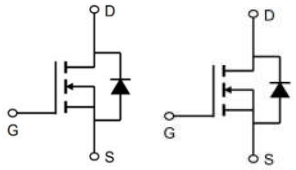
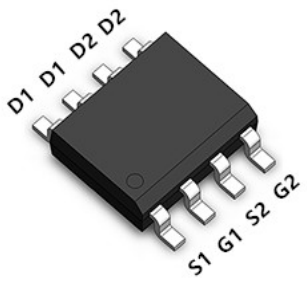
60V N+N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	8A
V_{DSS}	60V
R_{DSON}-typ(@V_{GS}=10V)	< 32mΩ(Type:23 mΩ)





SOP-8

Pb lead-free ROHS

Application

- Battery protection
- Load switch
- Uninterruptible power supply

Product Specification Classification

Part Number	Package	Marking	Pack
YFW8H06S	SOP-8	YFW 8H06S XXXXX	3000PCS/Tape

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	**VDS**	60	**V**
Gate - Source Voltage	**VGS**	±20	**V**
Continuous Drain Current, V_{GS} @ 10V[1] @T_A=25℃	**I_D**	8.2	**A**
Continuous Drain Current, V_{GS} @ 10V[1]@T_A=70℃	**I_D**	5.8	**A**
Pulsed Drain Current[2]	**I_{DM}**	16.6	**A**
Single Pulse Avalanche Energy[3]	**E_{AS}**	28.5	**mJ**
Avalanche Current	**I_{AS}**	22.6	**A**
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]	**$R_{\theta JC}$**	36	**°C/W**

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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	B_{VDSS}	60	66	-	V
BVDSS Temperature Coefficient	Reference to 25℃ , I_D=1mA	$\Delta BV_{DSS/\Delta TJ}$	-	0.063	-	V/℃
Static Drain-Source On-Resistance[2]	V_{GS}=10V, I_D=8A	$R_{DS(ON)}$	-	23	32	mΩ
	V_{GS}=4.5V, I_D=6A		-	28	38	
Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250uA	$V_{GS(th)}$	1.2	1.6	2.5	V
$V_{GS(th)}$ Temperature Coefficient		$\Delta V_{GS(th)}$	-	-5.24	-	mV/℃
Drain-Source Leakage Current	V_{DS}=48V, V_{GS}=0V T_J=25℃	I_{DSS}	-	-	1	uA
	V_{DS}=48V , V_{GS}=0V , T_J=55℃		-	-	5	
Gate-Source Leakage Current	V_{GS}=±20V, V_{DS}=0V	I_{GSS}	-	-	±100	nA
Forward Transcond uctance	V_{DS} = 5V, I_D = 4A	g_{fs}	-	21	-	S
Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	R_g		3.2	6.4	Ω
Total Gate Charge (4.5V)	V_{DS}=48V V_{GS}=4.5V I_D=4A	Q_g	-	12.6	-	nC
Gate-Source Charge		Q_{gs}	-	3.2	-	
Gate-Drain Charge		Q_{gd}	-	6.3	-	
Turn-on delay time	V_{DD} =30V V_{GS}=10V R_G = 3.3Ω I_D= 4A	$t_{d(on)}$	-	8	-	ns
Rise Time		T_r	-	14.2	-	
Turn-Off Delay Time		$t_{d(OFF)}$	-	24.4	-	
Fall Time		t_f	-	4.6	-	
Input Capacitance	V_{DS}=15V V_{GS}=0V f=1.0MHz	C_{iss}	-	1378	-	pF
Output Capacitance		C_{oss}	-	86	-	
Reverse Transfer Capacitance		C_{rss}	-	64	-	
Continuous Source Current[1,5]	V_G=V_D=0V , Force Current	I_S	-	-	4.8	A
Pulsed Source Current[2,5]		I_{SM}	-	-	9.6	A
Diode Forward Voltage[2]	V_{GS}=0V , I_S=1A , T_J=25℃	V_{SD}	-	0.746	1.2	V

Note :
1.The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper.
2.The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%
3.The EAS data shows Max. rating . The test condition is V_{DD}=25V,V_{GS}=10V,L=0.1mH,I_{AS}=22.6A
4.The power dissipation is limited by 150℃ junction temperature
5.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.

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Ratings and Characteristic Curves

Typical Characteristics

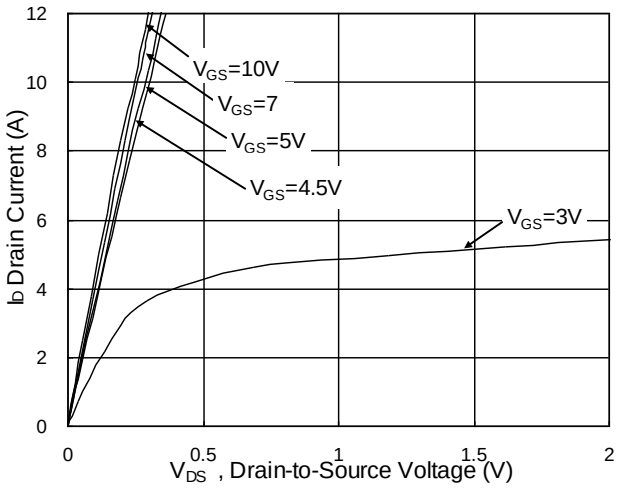


Fig.1 Typical Output Characteristics

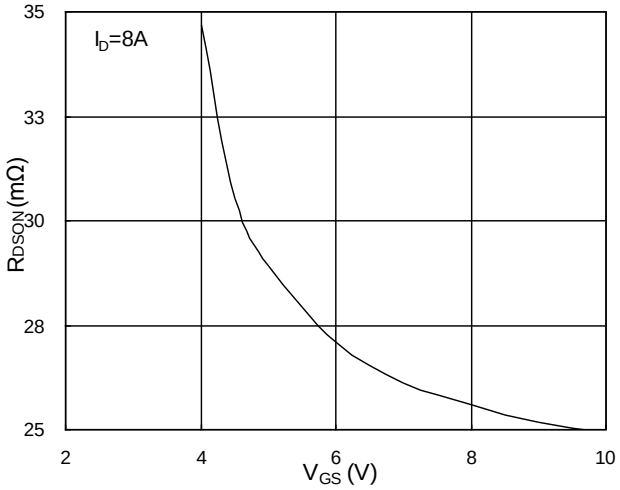


Fig.2 On-Resistance v.s Gate-Source

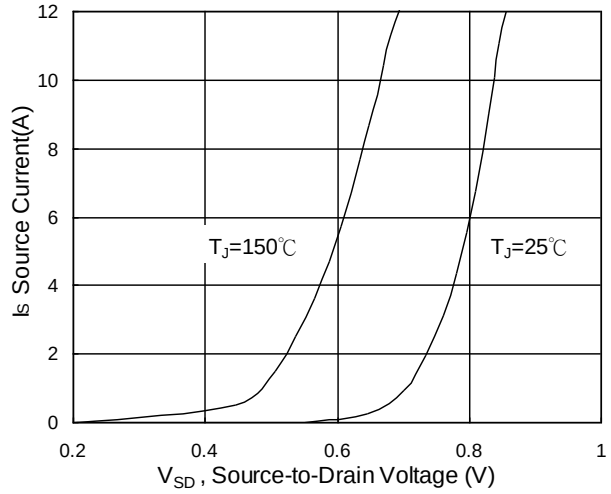


Fig.3 Forward Characteristics of Reverse

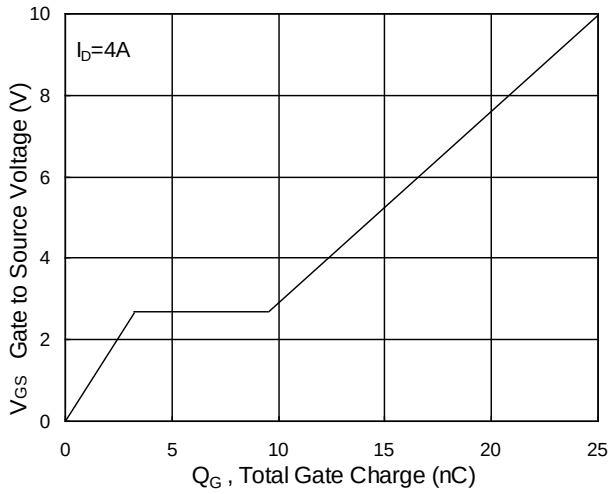


Fig.4 Gate-Charge Characteristics

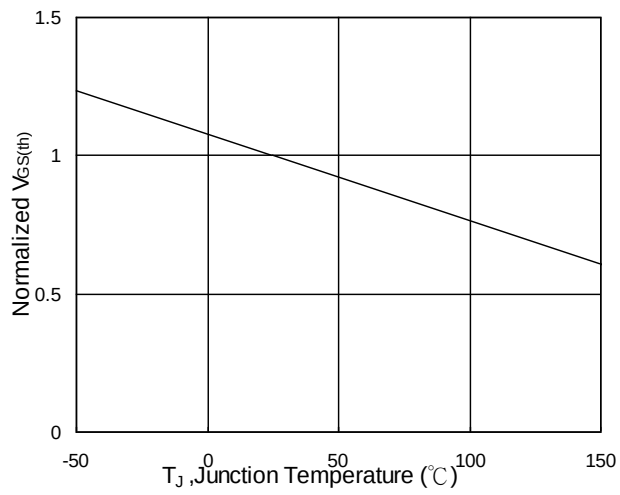


Fig.5 Normalized $V_{GS(th)}$ v.s T_J

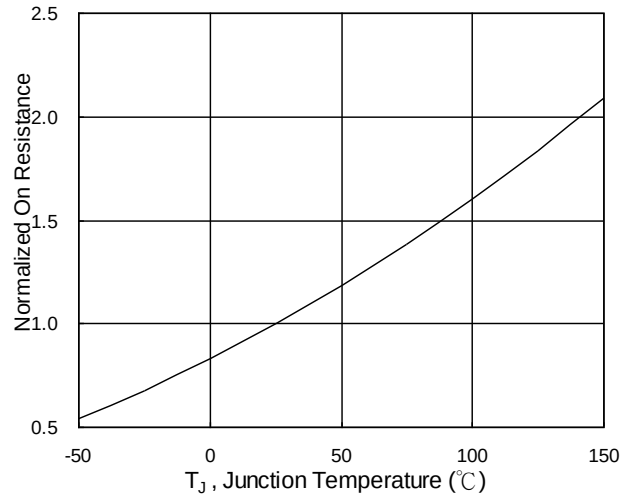


Fig.6 Normalized R_{DSON} v.s T_J

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Ratings and Characteristic Curves

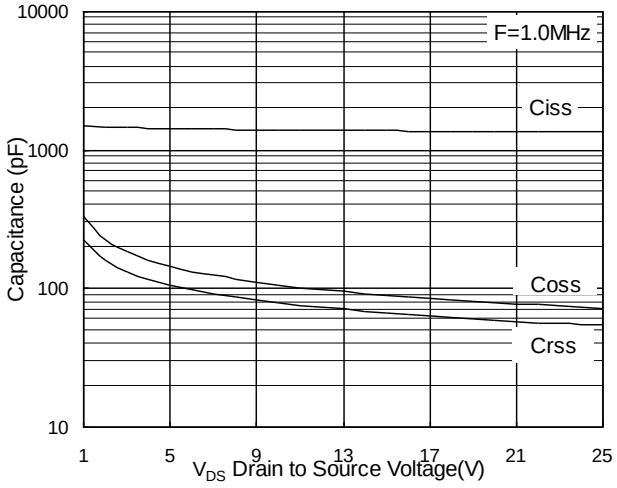


Fig.7 Capacitance

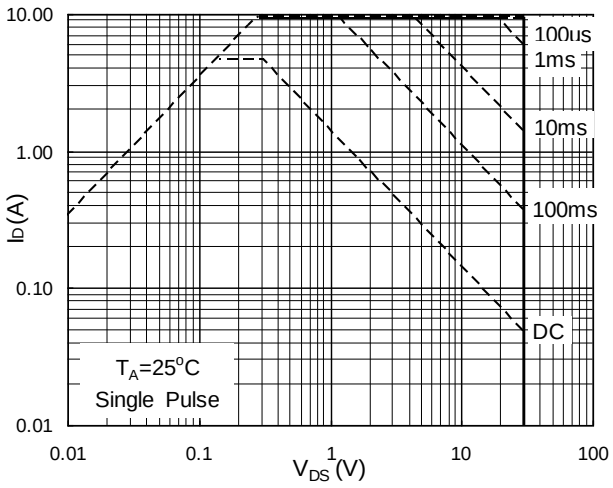


Fig.8 Safe Operating Area

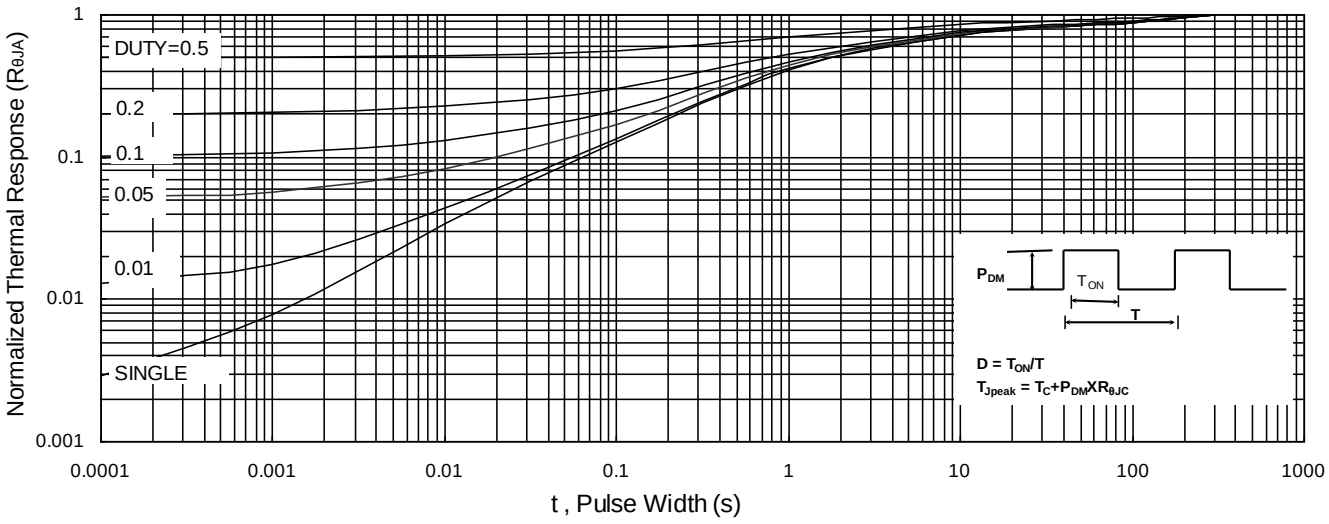


Fig.9 Normalized Maximum Transient Thermal Impedance

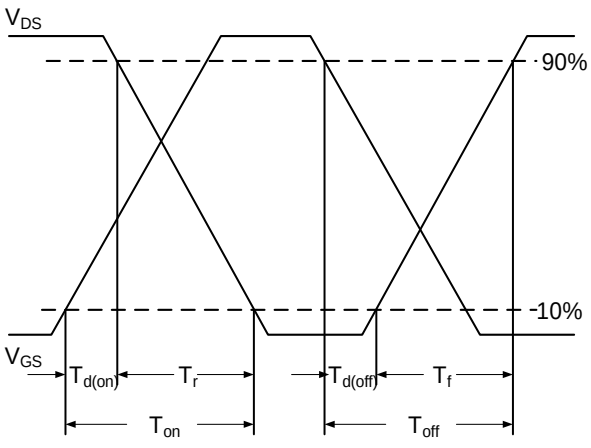


Fig.10 Switching Time Waveform

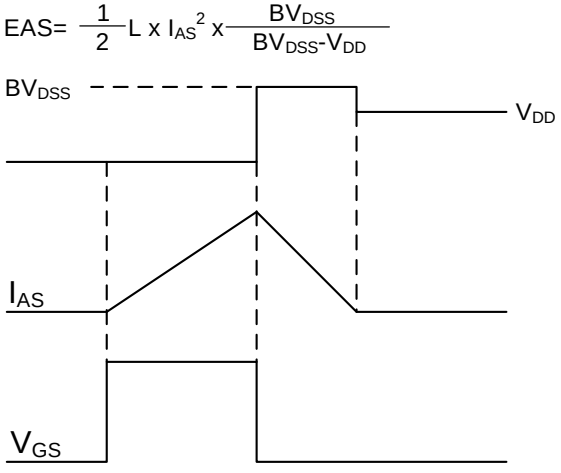
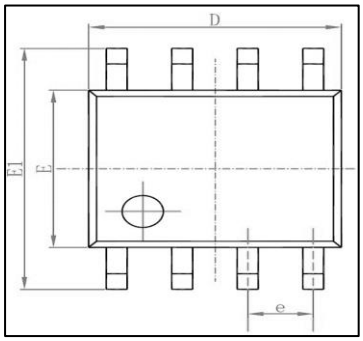


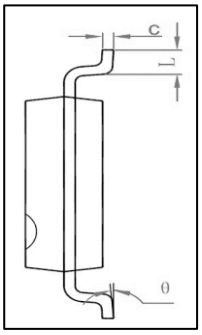
Fig.11 Unclamped Inductive Waveform

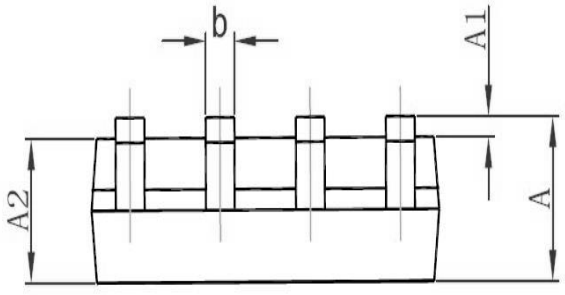
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Package Outline Dimensions Millimeters

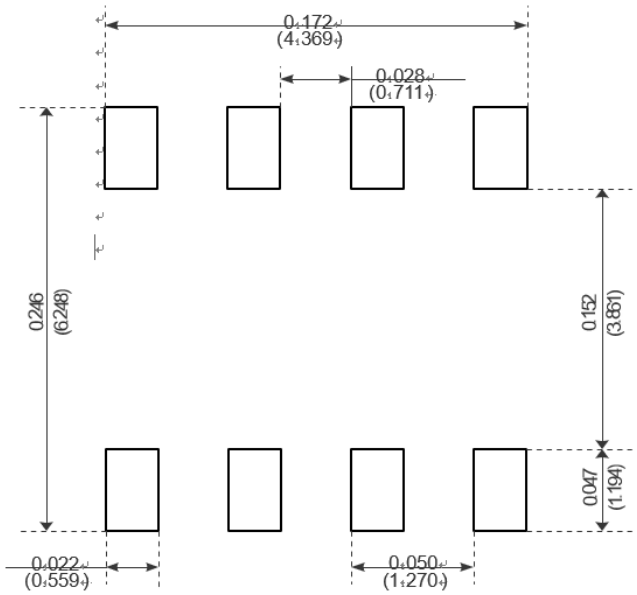
SOP-8







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

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