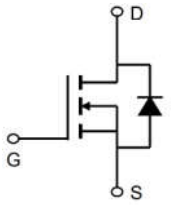
30V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	100A
V_{DSS}	30V
R_{DSON}-typ(@V_{GS}=10V)	< 5.5mΩ(Type:3.6 mΩ)





TO-252

Pb lead-free ROHS

Application

- Battery protection
- Load switch
- Uninterruptible power supply

Product Specification Classification

Part Number	Package	Marking	Pack
YFW100N03AD	TO-252	YFW 100N03AD 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} @ 10 @T_C=25℃	I_D	100	A
Continuous Drain Current, V_{GS} @ 10 @T_C=100℃	I_D	59	A
Pulsed Drain Current note1	I_{DM}	360	A
Single Pulsed Avalanche Energy note2	E_{AS}	95	mJ
Avalanche Current	I_{AS}	19.5	A
Total Power Dissipation4 @T_C=25℃	P_D	68	W
Thermal Resistance Junction-ambient (Steady State)1	$R_{\theta JA}$	62	°C/W
Thermal Resistance Junction-Ambient 1 (t ≤10s)	$R_{\theta JA}$	25	°C/W
Thermal Resistance Junction to Case	$R_{\theta JC}$	2.2	°C/W
Operating Junction Temperature Range	, T_J T_{STG}	-55 to +175	°C

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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)DSS**	30	32	-	**V**
BVDSS Temperature Coefficient	Reference to 25℃, ID=1mA	**$\Delta BV_{DSS/\Delta TJ}$**		0.028		**V/°C**
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	5.5	**mΩ**
	V_{GS}=4.5V, I_D=20A		-	6.7	9.5	
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	IF=20A,dI/dt=100A/μs	**t_{rr}**	-	15	-	**ns**
Body Diode Reverse Recovery Charge		**Q_{rr}**	-	4	-	**nC**

Notes:
1、Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
2、The test condition is, VDD =15V, VG =10V, RG =25Ω, L=0.5mH, IAS =19.5A
3、The data tested by pulsed Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%
4、The power dissipation is limited by 150℃ junction temperature

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Ratings and Characteristic Curves

Typical Characteristics

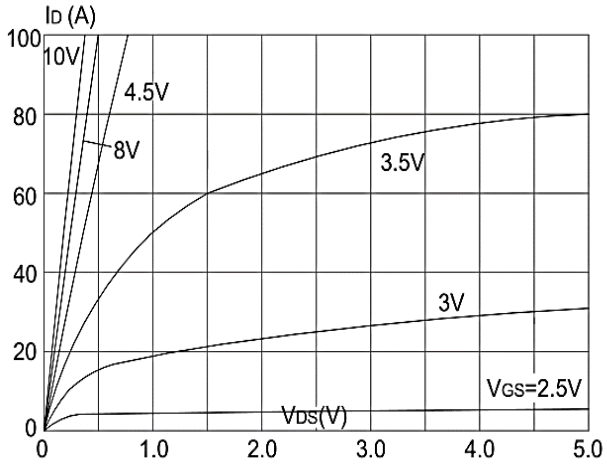


Figure1: Output Characteristics

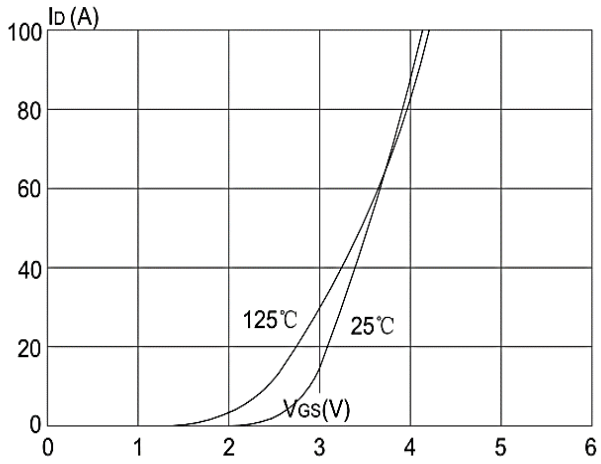


Figure 2: Typical Transfer Characteristics

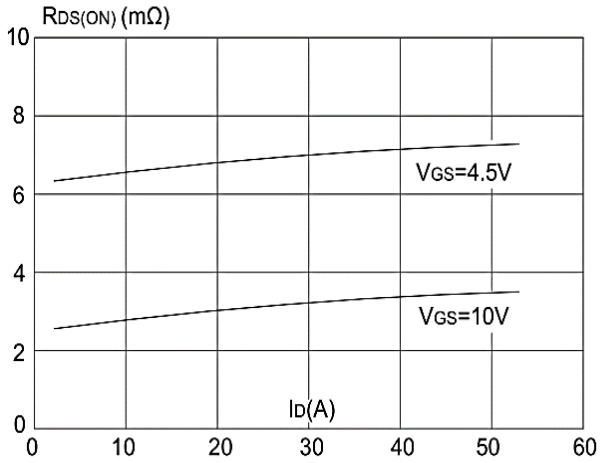


Figure 3:On-resistance vs. Drain Current

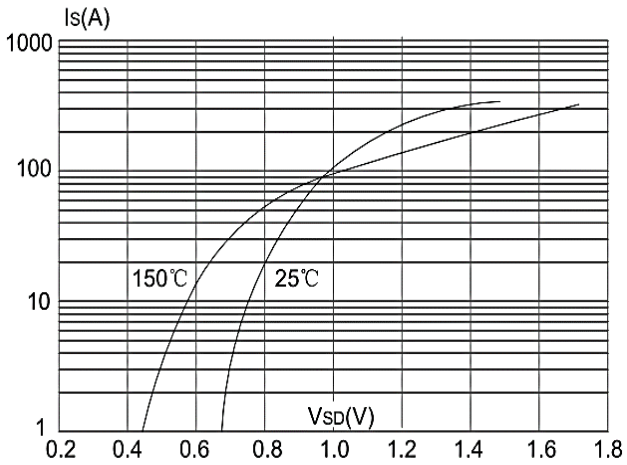


Figure 4: Body Diode Characteristics

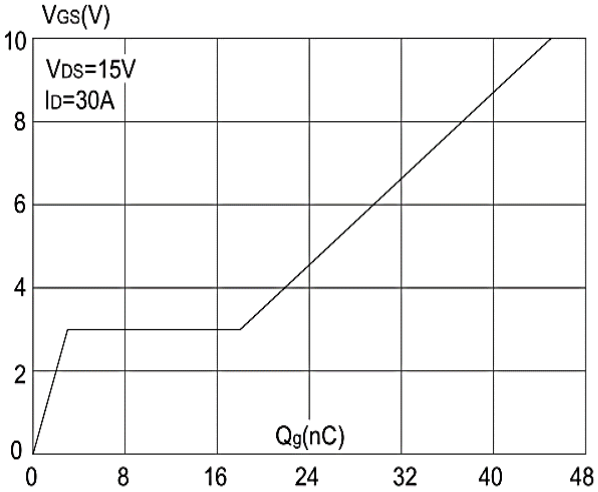


Figure 5: Gate Charge Characteristics

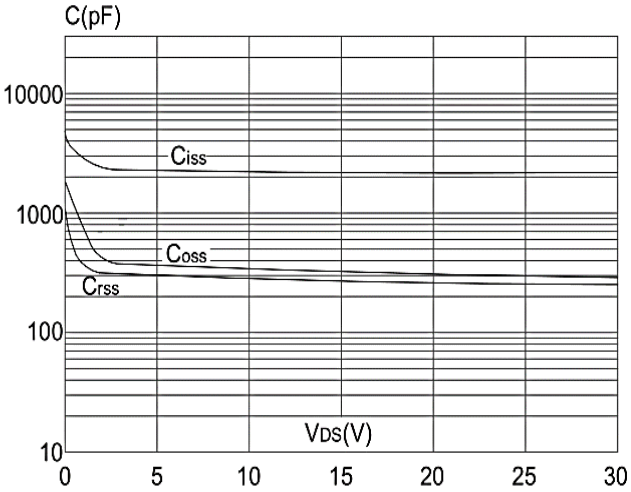


Figure 6: Capacitance Characteristics

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Ratings and Characteristic Curves

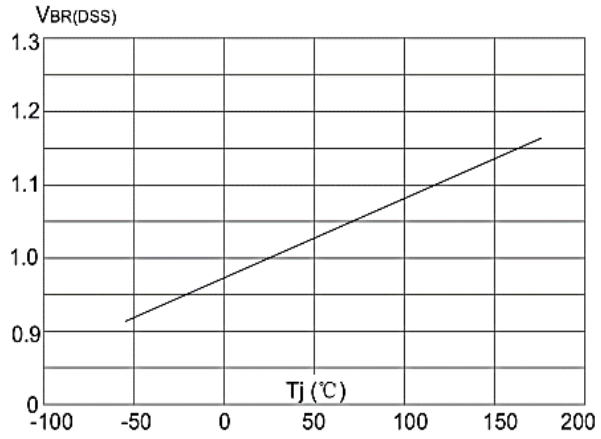


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

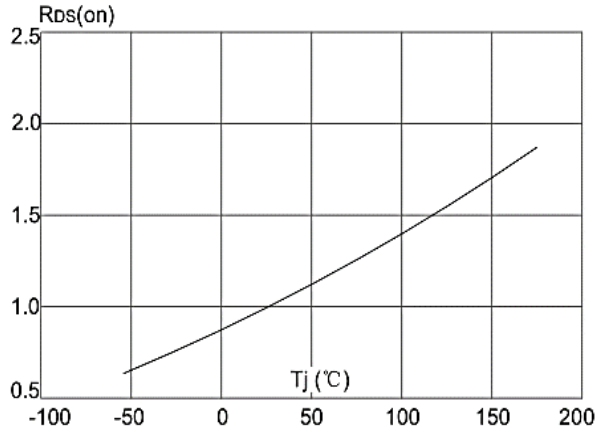


Figure 8: Normalized on Resistance vs Junction Temperature

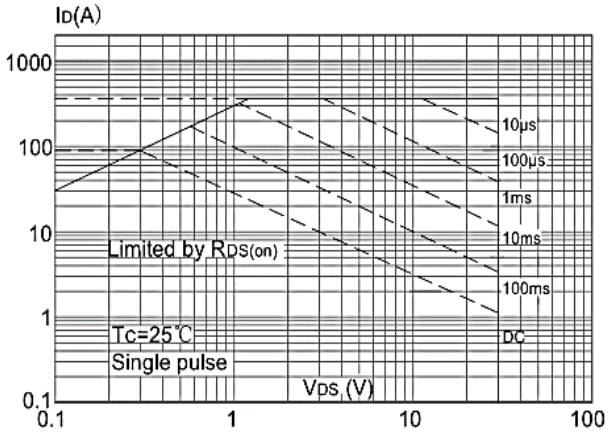


Figure 9: Maximum Safe Operating Area vs. Case Temperature

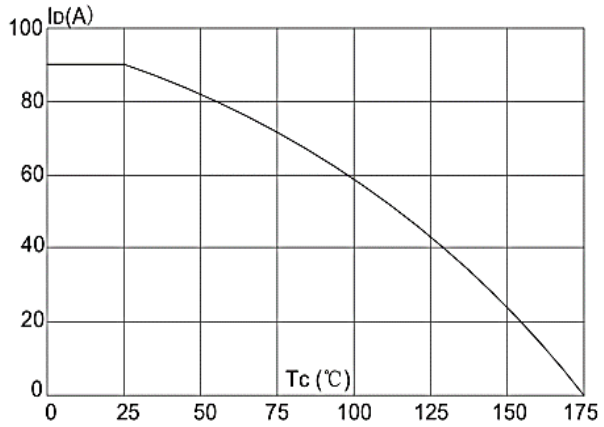


Figure 10: Maximum Continuous Drain Current

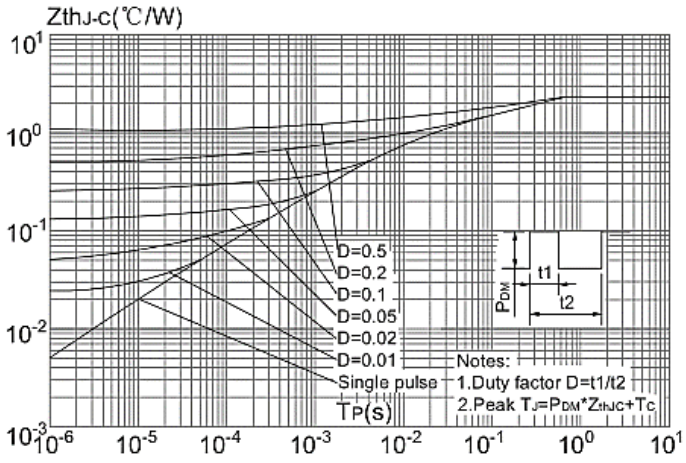
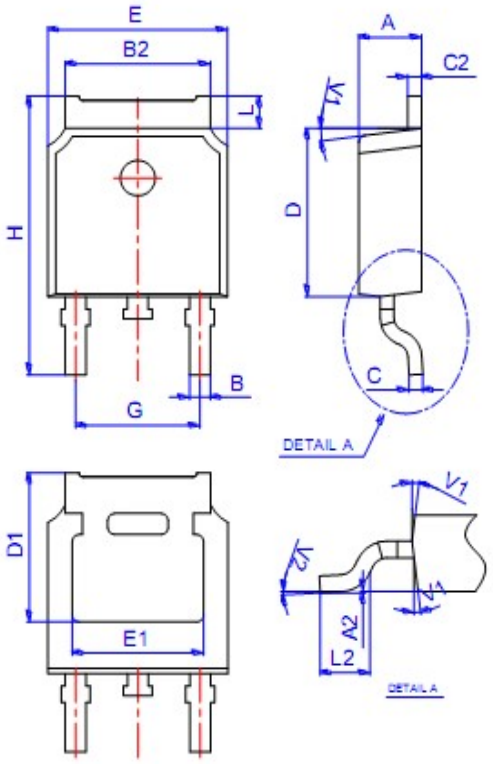


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Case

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Package Outline Dimensions Millimeters

TO-252



Dim.	Min.	Typ.	Max.
A	2.10	-	2.50
A2	0	-	0.10
B	0.66	-	0.86
B2	5.18	-	5.48
C	0.40	-	0.60
C2	0.44	-	0.58
D	5.90	-	6.30
D1	5.30REF		
E	6.40	-	6.80
E1	4.63	-	-
G	4.47	-	4.67
H	9.50	-	10.70
L	1.09	-	1.21
L2	1.35	-	1.65
V1	-	7°	-
V2	0°	-	6°

All Dimensions in millimeter

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