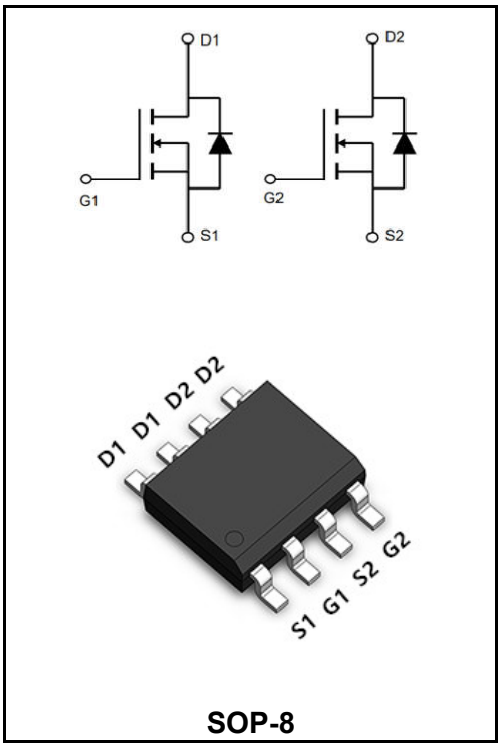
40V N+N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	10A
V_{DSS}	40V
R_{DSON}-typ(@V_{GS}=10V)	< 16mΩ(Type:12.9 mΩ)



SOP-8

lead-free ROHS

Application

- Battery protection
- Load switch
- Uninterruptible power supply

Product Specification Classification

Part Number	Package	Marking	Pack
YFW10H04S	SOP-8	YFW 10H04S XXXXX	3000PCS/Tape

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	VDS	40	V
Gate - Source Voltage	VGS	±20	V
Drain Current-Continuous	I_D	10	A
Drain Current-Continuous(T_C=100℃)	I_D(100℃)	6.4	A
Pulsed Drain Current	I_{DM}	40	A
Maximum Power Dissipation	P_D	2	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C
Thermal Resistance,Junction-to-Ambient (Note 2)	$R_{\theta JA}$	62.5	°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}	40	-	-	V
Zero Gate Voltage Drain Current	V_{DS}=40V, V_{GS}=0V	I_{DSS}	-	-	1	uA
Gate-Body Leakage Current	V_{GS}=±20V, V_{DS}=0V	I_{GSS}	-	-	±100	nA
Gate -Threshold Voltage	V_{DS}=V_{GS}, I_D=250uA	$V_{GS(th)}$	1.0	1.5	2.0	V
Drain-Source On-State Resistance	V_{GS}=10V, I_D=8A	$R_{DS(ON)}$	-	12.9	16	mΩ
	V_{GS}=4.5V, I_D=4A		-	18.9	24	mΩ
Forward Transcond uctance	V_{DS} = 5V, I_D = 8A	g_{fs}	33	-	-	S
Input Capacitance	V_{DS}=20V V_{GS}=0V f=1.0MHz	C_{iss}	-	964	-	pF
Output Capacitance		C_{oss}	-	109	-	pF
Reverse Transfer Capacitance		C_{rss}	-	96	-	pF
Turn-on delay time	V_{DD}=20V R_L=2.5 Ω V_{GS}=10V R_{GEN} = 3Ω	$t_{d(on)}$	-	5.5	-	ns
Turn-on Rise Time		T_r	-	14	-	ns
Turn-Off Delay Time		$t_{d(OFF)}$	-	24	-	ns
Turn- Off Fall Time		t_f	-	12	-	ns
Total Gate Charge	V_{DS}=20V I_D=8A V_{GS}=10V	Q_g	-	22.9	-	nC
Gate-Source Charge		Q_{gs}	-	3.5	-	nC
Gate-Drain Charge		Q_{gd}	-	5.3	-	nC
Diode Forward Voltage(Note 3)	V_{GS}=0V , I_S=9A	V_{SD}	-	0.8	1.2	V

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Ratings and Characteristic Curves

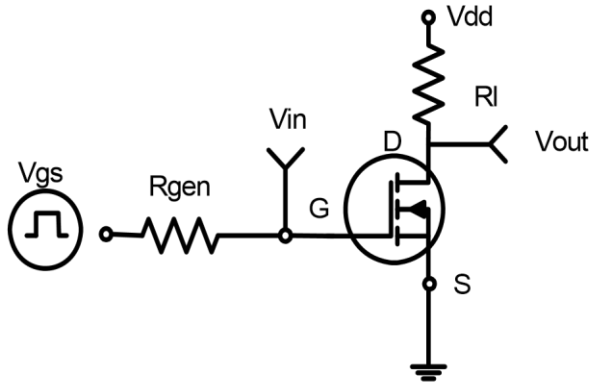


Figure 1:Switching Test Circuit

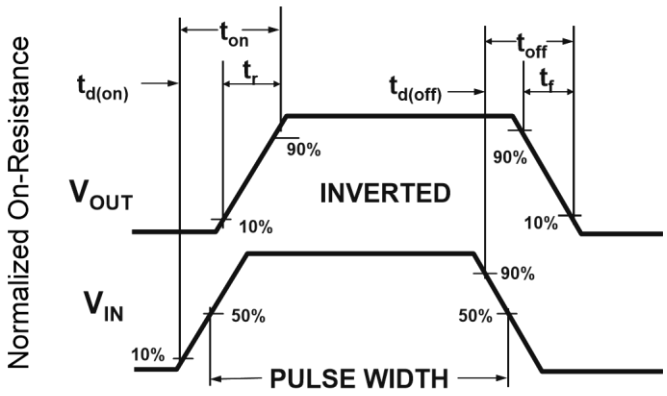


Figure 2:Switching Waveforms

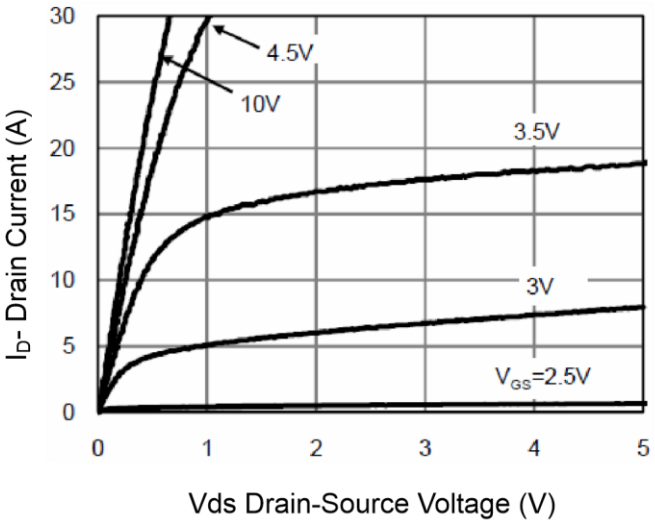


Figure 3 Output Characteristics

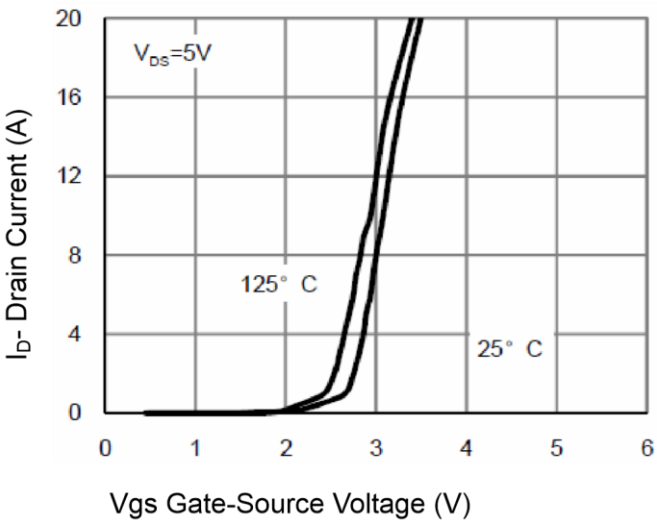


Figure 4 Transfer Characteristics

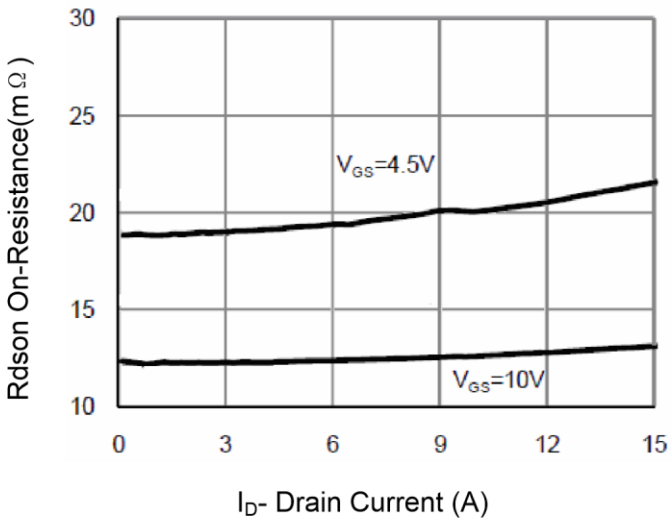


Figure 5 Drain-Source On-Resistance

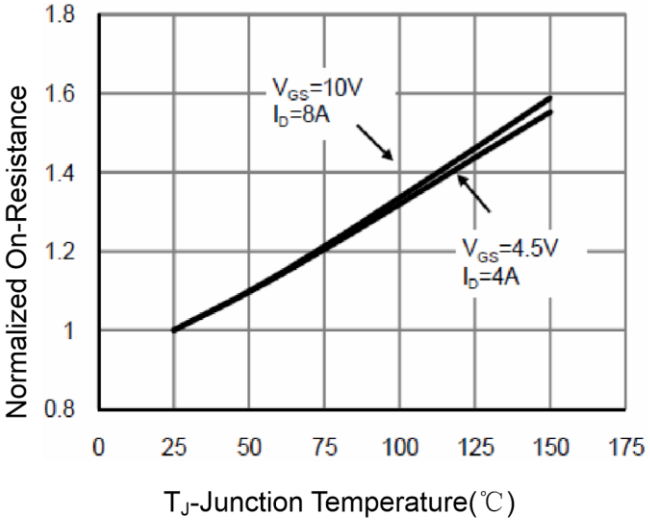
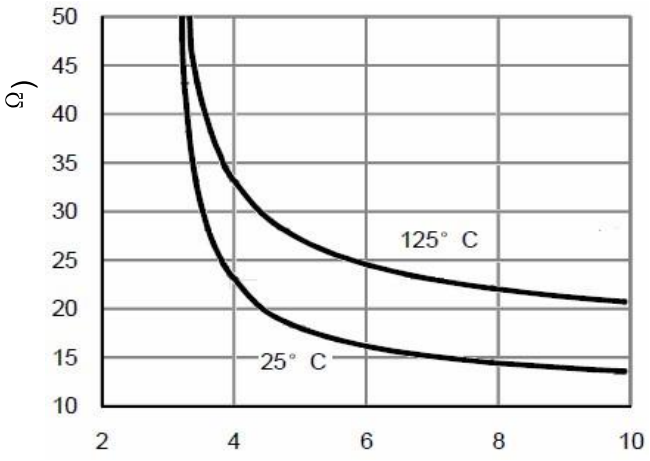


Figure 6 Drain-Source On-Resistance

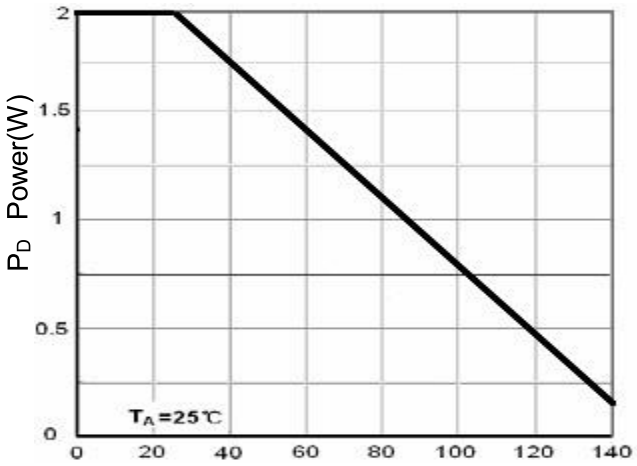
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Ratings and Characteristic Curves



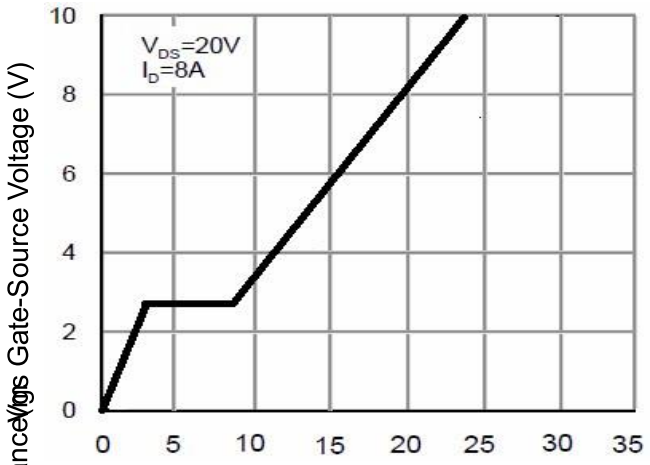
Vgs Gate-Source Voltage (V)

Figure7 Rdson vs Vgs



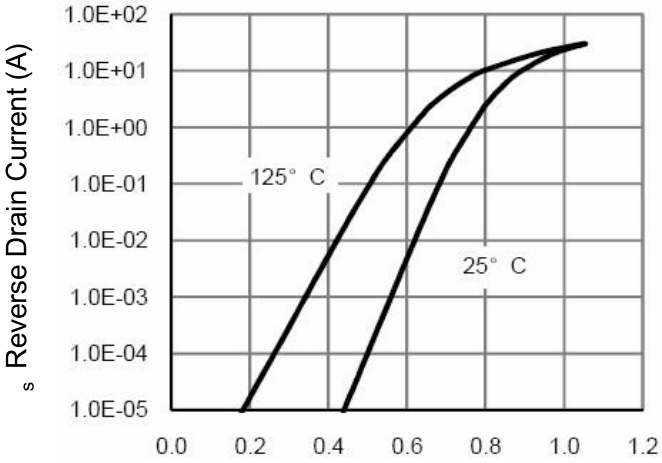
T_J-Junction Temperature(℃)

Figure 8 Power Dissipation



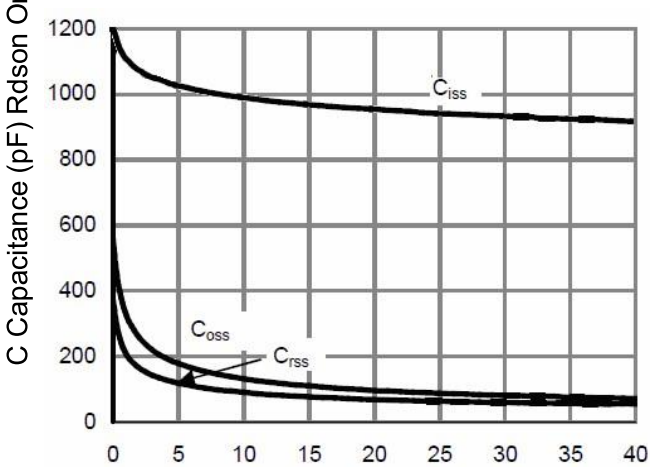
Qg Gate Charge (nC)

Figure 9 Gate Charge



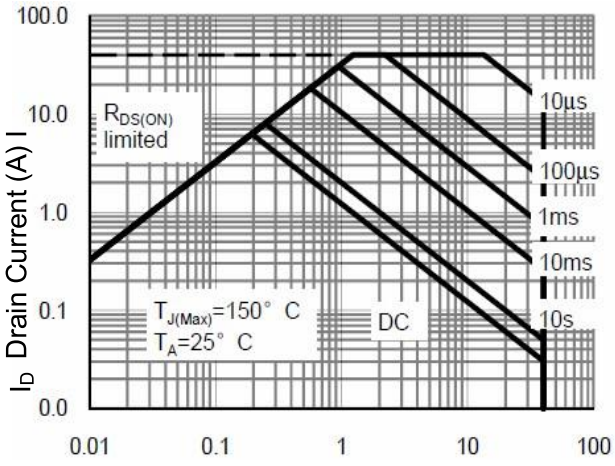
Vds Drain-Source Voltage (V)

Figure 10 Source- Drain Diode Forward



Vds Drain-Source Voltage (V)

Figure 11 Capacitance vs Vds



Vds Drain-Source Voltage (V)

Figure 12 Safe Operation Area

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Ratings and Characteristic Curves

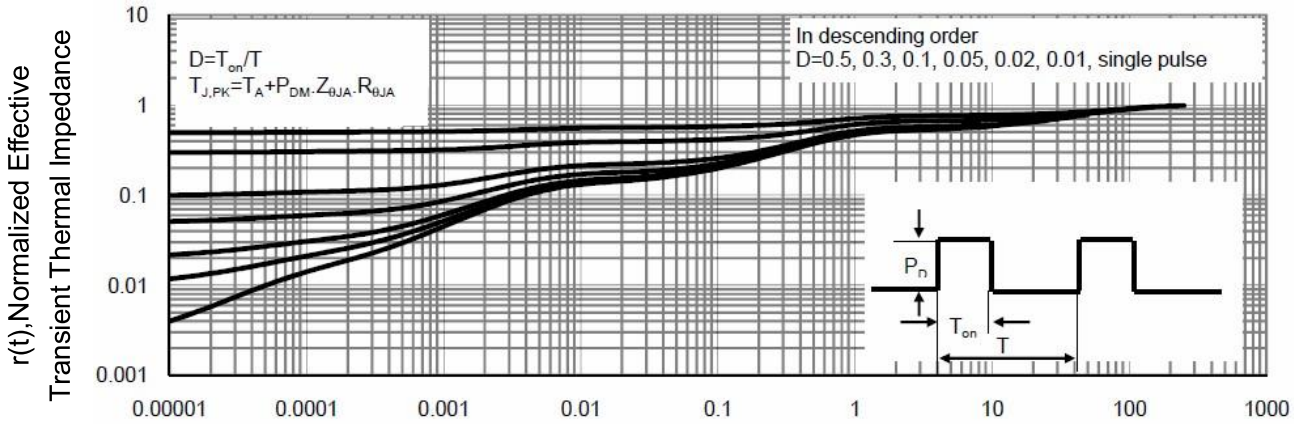
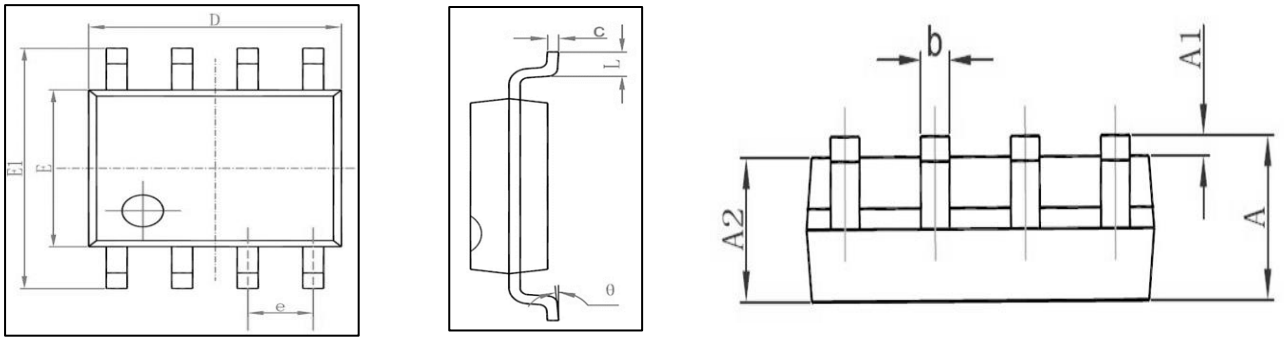


Figure 13 Normalized Maximum Transient Thermal Impedance

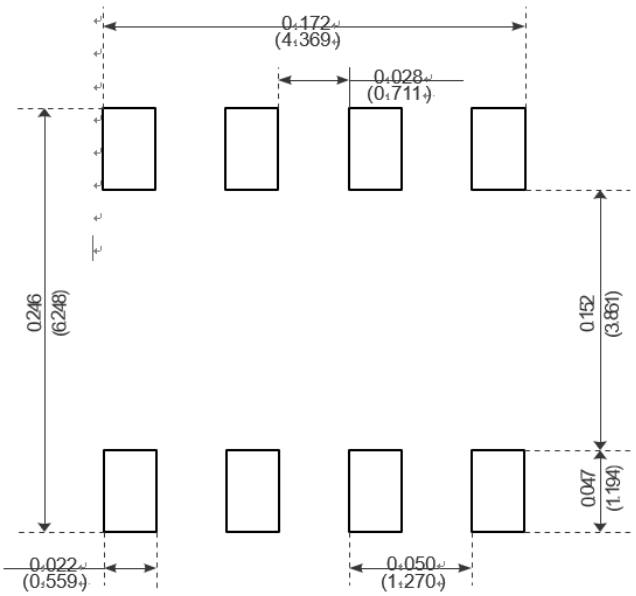
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Package Outline Dimensions Millimeters

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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