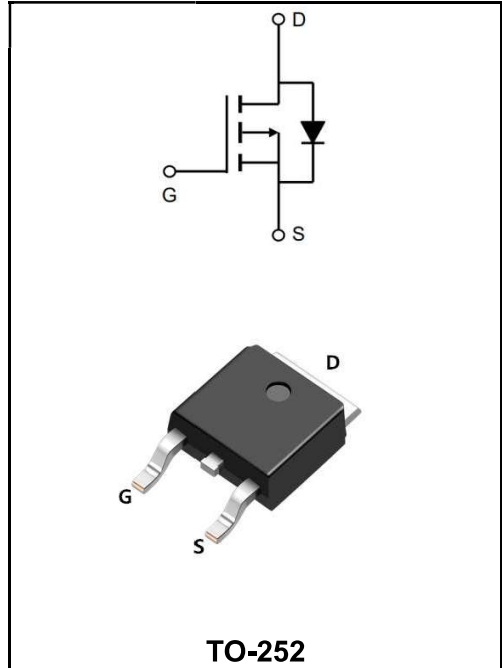


-30V P-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	-120A
V_{DSS}	-30V
R_{DS(on)-typ(@V_{GS}=-10V)}	< 5.5mΩ (Type:3.8 mΩ)



Application

- ◆Lithium battery protection
- ◆Wireless impact
- ◆Mobile phone fast charging

Product Specification Classification

Part Number	Package	Marking	Pack
YFW120P03AD	TO-252	YFW 120P03AD XXXXX	2500PCS/Tape

Maximum Ratings at T_c=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 T _C =25°C	I _D	-120	A
Continuous Drain Current T _C =100°C	I _D	-65	A
Pulsed Drain Current ^{note1}	I _{DM}	-400	A
Single Pulse Avalanche Energy ^{note2}	E _{AS}	225	mJ
Power Dissipation T _C =25°C	P _D	103	W
Thermal Resistance Junction-Case	R _{θJC}	1.48	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +175	°C

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	V(BR)DSS	-30	-33	-	V
Zero Gate Voltage Drain Current	$V_{DS}=-30V, V_{GS}=0V$	I_{DSS}	-	-	-1	μA
Gate to Body Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	I_{GSS}	-	-	±100	nA
Gate -Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	V_{GS(th)}	-1.0	-1.6	-2.5	V
Static Drain-Source on-Resistance	$V_{GS}=-10V, I_D=-30A$	R_{DS(ON)}	-	3.8	5.5	mΩ
	$V_{GS}=-4.5V, I_D=-20A$		-	5.8	8.2	
Input Capacitance	$V_{DS}=-15V$ $V_{GS}=0V$ $f=1MHz$	C_{iss}	-	9400	-	μF
Output Capacitance		C_{oss}	-	1000	-	
Reverse Transfer Capacitance		C_{rss}	-	767	-	
Total Gate Charge	$V_{DS}=-15V$ $V_{GS}=-10V$ $I_D=-30A$	Q_g	-	42	-	nC
Gate-Source Charge		Q_{gs}	-	8.4	-	
Gate-Drain("Miller") Charge		Q_{gd}	-	11.2	-	
Turn-on delay time	$V_{DD}=-15V$ $V_{GS}=-10V$ $I_D=-30A$ $R_{GEN}=2.5\Omega$	t_{d(on)}	-	15	-	ns
Turn-on Rise Time		T_r	-	16	-	
Turn-Off Delay Time		t_{d(OFF)}	-	69	-	
Turn-Off Fall Time		t_f	-	27	-	
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}	-	-0.8	-1.2	V

Notes:

- 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 $\cong 300\mu s$, duty cycle $\cong 2\%$
- 3、 The EAS data shows Max. rating . The test condition is T_J =25°C , V_{DD} = -15V, V_G = -10V, R_G =25Ω, L=0.5mH, I_{AS} = -30A
- 4、 The power dissipation is limited by 150°C 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.

Typical Characteristics

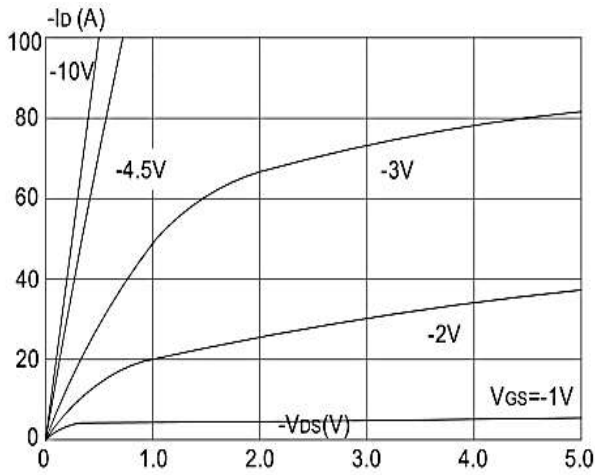


Figure 1: Output Characteristics

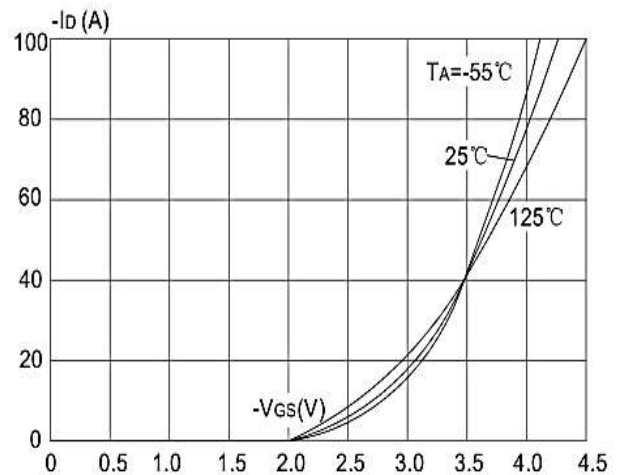


Figure 2: Typical Transfer Characteristics

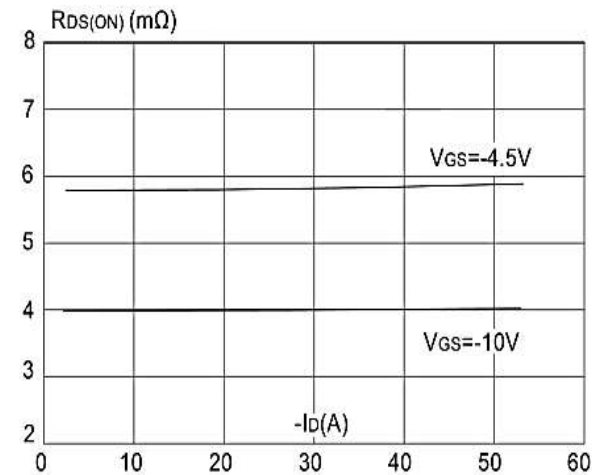


Figure 3: On-resistance vs. Drain Current

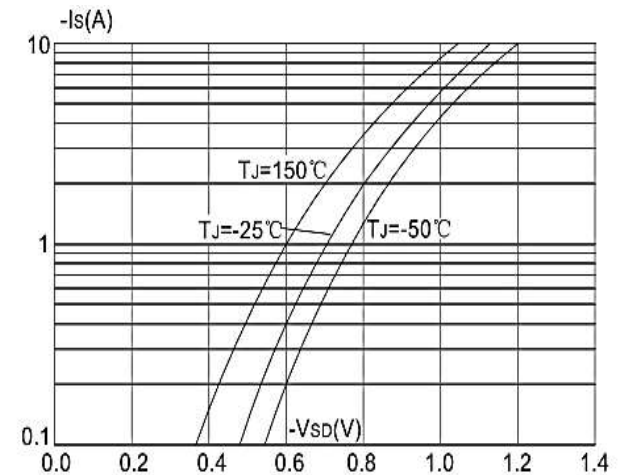


Figure 4: Body Diode Characteristics

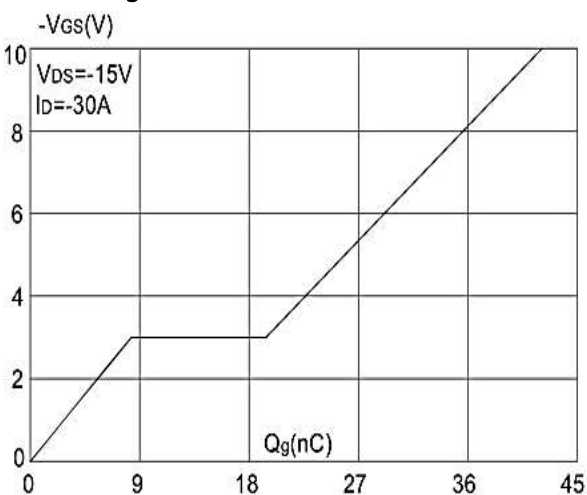


Figure 5: Gate Charge Characteristics

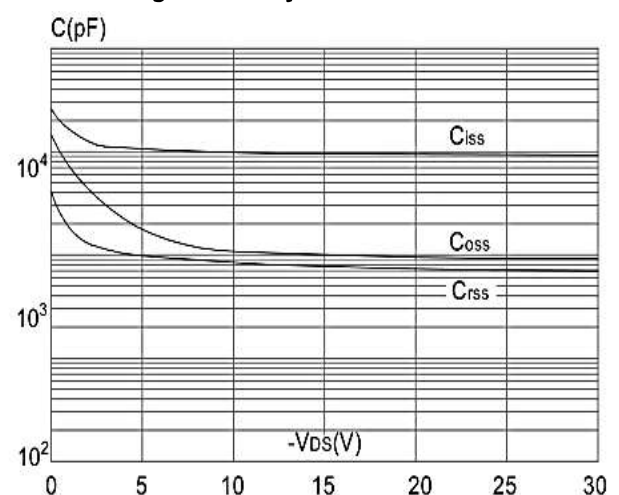


Figure 6: Capacitance Characteristics

Ratings and Characteristic Curves

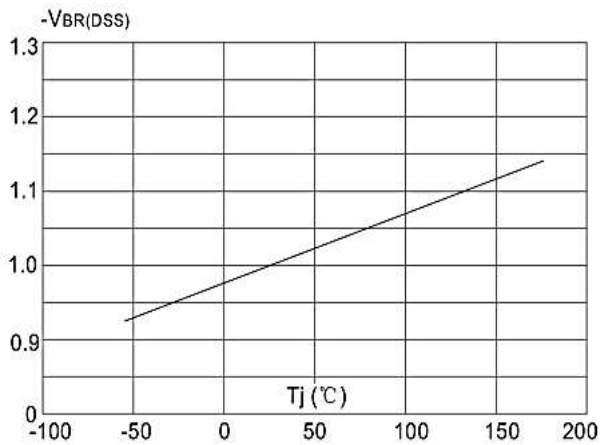


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

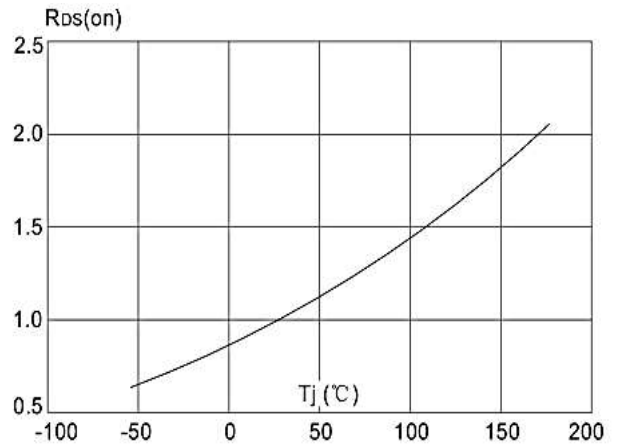


Figure 8: Normalized on Resistance vs. Junction Temperature

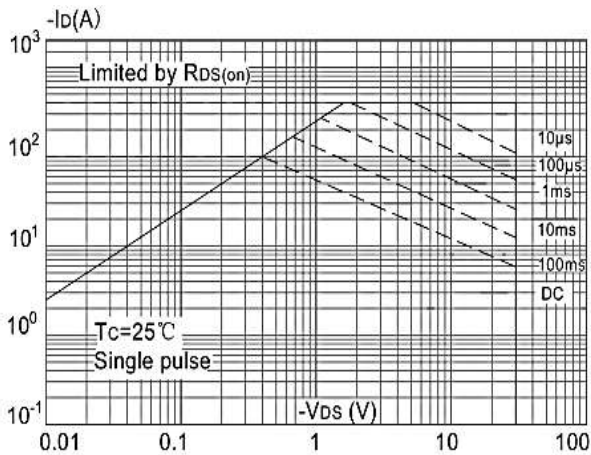


Figure 9: Maximum Safe Operating Area

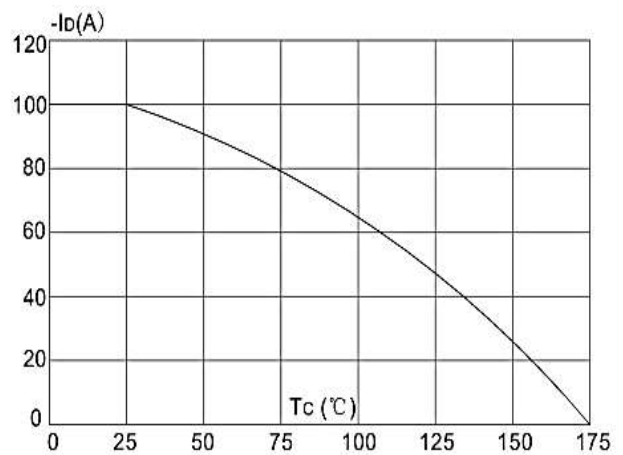


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

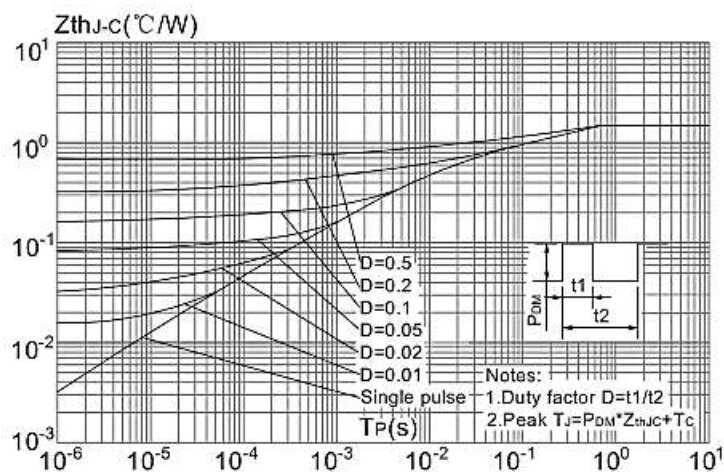


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Case

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				