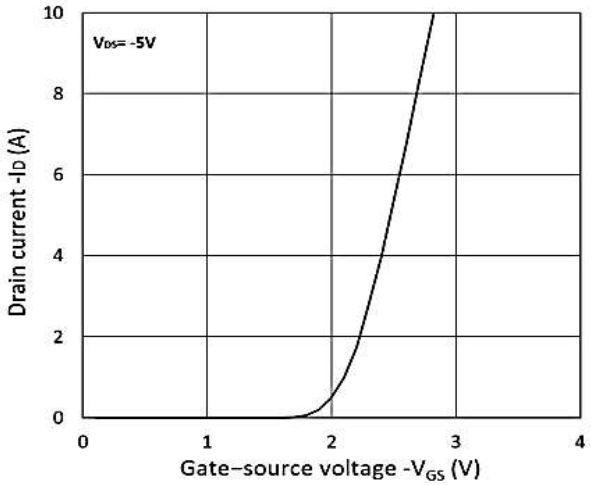


Figure 2. Transfer Characteristics

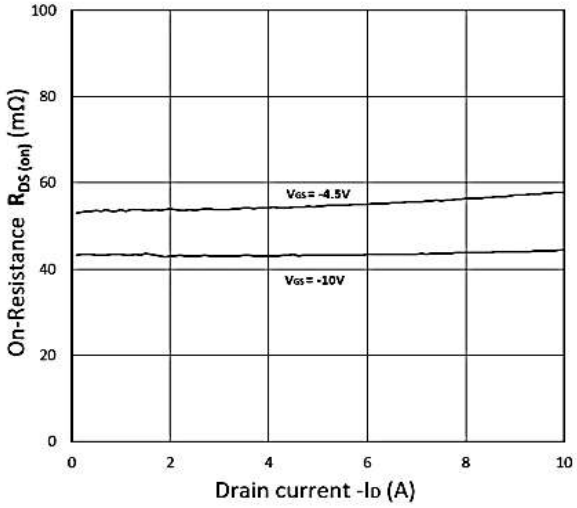


Figure 3. RDS(ON) vs. ID

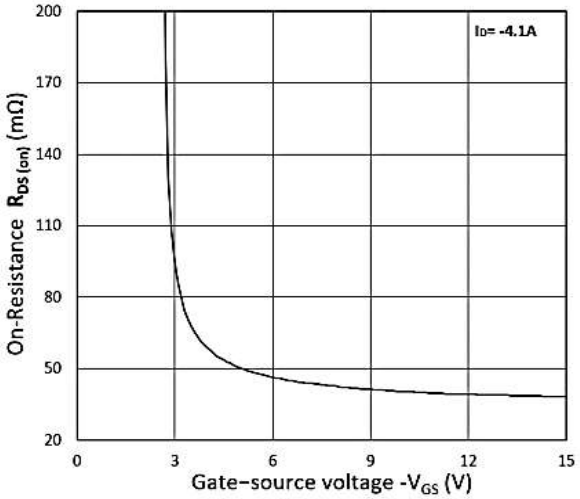


Figure 4. R DS(ON) vs. V GS

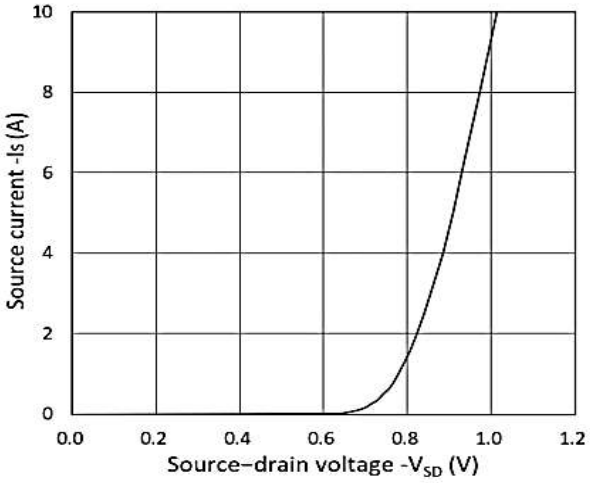


Figure 5.IS vs. VSD

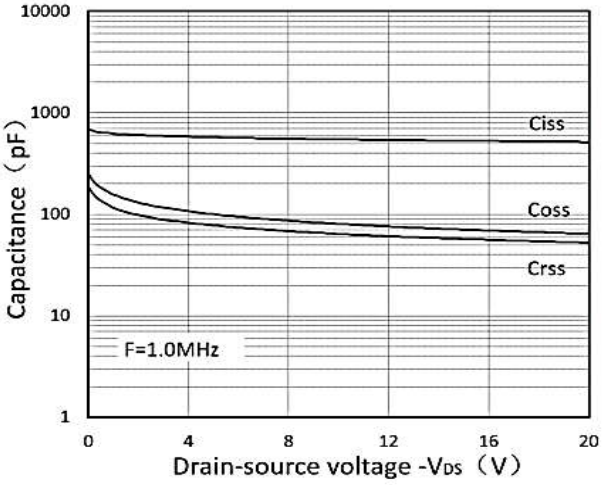


Figure 6. Capacitance Characteristics

Ratings and Characteristic Curves

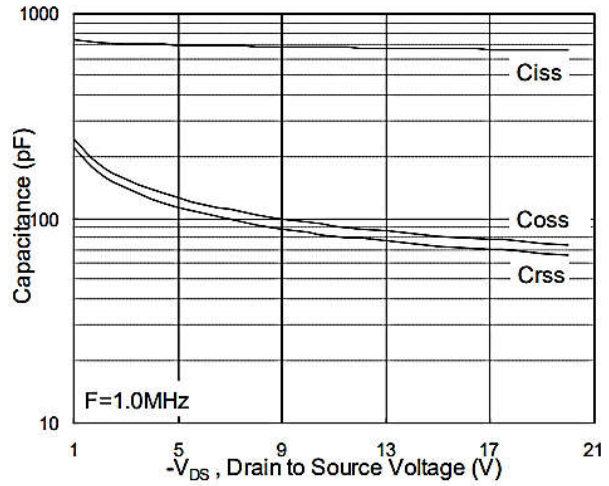


Figure 7 Capacitance

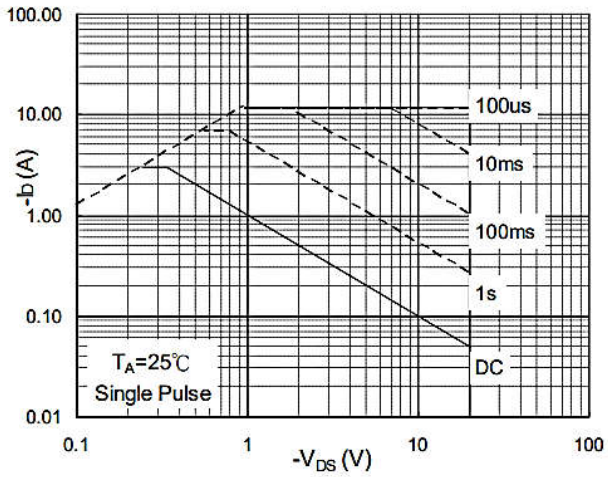


Figure 8 Safe Operating Area

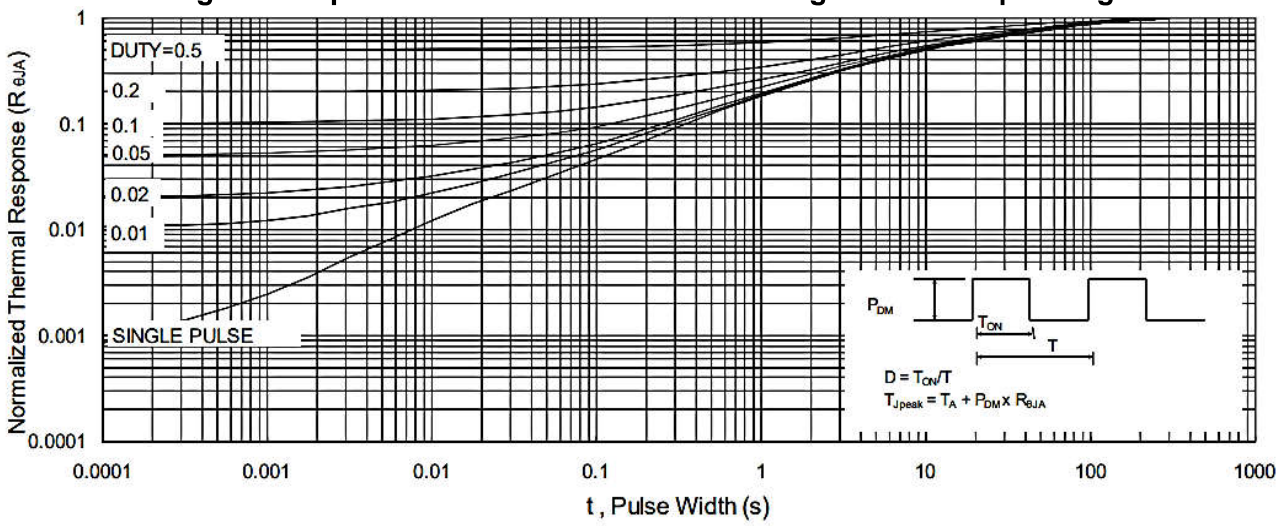


Figure 9 Normalized Maximum Transient Thermal Impedance

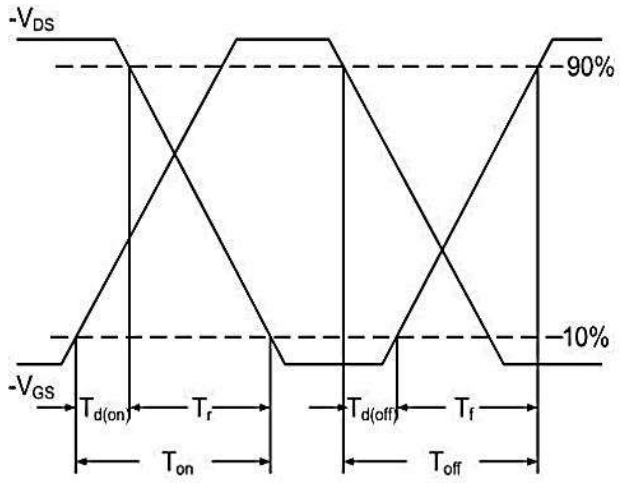


Figure 10 Switching Time Waveform

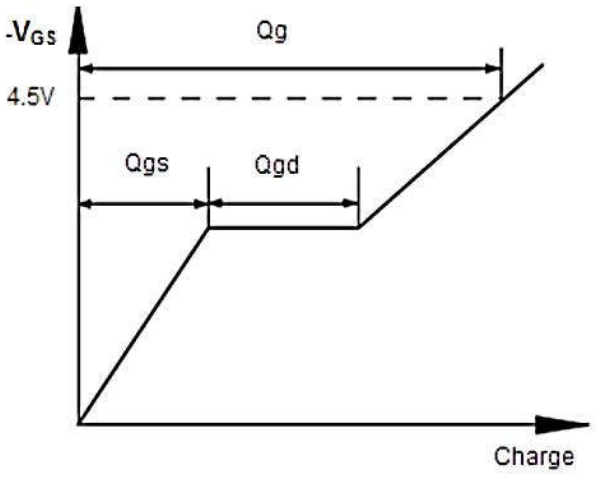
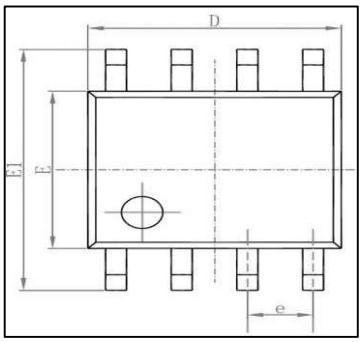
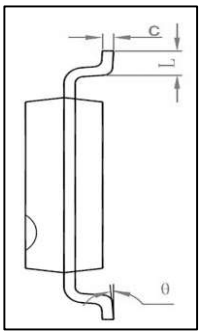


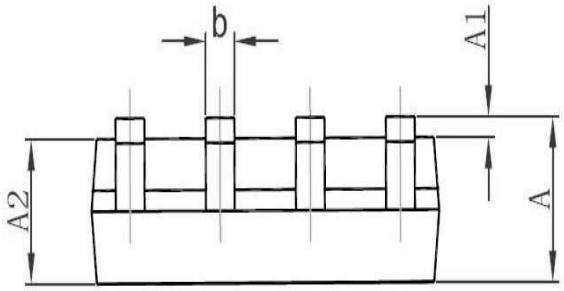
Figure 11 Gate Charge Waveform

Package Outline Dimensions Millimeters

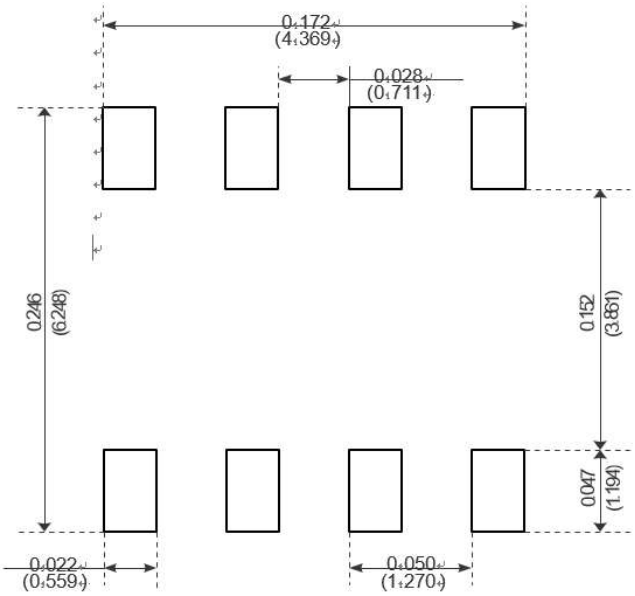
SOP-8







Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270 (BSC)		0.050 (BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°



Recommended Minimum Pads