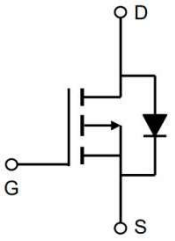
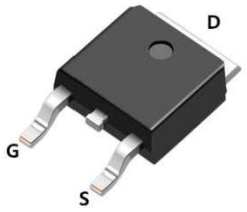
-100V P-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	-15A
V_{DSS}	-100V
R_{DSON}-typ(@V_{GS}=-10V)	< 185mΩ(Type:145 mΩ)





TO-252

Application

- Brushless motor
- Load switch
- Uninterruptible power supply

Product Specification Classification

Part Number	Package	Marking	Pack
YFW15P10AD	TO-252	YFW 15P10AD XXXXX	2500PCS/Tape

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	-100	V
Gate - Source Voltage	V_{GS}	±20	V
Continuous Drain Current, V_{GS} @ -10V[1] @T_C=25℃	I_D	-15	A
Continuous Drain Current, V_{GS} @ -10V[1] @T_C=100℃	I_D	-12	A
Pulsed Drain Current [2]	I_{DM}	-45	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	50	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]	$R_{\theta JA}$	62.5	°C/W
Thermal Resistance Junction to Case[1]	$R_{\theta JC}$	2.5	°C/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	BV_{DSS}	-100	-	-	V
Zero Gate Voltage Drain Current	V_{DS}=-80V , V_{GS}=0V	I_{DSS}	-	-	-1	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=-250μA	$V_{GS(th)}$	-1.0	-	-2.5	V
Static Drain-Source On-Resistance note1	V_{GS}=-10V, I_D=-2A	$R_{DS(ON)}$	-	145	185	mΩ
	V_{GS}=-4.5V, I_D=-1A		-	170	200	
Input Capacitance	V_{DS}=-50V V_{GS}=0V f=1MHz	C_{iss}	-	1545	-	pF
Output Capacitance		C_{oss}	-	37	-	
Reverse Transfer Capacitance		C_{rss}	-	25	-	
Total Gate Charge	V_{DS}=-50V I_D=-2A V_{GS}=-10V	Q_g	-	27	-	nC
Gate-Source Charge		Q_{gs}	-	5.3	-	
Gate-Drain("Miller") Charge		Q_{gd}	-	3.2	-	
Turn-on delay time	V_{DS}=-50V I_D=-2A R_L=25Ω V_{GEN}=-10V R_G=4.5Ω	$t_{d(on)}$	-	10	-	ns
Turn-on Rise Time		T_r	-	27	-	
Turn-Off Delay Time		$t_{d(OFF)}$	-	288	-	
Turn-Off Fall Time		t_f	-	88	-	
Maximum Continuous Drain to Source Diode Forward Current		I_S	-	-	-18	A
Drain to Source Diode Forward Voltage note1	V_{GS}=0V , I_S=-2A	V_{SD}	-	-	-1.3	V
Reverse Recovery Time	I_{SD}=-6A, V_{GS}=0V, dI/dt=100A/μs	t_{rr}	-	40	-	ns
Reverse Recovery Charge		Q_{rr}	-	28	-	nC

Note :
1、The data tested by surface mounted on a 1 inch 2 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 V DD =-72V,VGS =-10V,L=0.1mH,IAS =-15A
4、The power dissipation is limited by 150℃ 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.

Ratings and Characteristic Curves

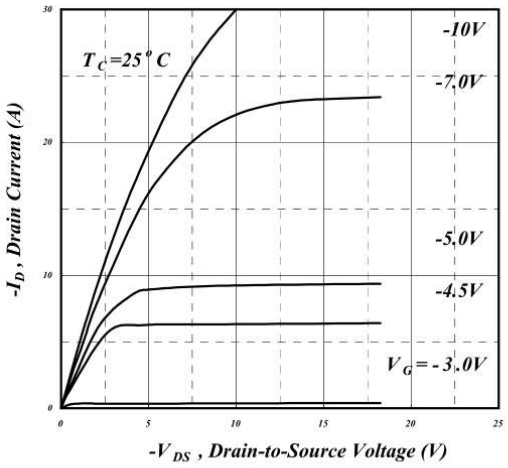


Fig 1. Typical Output Characteristics

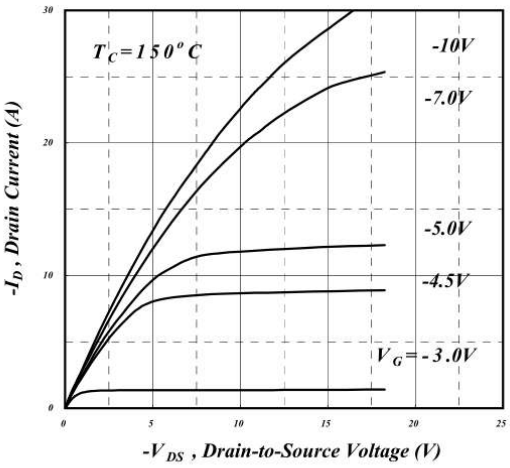


Fig 2. Typical Output Characteristics

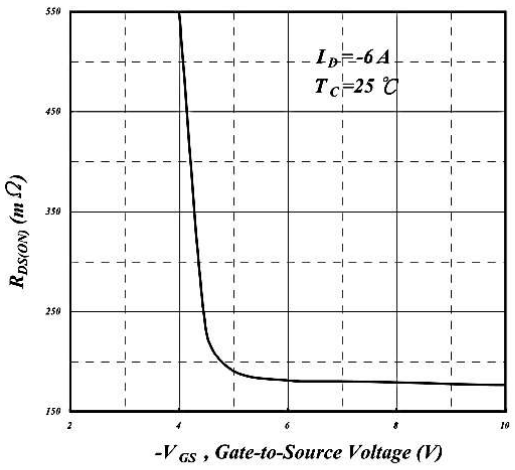


Fig 3. On-Resistance v.s. Gate Voltage

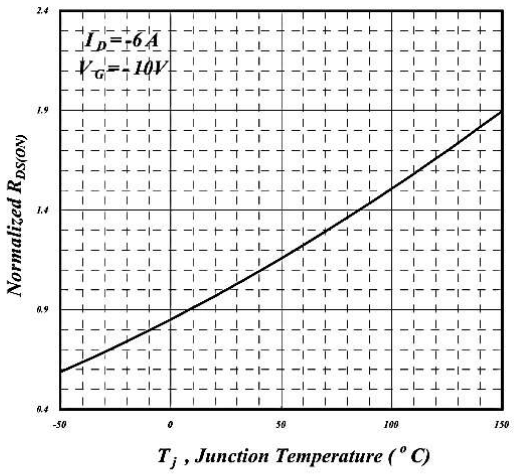


Fig 4. Normalized On-Resistance v.s. Junction Temperature

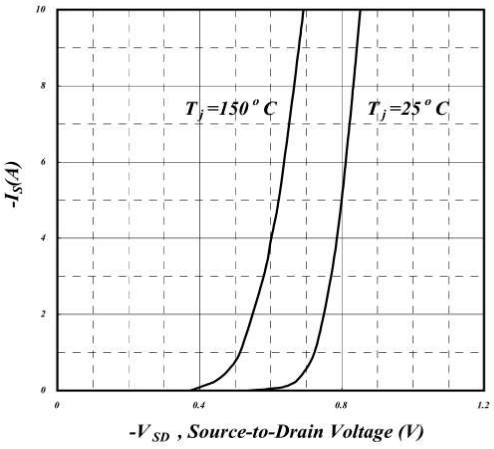


Fig 5. Forward Characteristic of Reverse Diode

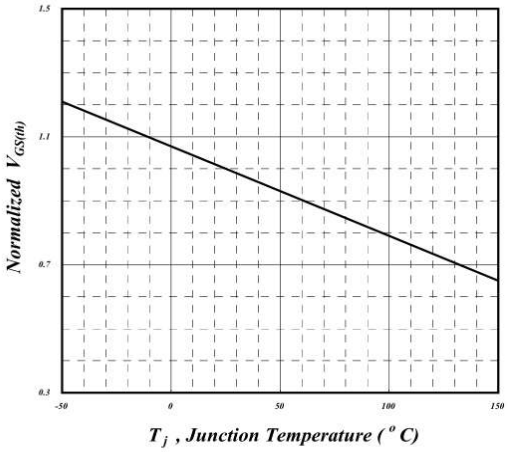


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

Ratings and Characteristic Curves

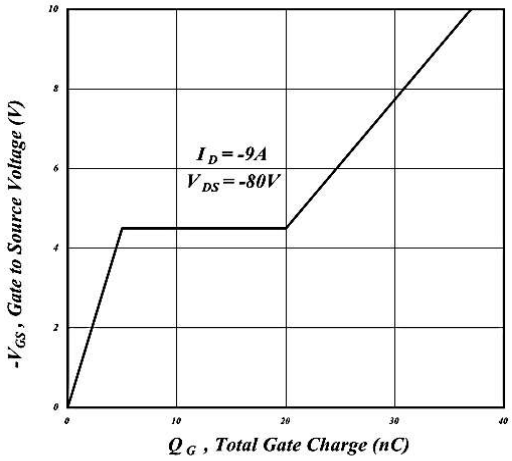


Fig 7. Gate Charge Characteristics

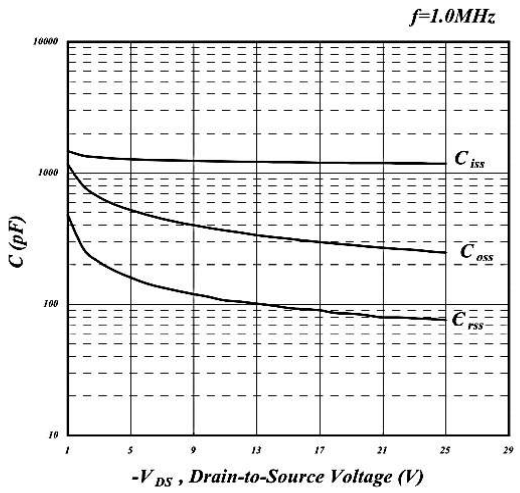


Fig 8. Typical Capacitance Characteristics

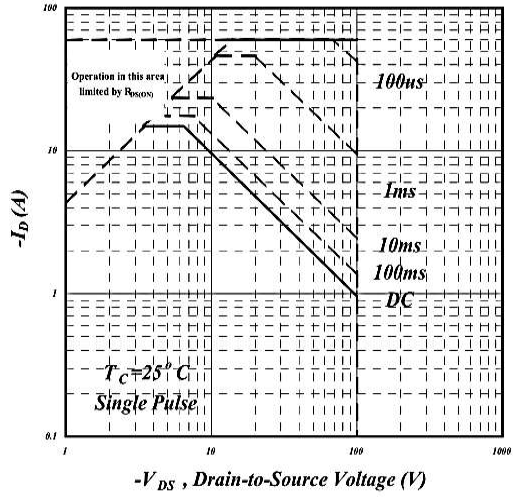


Fig 9. Maximum Safe Operating Area

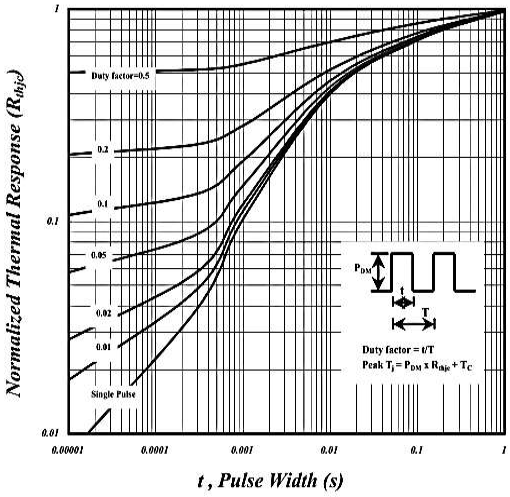


Fig 10. Effective Transient Thermal Impedance

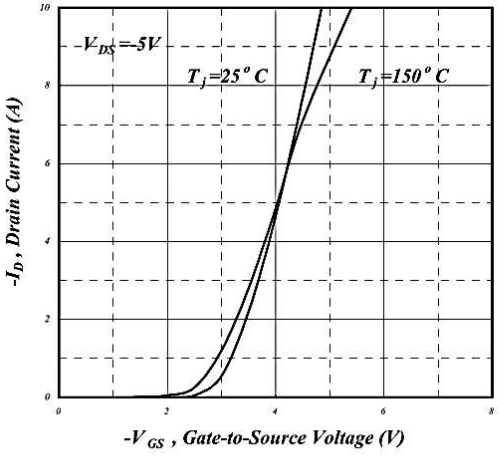


Fig 11. Transfer Characteristics

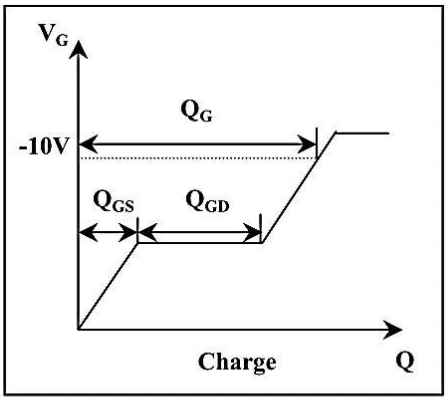
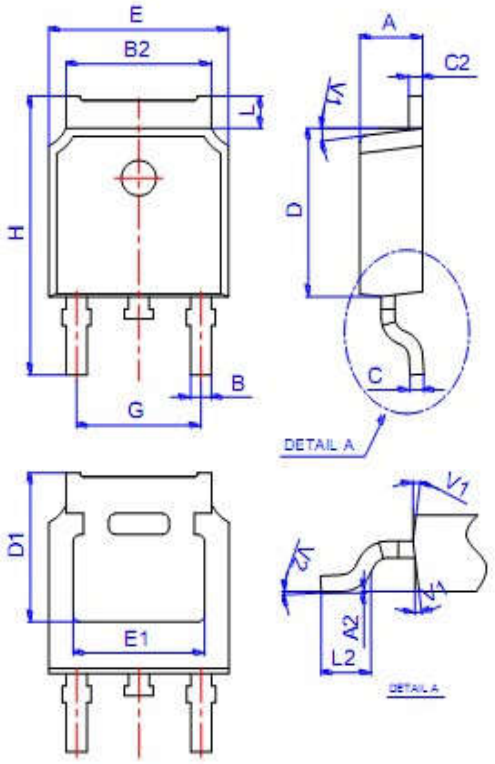


Fig 12. Gate Charge Waveform

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