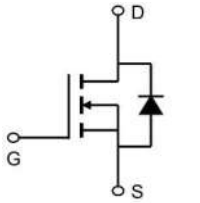
1000V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	2A
V_{DSS}	1000V
R_{DSON}-typ(@V_{GS}=10V)	< 7.2Ω(Type:6Ω)



TO-252

Application

- Uninterruptible Power Supply(UPS)
- Power Factor Correction (PFC)

Product Specification Classification

Part Number	Package	Marking	Pack
YFW2N100AD	TO-252	YFW 2N100AD XXXXX	2500PCS/Tape

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage (V_{GS} = 0V)	V_{DS}	1000	V
Continuous Drain Current	I_D	2	A
Pulsed Drain Current	I_{DM}	8	A
Gate - Source Voltage	V_{GS}	±30	V
Single Pulse Avalanche Energy	E_{AS}	45	mJ
Avalanche Current	I_{AR}	3	A
Repetitive Avalanche Energy	E_{AR}	27	mJ
Power Dissipation(T_C=25℃)	P_D	75	W
Operating Junction and Storage Temperature Range	T_J ,T_{STG}	-55 to +150	°C
Thermal Resistance, Junction-to-case	$R_{\theta JC}$	1.67	K/W
Thermal Resistance, Junction ambient	$R_{\theta JA}$	60	K/W

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**	1000	-	-	**V**
Zero Gate Voltage Drain Current	V_{DS}=1000V , V_{GS}=0V, T_J=25℃	**I_{DSS}**	-	-	1	**μA**
Gate-Source Leakage	V_{GS}=±20V	**I_{GSS}**	-	-	±100	**nA**
Gate- Source Threshold Voltage	V_{DS}= V_{GS}, I_D=250μA	**$V_{GS(th)}$**	2.0	-	4.0	**V**
Drain-Source On-Resistance (note3)	V_{GS}=10V, I_D=1A	**$R_{DS(ON)}$**	-	6	7.2	**Ω**
Input Capacitance	V_{DS}=25V V_{GS}=0V f=1MHz	**C_{iss}**	-	419	-	**pF**
Output Capacitance		**C_{oss}**	-	45	-	
Reverse Transfer Capacitance		**C_{rss}**	-	9	-	
Total Gate Charge	V_{DD}=800V I_D=2A V_{GS}=15V	**Q_g**	-	16	-	**nC**
Gate-Source Charge		**Q_{gs}**	-	2	-	
Gate-Drain Charge		**Q_{gd}**	-	8	-	
Turn-on delay time	V_{DD}=500V I_D=2A R_G=25Ω	**$t_{d(on)}$**	-	36	-	**nS**
Turn-on Rise Time		**T_r**	-	12	-	
Turn-Off Delay Time		**$t_{d(OFF)}$**	-	100	-	
Turn-Off Fall Time		**t_f**	-	43	-	
Continuous Body Diode Current	T_C=25℃	**I_S**	-	-	2	**A**
Pulsed Diode Forward Current		**I_{SM}**	-	-	8	
Body Diode Voltage	T_J = 25ºC, I_{SD} = 1A, V_{GS} = 0V	**V_{SD}**	-	-	1.4	**V**
Reverse Recovery Time	V_{GS} = 0V,I_S = 2A diF/dt =100A /μs	**t_{rr}**	-	432.5	-	**nS**
Reverse Recovery Charge		**Q_{rr}**	-	424	-	**uC**

Notes
1. Repetitive Rating: Pulse width limited by maximum junction temperature
2. L = 10.0mH, VDD = 50V, RG = 25 Ω, Starting TJ = 25 ºC
3. Pulse Test: Pulse width ≤ 300μs, Duty Cycle ≤ 1%

Ratings and Characteristic Curves

Figure 1. Output Characteristics (T_J = 25ºC)

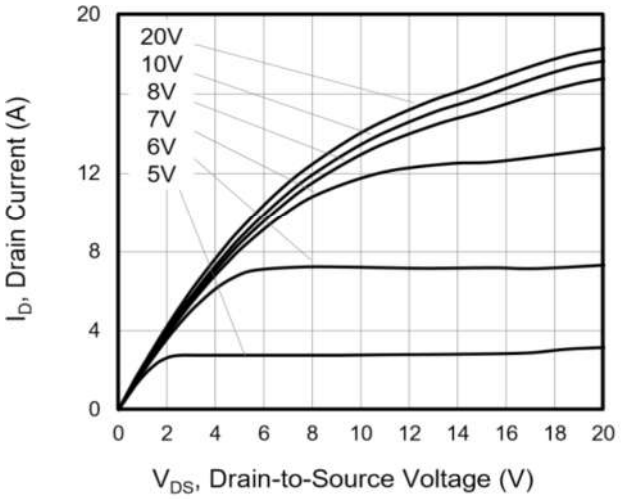


Figure 2. Body Diode Forward Voltage

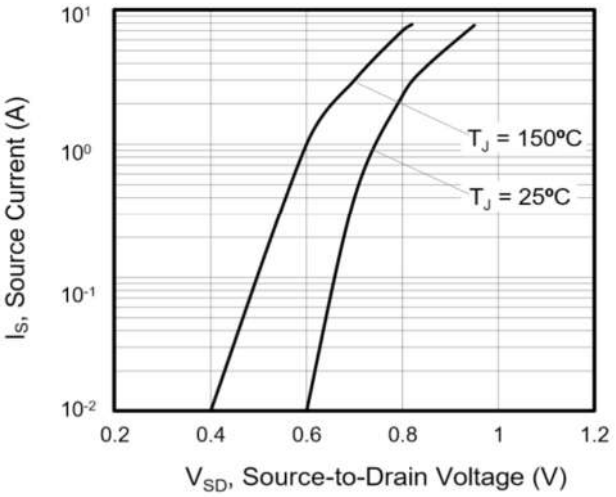


Figure 3. Drain Current vs. Temperature

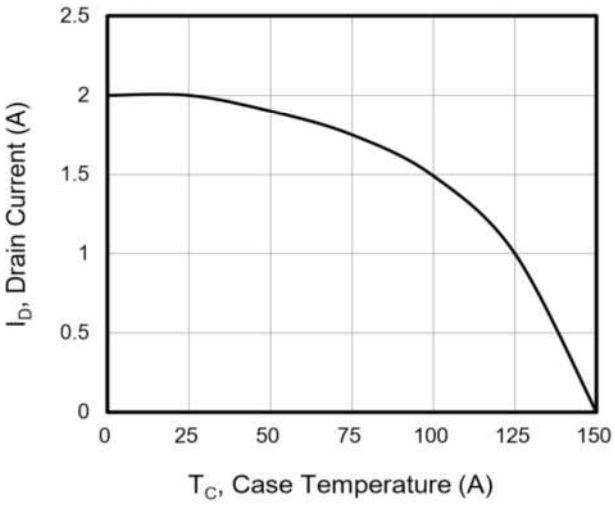


Figure 4. BV_{DSS} Variation vs. Temperature

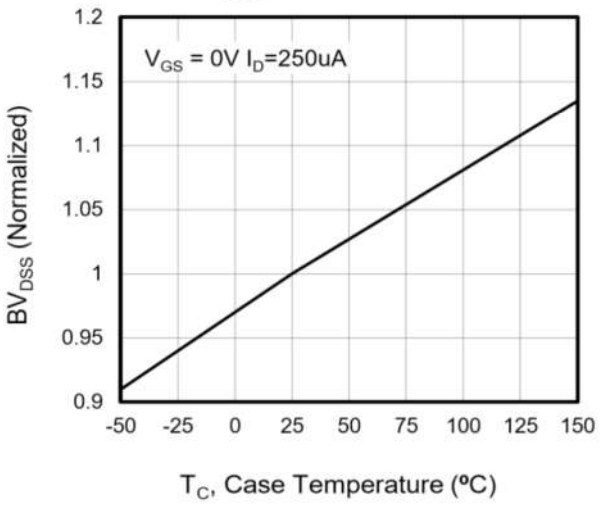


Figure 5. Transfer Characteristics

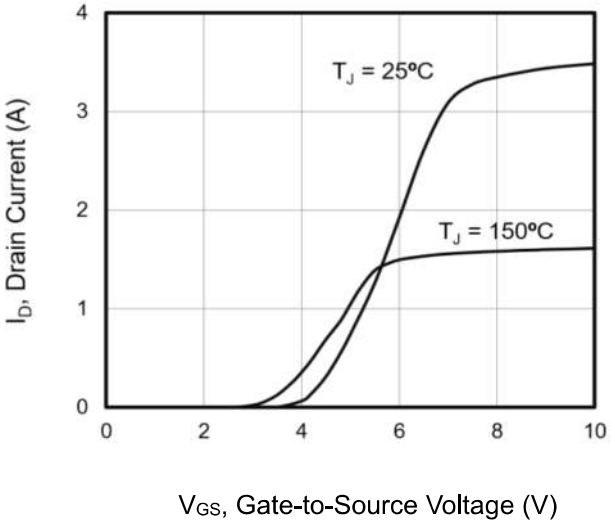
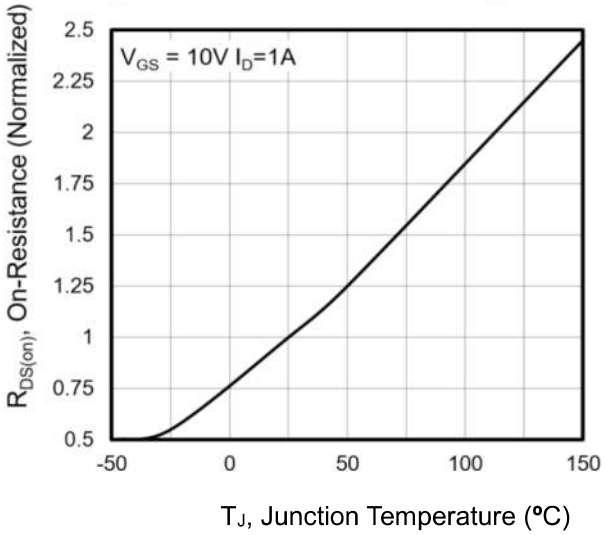


Figure 6. On-Resistance vs. Temperature



Ratings and Characteristic Curves

Figure 7. Capacitance

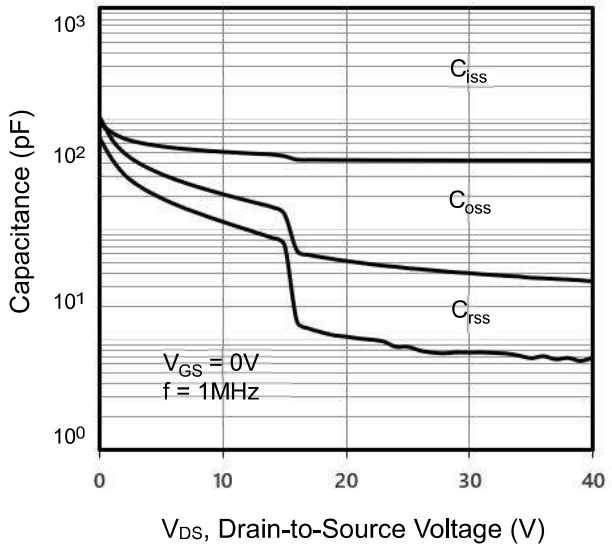


Figure 8. Gate Charge

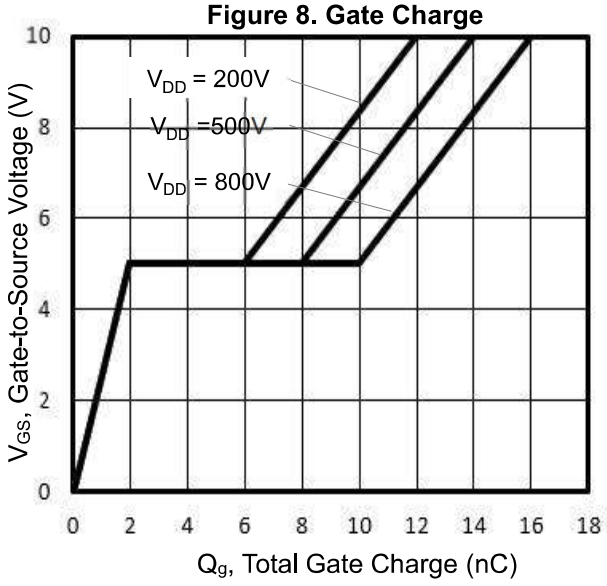


Figure 9. Transient Thermal Impedance

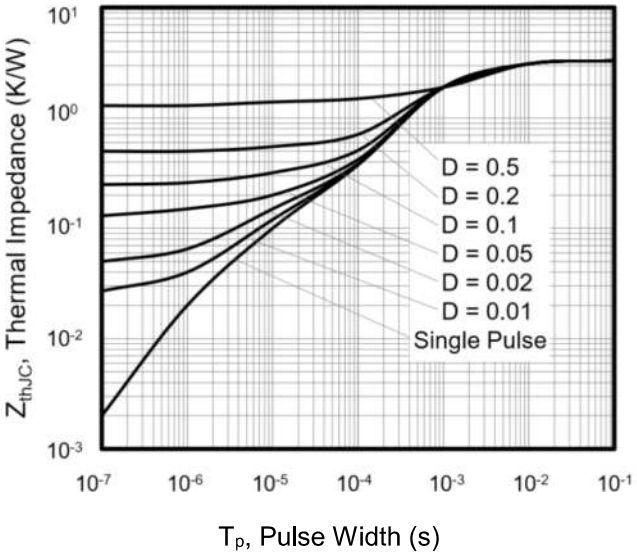
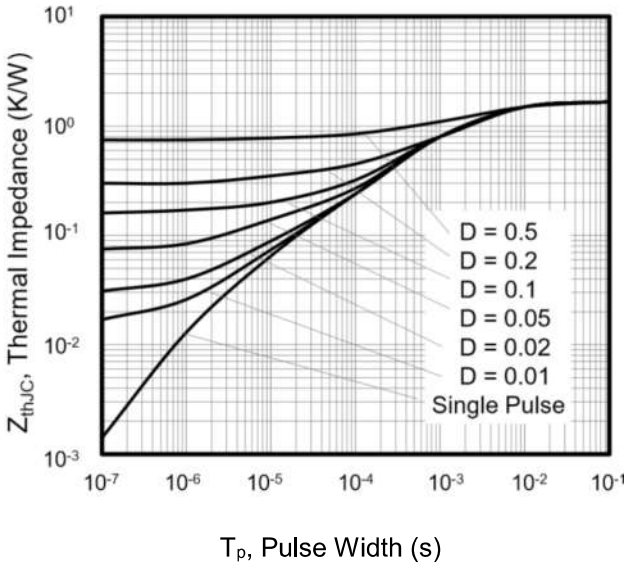
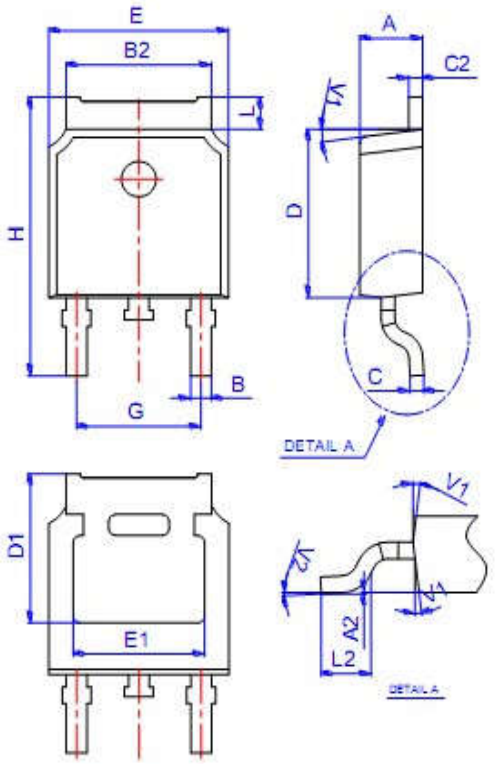


Figure 10. Transient Thermal Impedance



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