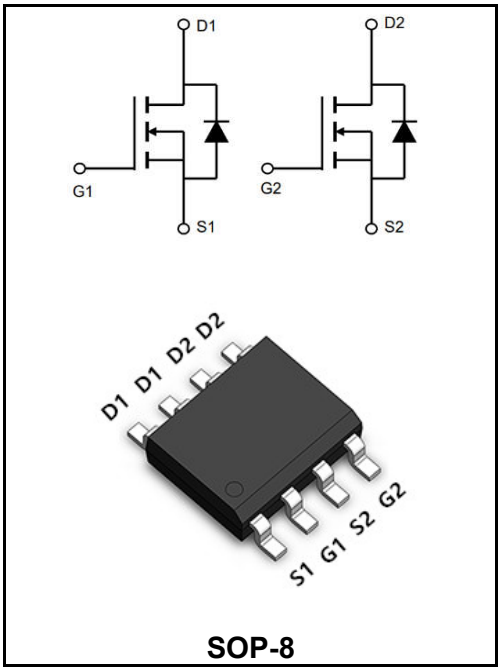
30V N+N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	7.8A
V_{DSS}	30V
R_{DSON}-typ(@V_{GS}=10V)	< 22mΩ(Type:15 mΩ)



SOP-8

lead-free ROHS

Application

- Wireless impulse
- Load switch
- Uninterruptible power supply

Product Specification Classification

Part Number	Package	Marking	Pack
YFW6H03S	SOP-8	YFW 6H03S XXXXX	3000PCS/Tape

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	VDS	30	V
Gate - Source Voltage	VGS	±20	V
Continuous Drain Current, V_{GS} @ 10V @T_C=25℃	I_D	7.8	A
Continuous Drain Current, V_{GS} @ 10V @T_C=100℃	I_D	5	A
Pulsed Drain Current[2]	I_{DM}	25	A
Single Pulse Avalanche Energy[3]	E_{AS}	8.1	mJ
Avalanche Current	I_{AS}	12.7	A
Total Power Dissipation4 @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-Case1	$R_{\theta JC}$	25	°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}	30	32.5	-	V
Static Drain-Source On-Resistance[2]	V_{GS}=10V, I_D=10A	$R_{DS(ON)}$	-	15	22	mΩ
	V_{GS}=4.5V, I_D=5A		-	20	30	mΩ
Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250uA	$V_{GS(th)}$	1.0	1.6	2.5	V
Drain-Source Leakage Current	V_{DS}=24V, V_{GS}=0V T_J=25℃	I_{DSS}	-	-	1	uA
	V_{DS}=24V , V_{GS}=0V , T_J=55℃			-	5	
Gate-Source Leakage Current	V_{GS}=±20V, V_{DS}=0V	I_{GSS}	-	-	±100	nA
Forward Transconductance	V_{DS} = 5V, I_D = 10A	g_{fs}	-	16	-	S
Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	R_g		2.5	5	Ω
Total Gate Charge (4.5V)	V_{DS}=20V V_{GS}=4.5V I_D=10A	Q_g	-	7.2	-	nC
Gate-Source Charge		Q_{gs}	-	1.4	-	nC
Gate-Drain Charge		Q_{gd}	-	2.2	-	nC
Turn-on delay time	V_{DD} =15V V_{GS}=10V R_G = 3.3Ω I_D= 5A	$t_{d(on)}$	-	4.1	-	ns
Rise Time		T_r	-	9.8	-	ns
Turn-Off Delay Time		$t_{d(OFF)}$	-	15.5	-	ns
Fall Time		t_f	-	6.0	-	ns
Input Capacitance	V_{DS}=15V V_{GS}=0V f=1.0MHz	C_{iss}	-	572	-	pF
Output Capacitance		C_{oss}	-	81	-	pF
Reverse Transfer Capacitance		C_{rss}	-	65	-	pF
Continuous Source Current[1,5]	V_G=V_D=0V , Force Current	I_S	-	-	10	A
Diode Forward Voltage[2]	V_{GS}=0V , I_S=1A , T_J=25℃	V_{SD}	-	-	1.2	V

Notes:
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 .The EAS data shows Max. rating .
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.

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Ratings and Characteristic Curves

Typical Characteristics

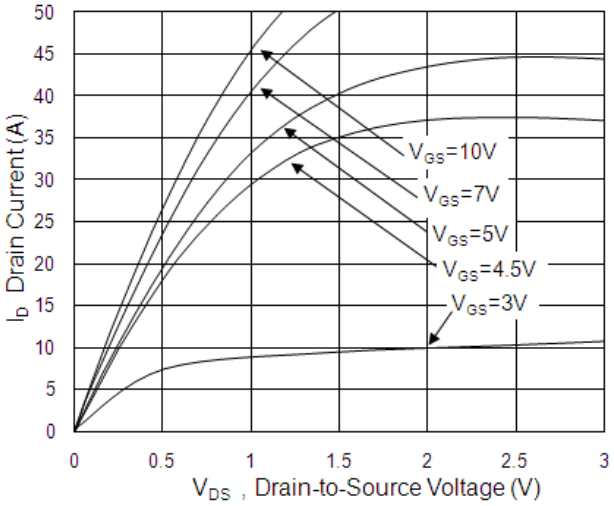


Fig.1 Typical Output Characteristics

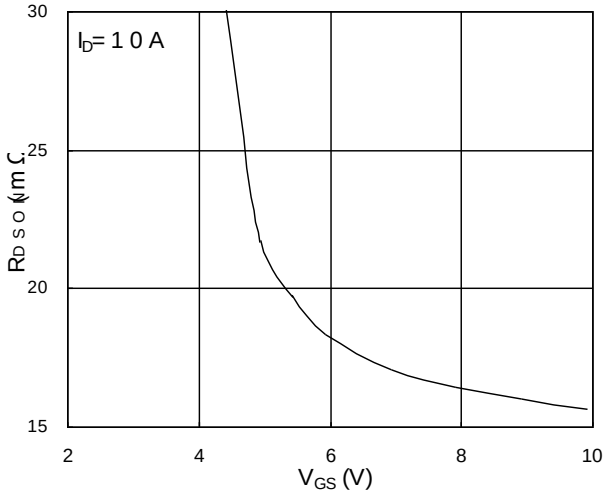


Fig.2 On-Resistance vs. Gate-Source

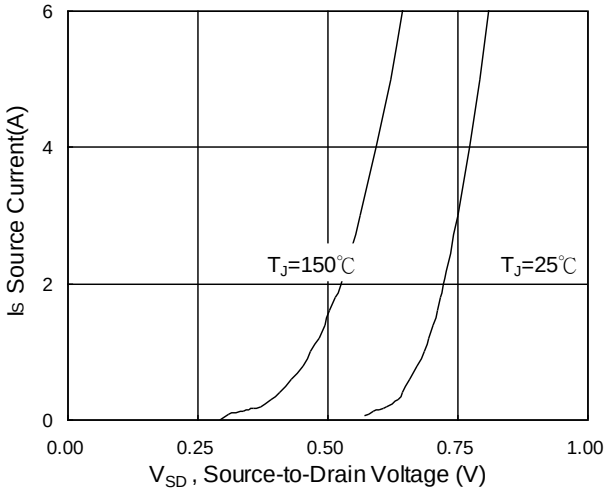


Fig.3 Forward Characteristics Of Reverse

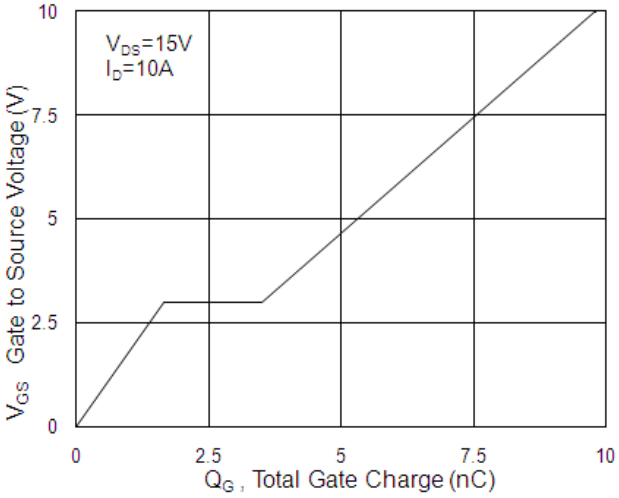


Fig.4 Gate-Charge Characteristics

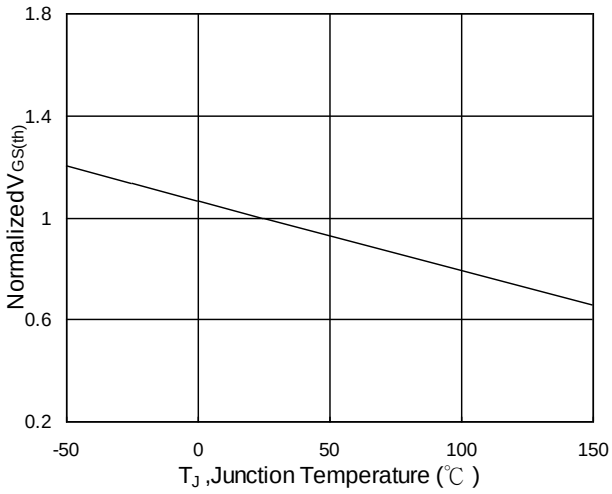


Fig.5 Normalized $V_{GS(th)}$ vs. T_J

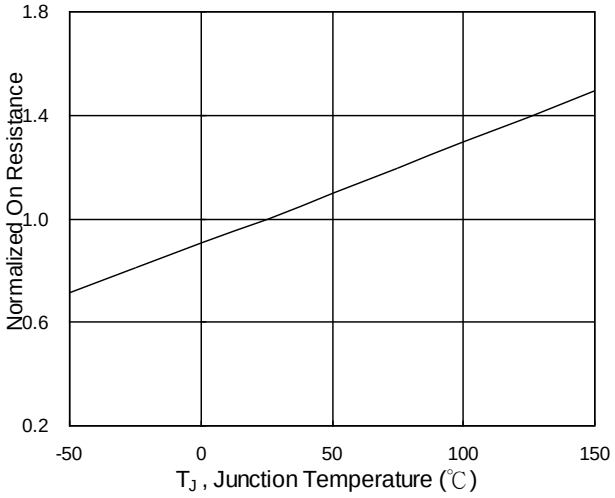


Fig.6 Normalized R_{DSON} vs. T_J

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Ratings and Characteristic Curves

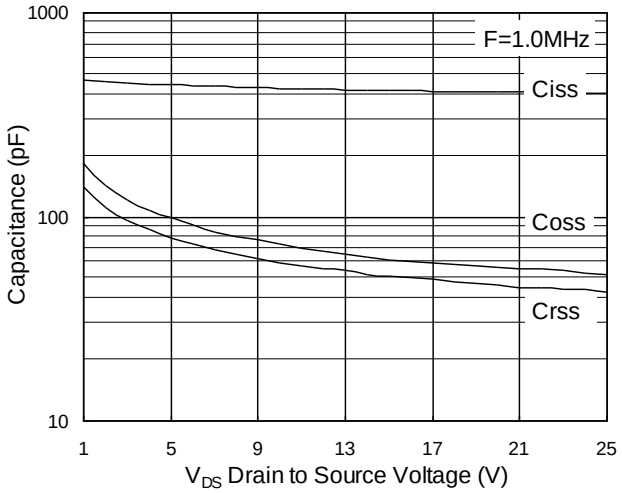


Fig.7 Capacitance

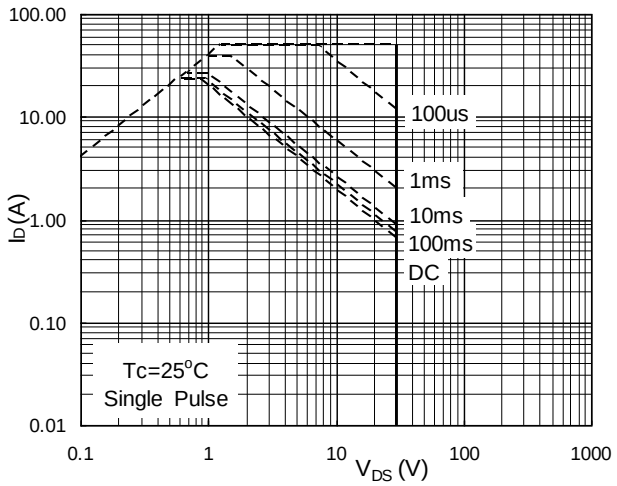


Fig.8 Safe Operating Area

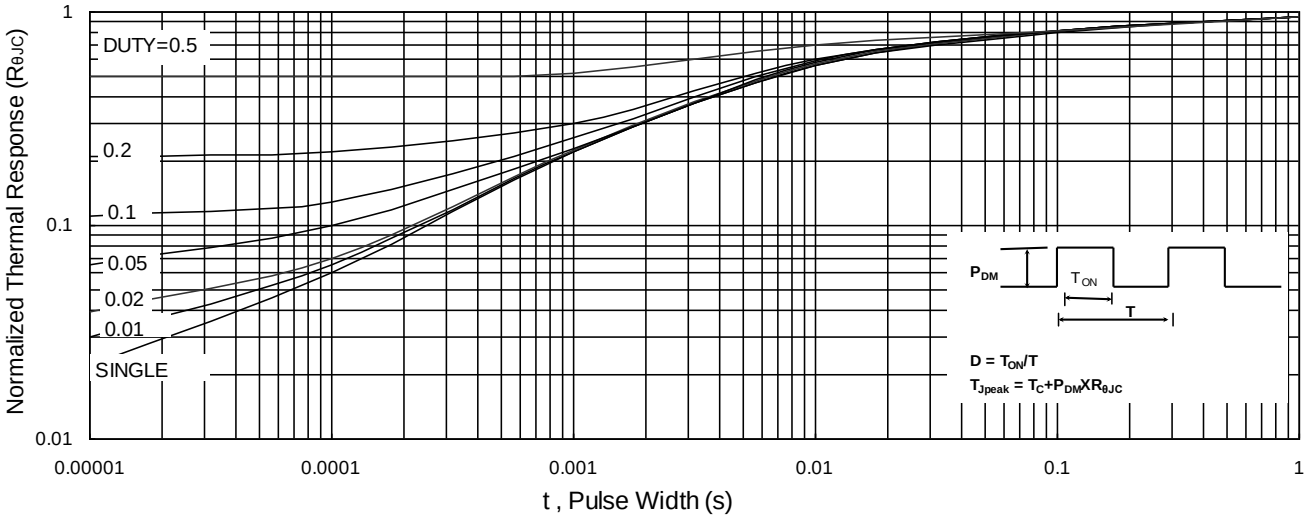


Fig.9 Normalized Maximum Transient Thermal Impedance

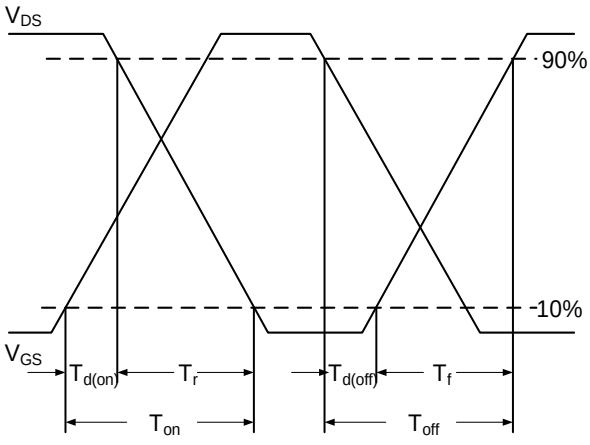


Fig.10 Switching Time Waveform

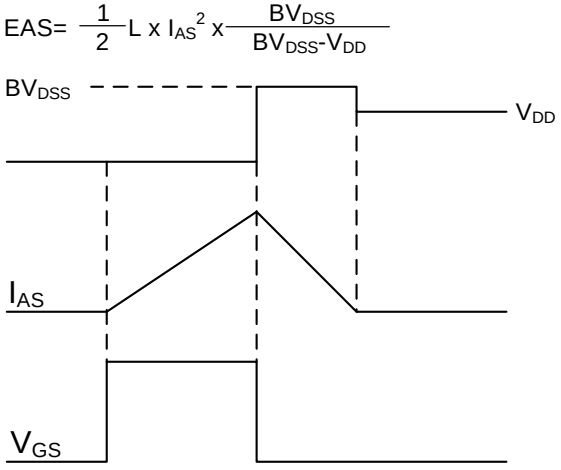
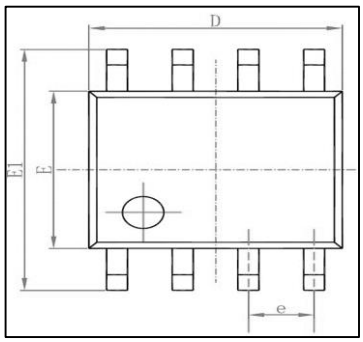


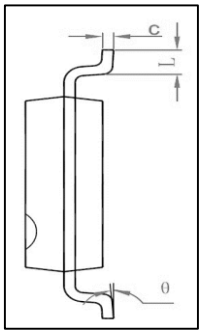
Fig.11 Unclamped Inductive Switching Waveform

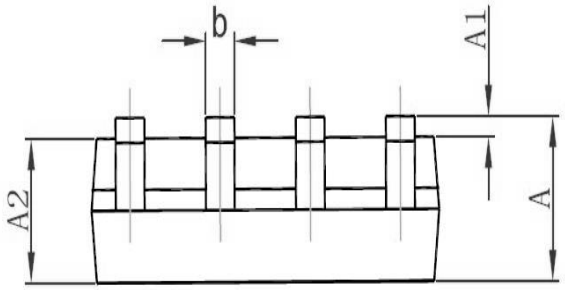
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Package Outline Dimensions Millimeters

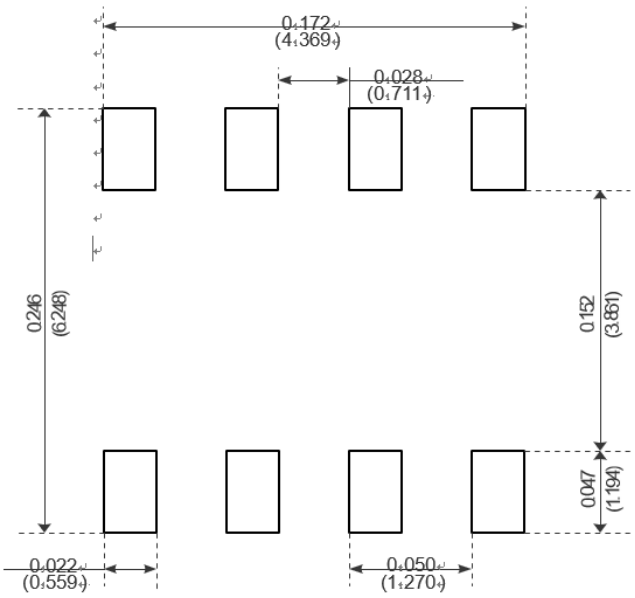
SOP-8







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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