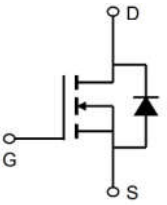
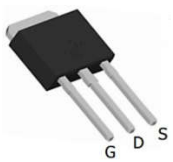
30V N-CHANNEL ENHANCEMENT MODE MOSFET

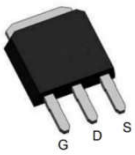
MAIN CHARACTERISTICS

I_D	100A
V_{DSS}	30V
R_{DSON}-typ(@V_{GS}=10V)	< 6.5mΩ(Type:4.5 mΩ)





TO-251



TO-251S

Pb lead-free ROHS

Application

- Battery protection
- Load switch
- Uninterruptible power supply

Product Specification Classification

Part Number	Package	Marking	Pack
YFW100N03AMJ	TO-251	YFW 100N03AMJ XXXXX	4000PCS/Tape
YFW100N03AMJ	TO-251S	YFW 100N03AMJ XXXXX	4000PCS/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	100	A
Continuous Drain Current, V_{GS} @ 10V[1]@T_C=75℃	I_D	55	A
Pulsed Drain Current[2]	I_{DM}	240	A
Single Pulse Avalanche Energy[3]	E_{AS}	56	mJ
Avalanche Current	I_{AS}	15	A
Total Power Dissipation[4] @T_C=25℃	P_D	46	W
Total Power Dissipation[4] @T_A=25℃	P_D	2.72	W
Storage Temperature Range	T_{STG}	-55 to +175	°C
Operating Junction Temperature Range	T_J	-55 to +175	°C
Thermal Resistance, Junction-to-Ambient [1]	$R_{\theta JA}$	62	°C/W
Thermal Resistance Junction-Case[1]	$R_{\theta JC}$	2.72	°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)DSS**	30	32	-	**V**
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**
Gate -Threshold Voltage	V_{DS}=V_{GS}, I_D=250uA	**$V_{GS(th)}$**	1.0	1.5	2.5	**V**
Static Drain-Source on-Resistance	V_{GS}=10V, I_D=30A	**$R_{DS(ON)}$**	-	4.5	6.5	**mΩ**
	V_{GS}=4.5V, I_D=20A		-	7.5	12	
Input Capacitance	V_{DS}=15V V_{GS}=0V f=1.0MHz	**C_{iss}**	-	1614	-	**pF**
Output Capacitance		**C_{oss}**	-	245	-	
Reverse Transfer Capacitance		**C_{rss}**	-	215	-	
Total Gate Charge	V_{DS}=15V I_D=30A V_{GS}=10V	**Q_g**	-	33.7	-	**nC**
Gate-Source Charge		**Q_{gs}**	-	8.5	-	
Gate-Drain(“Miller”) Charge		**Q_{gd}**	-	7.5	-	
Turn-on delay time	V_{DS}=15V I_D=30A R_{GEN}=3Ω V_{GS}=10V	**$t_{d(on)}$**	-	7.5	-	**ns**
Turn-on Rise Time		**T_r**	-	14.5	-	
Turn-Off Delay Time		**$t_{d(OFF)}$**	-	35.2	-	
Turn-Off Fall Time		**t_f**	-	9.6	-	
Maximum Continuous Drain to Source Diode Forward Current		**I_S**	-	-	70	**A**
Maximum Pulsed Drain to Source Diode Forward Current		**I_{SM}**	-	-	280	**A**
Drain to Source Diode Forward Voltage	V_{GS}=0V , I_S=30A	**V_{SD}**	-	-	1.2	**V**

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 ≦ 300us , duty cycle ≦ 2%
3、The EAS data shows Max. rating . The test condition is VDD=25V,VGS=10V,L=0.1mH,IAS=15A
4、The power dissipation is limited by 175℃ junction temperature
5、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

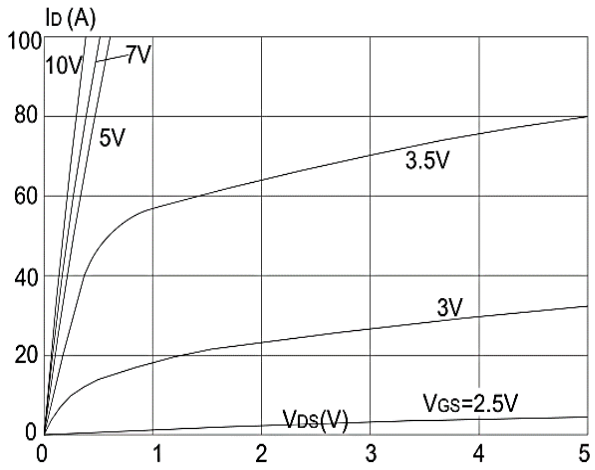


Figure1: Output Characteristics

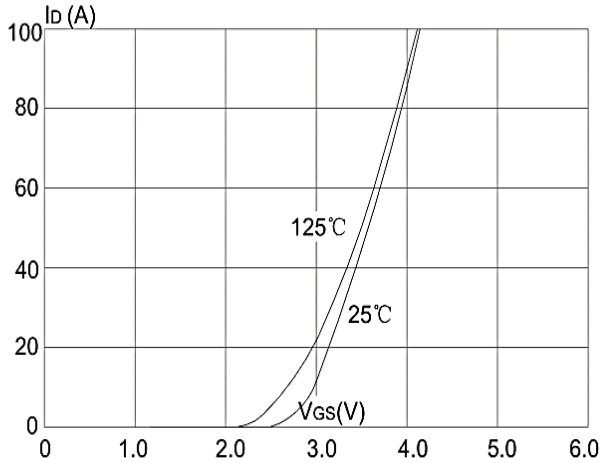


Figure 2: Typical Transfer Characteristics

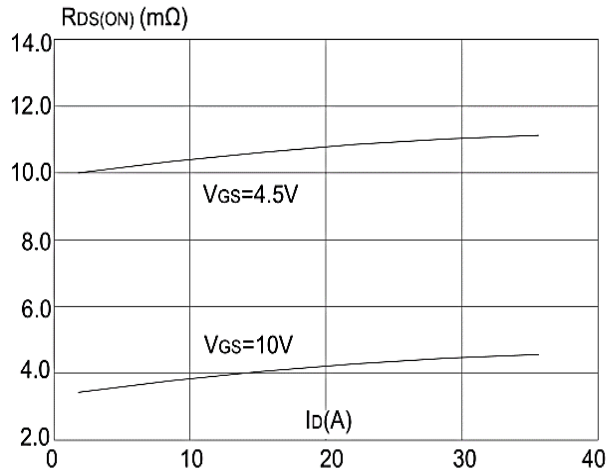


Figure 3:On-resistance vs. Drain Current

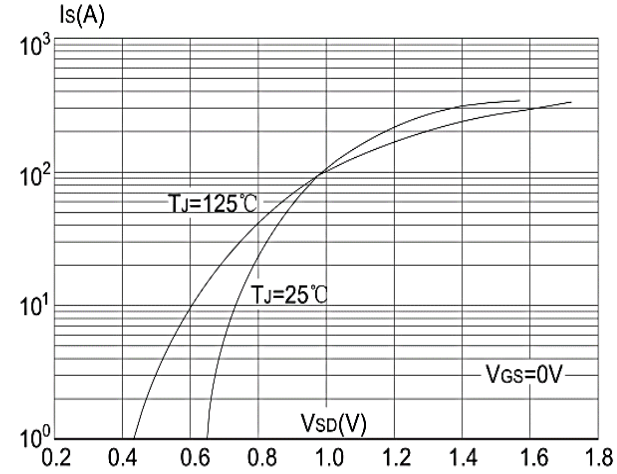


Figure 4: Body Diode Characteristics

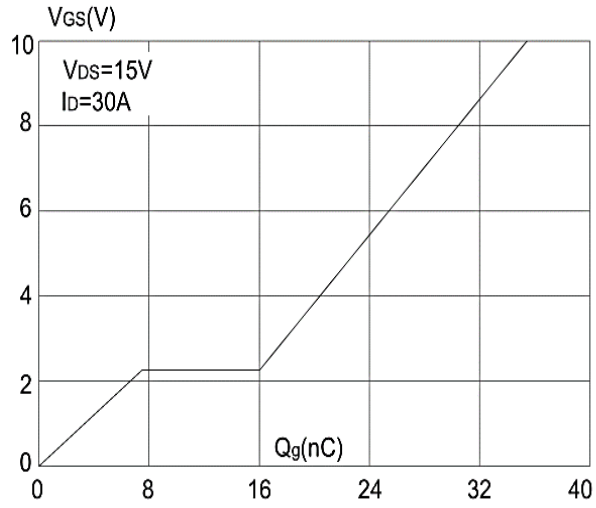


Figure 5: Gate Charge Characteristics

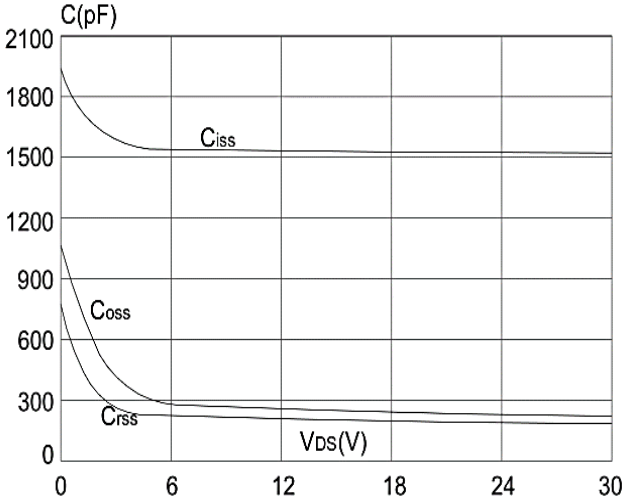


Figure 6: Capacitance Characteristics

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Ratings and Characteristic Curves

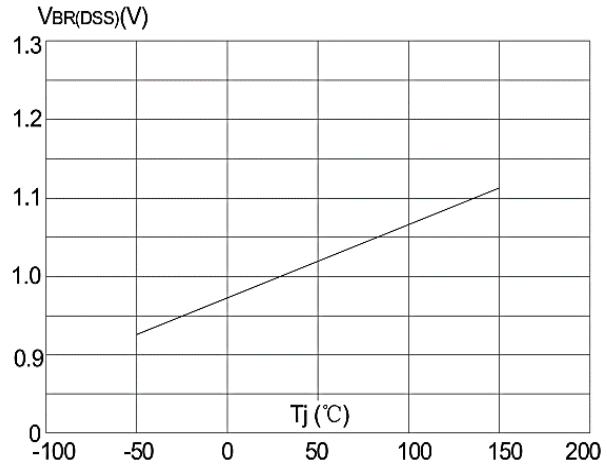


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

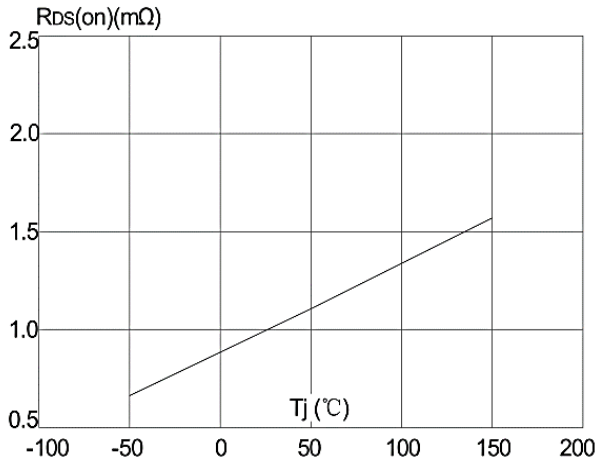


Figure 8: Normalized on Resistance vs Junction Temperature

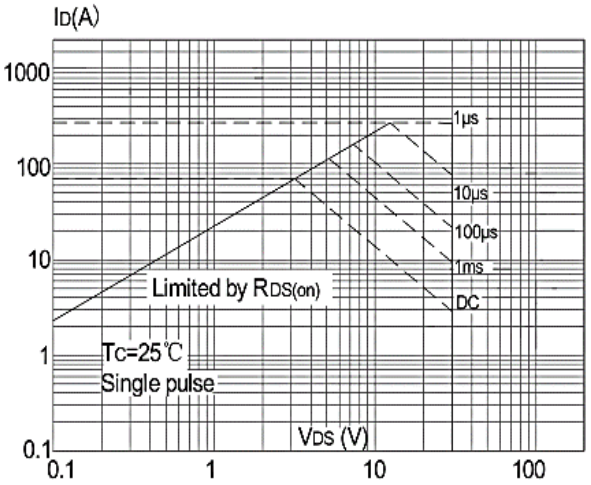


Figure 9: Maximum Safe Operating Area vs. Case Temperature

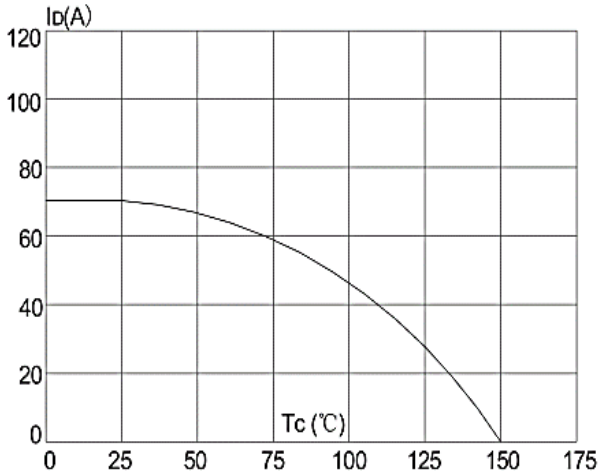


Figure 10: Maximum Continuous Drain Current

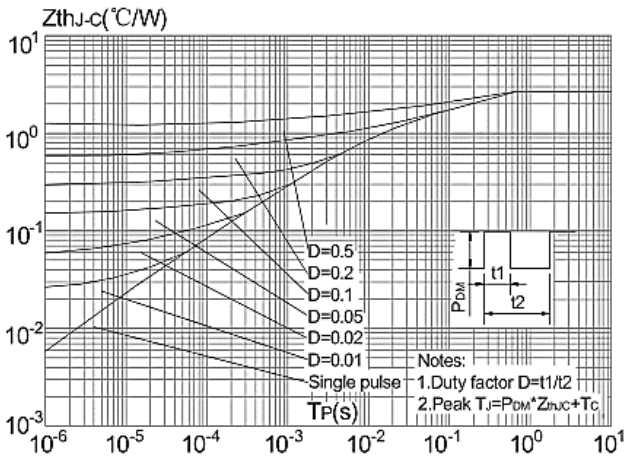
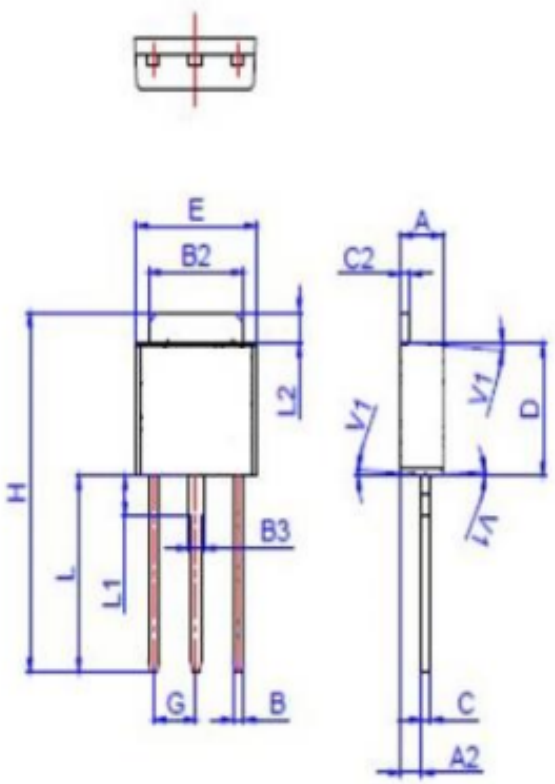


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ca

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Ratings and Characteristic Curves

TO-251

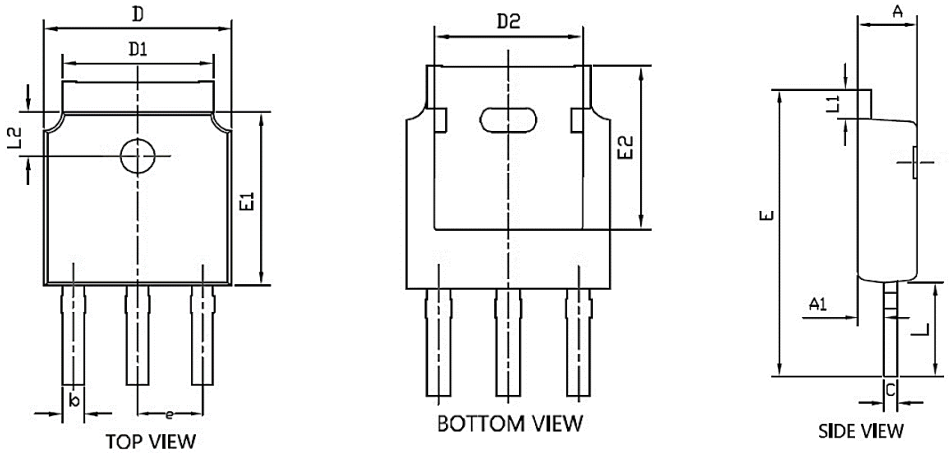


Pef.	Dimensions					
	Millomenters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.088		0.095
A2	0.90		1.20	0.035		0.047
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
B3	0.76		0.85	0.030		0.033
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.70	0.252		0.264
G		2.30			0.091	
H	16.0		17.0	0.630		0.669
L	8.90		9.40	0.350		0.370
L1	1.80		1.90	0.071		0.075
L2	1.37		1.50	0.054		0.059
V1		4°			4°	

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Package Outline Dimensions Millimeters

TO-251S



Symbol	Common		
	mm		
	Mim	Nom	Max
A	2.2	2.3	2.4
A1	0.9	1.0	1.1
b	0.66	0.76	0.86
C	0.46	0.52	0.58
D	6.50	6.6	6.7
D1	5.15	5.3	5.45
D2	4.6	4.8	4.95
E	10.4	----	11.5
E1	6.0	6.1	6.2
E2	5.400REF		
e	2.286BSC		
L	3.5	4.0	4.3
L1	0.9	---	1.27
L2	1.4	---	1.9

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