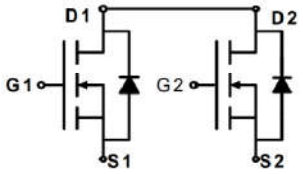
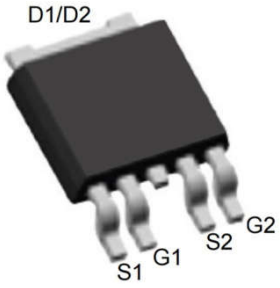
30V N+N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	80A
V_{DSS}	30V
R_{DSON}-typ(@V_{GS}=10V)	< 5.5mΩ(Type:4.5 mΩ)





TO-252-4L

Pb lead-free ROHS

Application

- Battery protection
- Load switch
- Uninterruptible power supply

Product Specification Classification

Part Number	Package	Marking	Pack
YFW80H03GD	TO-252-4L	YFW 80H03GD XXXXX	2500PCS/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_C=25℃	I_D	80	A
Continuous Drain Current, V_{GS} @ 10V[1] @T_C=100℃	I_D	51	A
Continuous Drain Current, V_{GS} @ 10V[1] @T_A=25℃	I_D	15	A
Continuous Drain Current, V_{GS} @ 10V[1] @T_A=70℃	I_D	12	A
Pulsed Drain Current[2]	I_{DM}	160	A
Single Pulse Avalanche Energy[3]	E_{AS}	115.2	mJ
Avalanche Current	I_{AS}	48	A
Total Power Dissipation[4] @T_C=25℃	P_D	59	W
Total Power Dissipation[4] @T_A=25℃	P_D	2	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]	$R_{\theta JA}$	62	°C/W
Thermal Resistance Junction-Case[1]	$R_{\theta JC}$	2.1	°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	$V(BR)_{VDSS}$	30	32	-	V
BVDSS Te mperature Coefficient	Reference to 25℃ , I_D=1mA	$\Delta BV_{DSS/\Delta TJ}$	-	0.028	-	V/℃
Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250uA	$V_{GS(th)}$	1.0	1.6	2.5	V
Static Drain-Source On Resistance note3	V_{GS}=10V, I_D=30A	$R_{DS(ON)}$	-	3.6	4.5	mΩ
	V_{GS}=4.5V, I_D=20A		-	6.7	9.5	mΩ
Zero Gate Voltage Drain Current	V_{DS}=30V, V_{GS}=0V	I_{DSS}	-	-	1.0	μA
Gate to Body Leakage Current	V_{GS}=±20V, V_{DS}=0V	I_{GSS}	-	-	±100	nA
Input Capacitance	V_{DS}=15V V_{GS}=0V f=1.0MHz	C_{iss}	-	2100	-	pF
Output Capacitance		C_{oss}	-	326	-	
Reverse Transfer Capacitance		C_{rss}	-	282	-	
Total Gate Charge	V_{DS}=15V I_D=30A V_{GS}=10V	Q_g	-	45	-	nC
Gate-Source Charge		Q_{gs}	-	3	-	
Gate-Drain(“Miller”) Charge		Q_{gd}	-	15	-	
Turn-on delay time	V_{DS} =15V I_D= 30A R_{GEN} = 3Ω V_{GS}=10V	$t_{d(on)}$	-	21	-	ns
Turn-on Rise Time		T_r	-	32	-	
Turn-Off Delay Time		$t_{d(OFF)}$	-	59	-	
Turn- Off Fall Time		t_f	-	34	-	
Maximum Continuous Drain to Source Diode Forward Current		I_S	-	-	90	A
Maximum Pulsed Drain to Source Diode Forward Current		I_{SM}	-	-	360	A
Drain to Source Diode Forward Voltage	V_{GS}=0V , I_S=30A	V_{SD}	-	-	1.2	V
Body Diode Reverse Recovery Time	I_F=20A,dI/dt=100A/μs	t_{rr}	-	15	-	ns
Body Diode Reverse Recovery Charge		Q_{rr}	-	4	-	nC

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 .The EAS data shows Max. rating .
3、The test cond≦ 300us , duty cycle ition is V_{DD}=25V,V_{GS} =10V,L=0.1mH,I_{AS}=53.8A
4、The power dissipation is limited by 175℃ 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

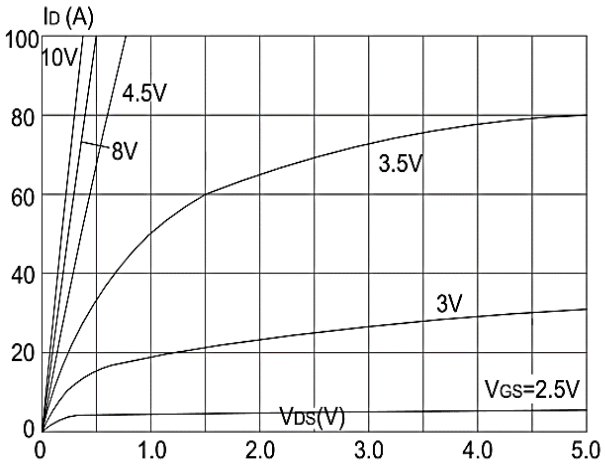


Figure1: Output Characteristics

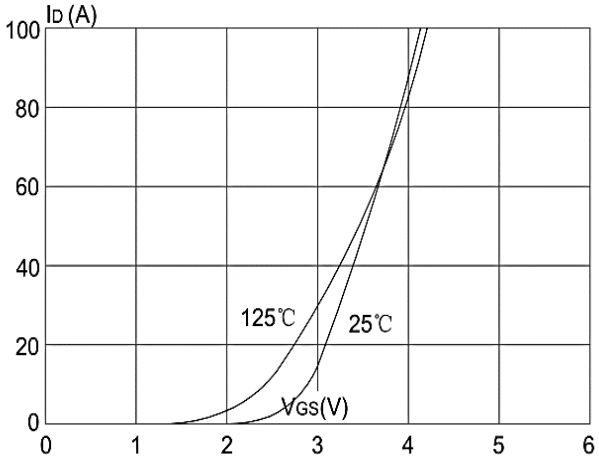


Figure 2: Typical Transfer Characteristics

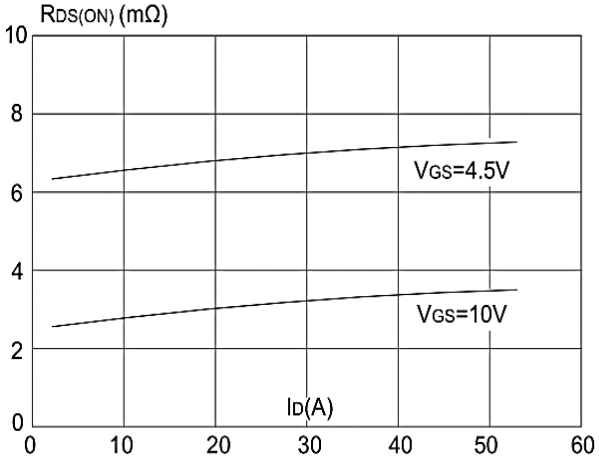


Figure 3:On-resistance vs. Drain Current

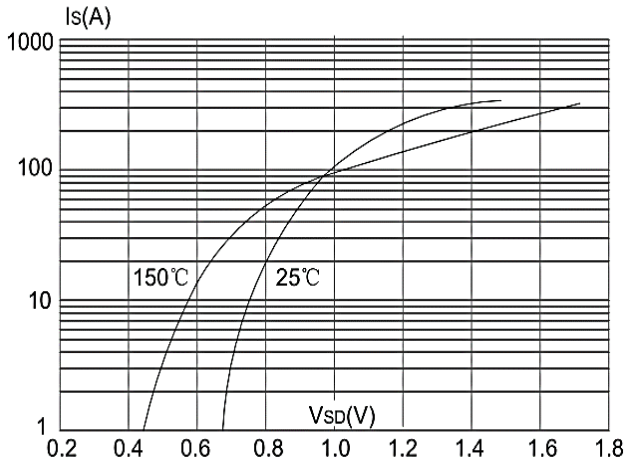


Figure 4: Body Diode Characteristics

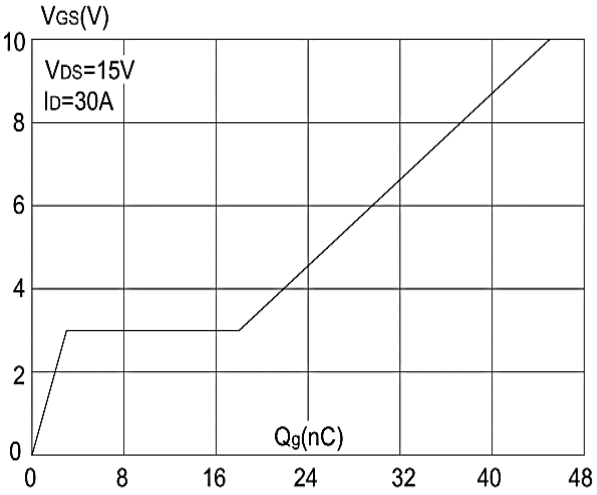


Figure 5: Gate Charge Characteristics

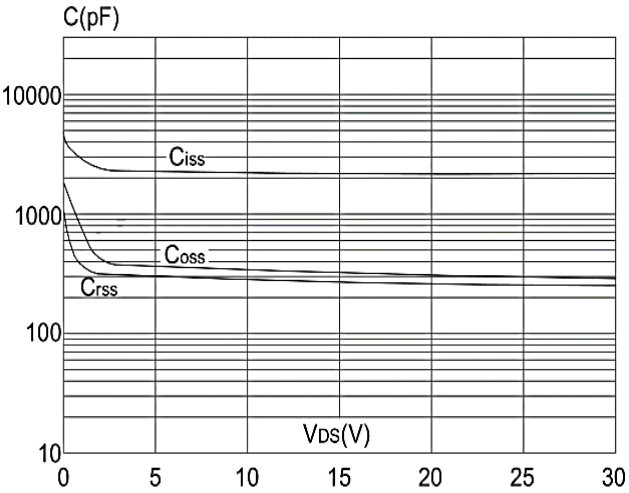


Figure 6: Capacitance Characteristics

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Ratings and Characteristic Curves

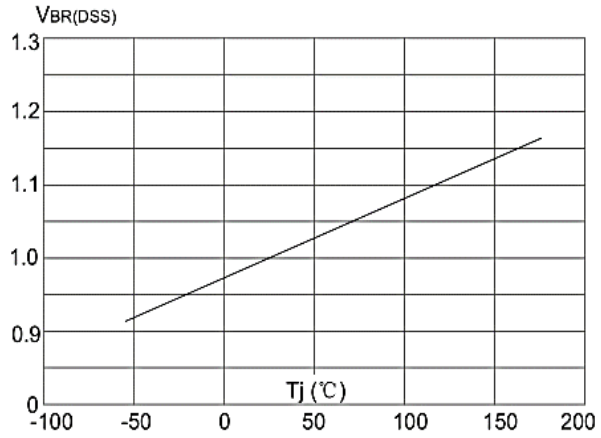


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

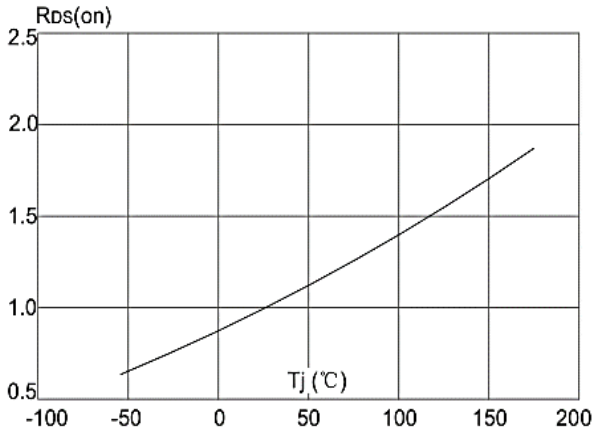


Figure 8: Normalized on Resistance vs Junction Temperature

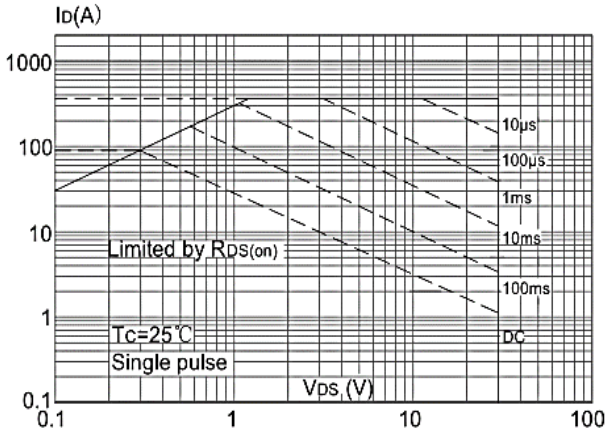


Figure 9: Maximum Safe Operating Area vs. Case Temperature

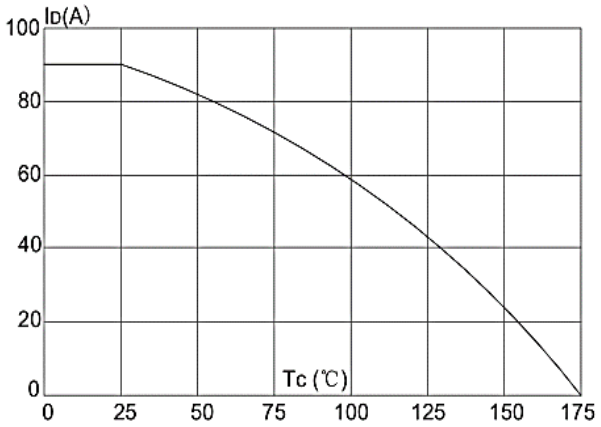


Figure 10: Maximum Continuous Drain Current

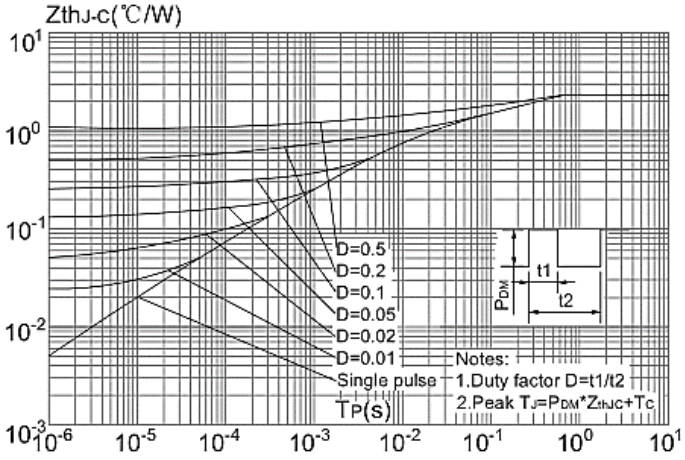
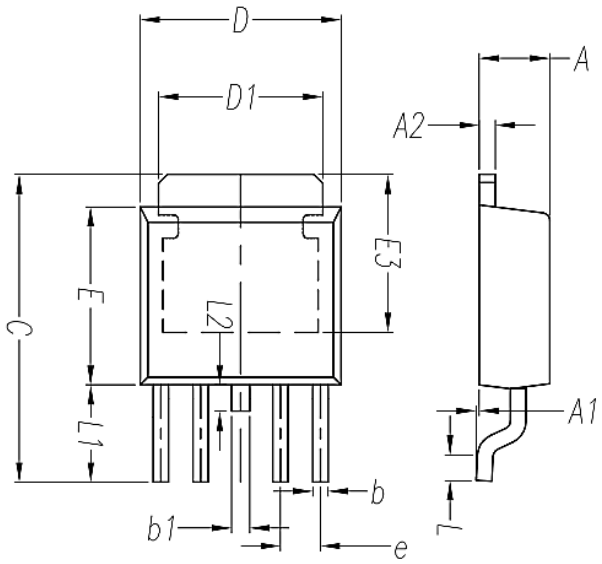


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Case

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Package Outline Dimensions Millimeters

TO-252-4L



Symbol	Common		
	mm		
	Mim	Nom	Max
D	6.30	6.55	6.80
D1	4.80	5.35	5.90
C	9.70	10.00	10.30
E	5.90	6.10	6.30
E3	4.50	5.15	5.80
L	0.90	1.35	1.80
L1	2.60	2.85	3.05
L2	0.50	0.85	1.20
b	0.30	0.50	0.70
b1	0.40	0.60	0.80
A	2.10	2.30	2.50
A2	0.40	0.53	0.65
A1	0.00	0.10	0.20
e	1.17	1.27	1.37

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