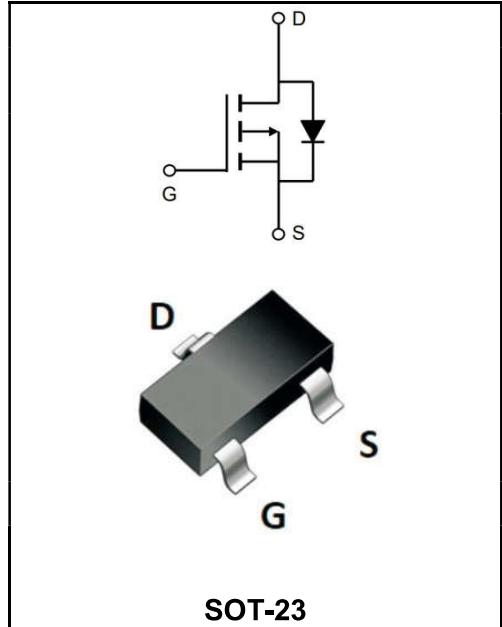


-30V P-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	-4.2A
V_{DSS}	-30V
R_{DS(on)-typ(@V_{GS}=10V)}	< 50mΩ(Type:45 mΩ)
R_{DS(on)-typ(@V_{GS}=4.5V)}	< 68mΩ(Type:53 mΩ)



Application

- ◆ Battery protection
- ◆ Load switch
- ◆ Uninterruptible power supply

Product Specification Classification

Part Number	Package	Marking	Pack
YFW3401B	SOT-23	A19T.	3000PCS/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}	±12	V
Continuous Drain Current, V _{GS} @ -10V ¹ @T _c =25°C	I_D	-4.2	A
Continuous Drain Current, V _{GS} @ -10V ¹ @T _c =100°C	I_D	-2.7	A
Pulsed Drain Current ^{note1}	I_{DM}	-16.8	A
Power Dissipation T _A =25°C	P_D	1.5	W
Thermal Resistance Junction-Ambient ¹	R_{θJA}	125	°C/W
Thermal Resistance Junction-Case ¹	R_{θJC}	124	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°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	-	-	V
Zero Gate Voltage Drain Current	$V_{DS}=-30V, V_{GS}=0V$	I_{DSS}	-	-	1	μA
Gate to Body Leakage Current	$V_{GS}=\pm 12V, V_{DS}=0V$	I_{GSS}	-	-	±100	nA
Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	V_{GS(th)}	-0.5	-0.9	-1.5	V
Static Drain-Source on-Resistance note2	$V_{GS}=-10V, I_D=-4A$	R_{DS(on)}	-	45	55	mΩ
	$V_{GS}=-4.5V, I_D=-3A$		-	53	68	
	$V_{GS}=-2.5V, I_D=-1A$		-	72	96	
Input Capacitance	$V_{DS}=-15V$ $V_{GS}=0V$ $f=1MHz$	C_{iss}	-	1500	-	pF
Output Capacitance		C_{oss}	-	80	-	
Reverse Transfer Capacitance		C_{rss}	-	2	-	
Total Gate Charge	$V_{DS}=-15V$ $V_{GS}=-10V$ $I_D=-4.2A$	Q_g	-	8.5	-	nC
Gate-Source Charge		Q_{gs}	-	1.8	-	
Gate-Drain("Miller") Charge		Q_{gd}	-	2.7	-	
Turn-on delay time	$V_{DD}=-15V$ $V_{GS}=-10V$ $I_D=-1A$ $R_{GEN}=2.5\Omega$	t_{d(on)}	-	7	-	ns
Turn-on Rise Time		T_r	-	3	-	
Turn-Off Delay Time		t_{d(OFF)}	-	20	-	
Turn-Off Fall Time		t_f	-	12	-	
Maximum Continuous Drain to Source Diode Forward Current		I_S	-	-	-4.2	A
Maximum Pulsed Drain to Source Diode Forward Current		I_{SM}	-	-	-16.8	A
Drain to Source Diode Forward Voltage	$V_{GS}=0V, I_S=-4.2A$	V_{SD}	-	-0.8	-1.2	V

Note :

- 1、 The data tested by surface mounted on a 1 inch 2 FR-4 board with 20Z copper.
- 2、 The data tested by pulsed , pulse width $\cong 300\mu s$, duty cycle $\cong 2\%$
- 3、 The power dissipation is limited by 150°C junction temperature
- 4、 The data is theoretically the same as ID and IDM , in real applications , should be limited by total power dissipation

Ratings and Characteristic Curves

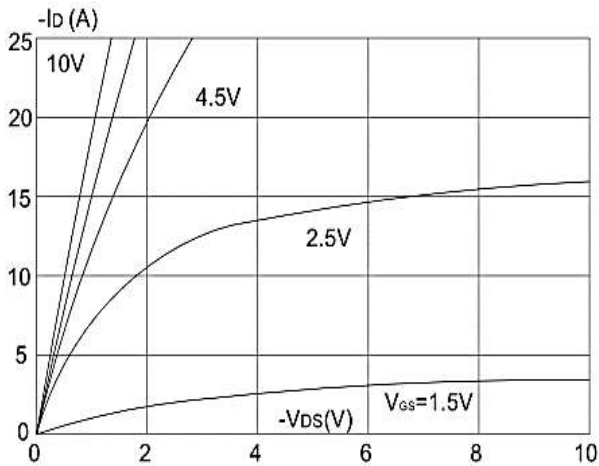


Figure1: Output Characteristics

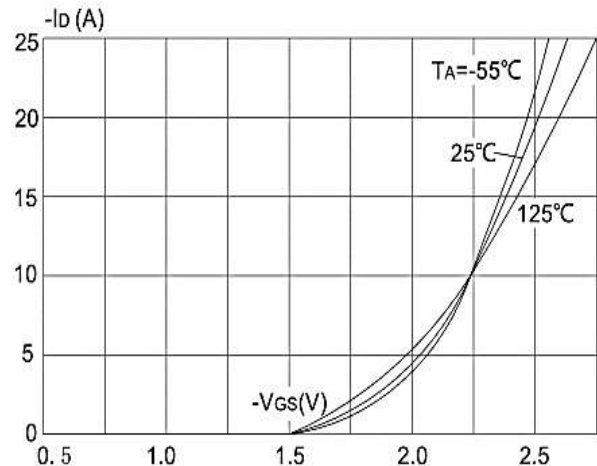


Figure 2: Typical Transfer Characteristics

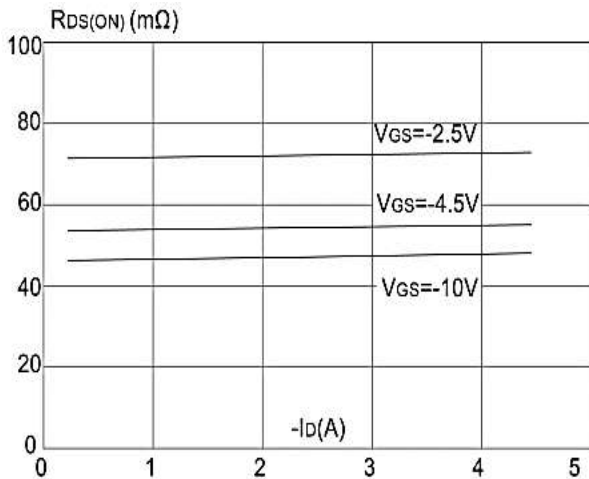


Figure 3: On-resistance vs. Drain Current

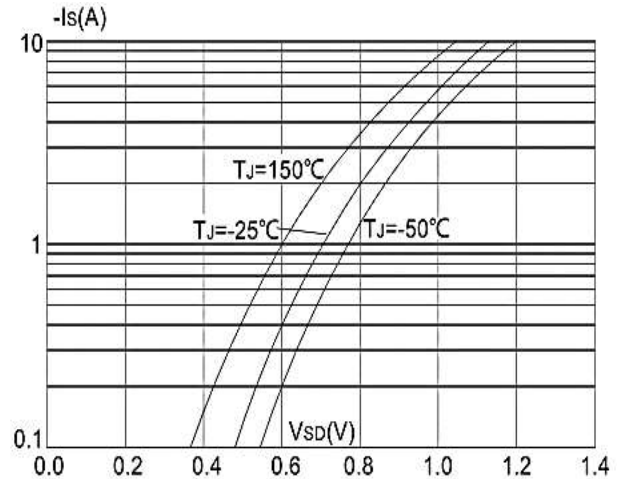


Figure 4: Body Diode Characteristics

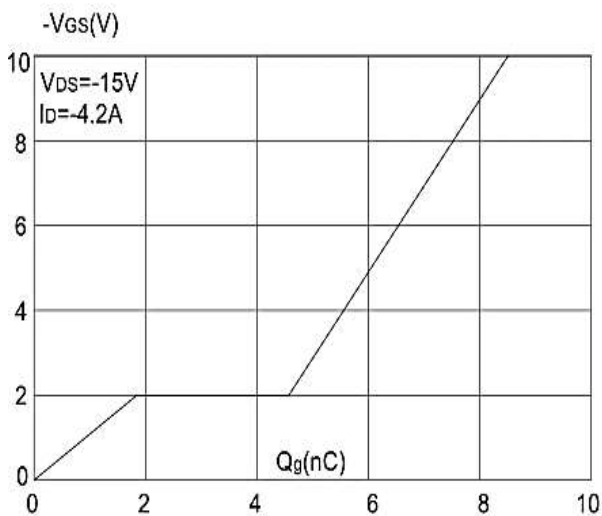


Figure 5: Gate Charge Characteristics

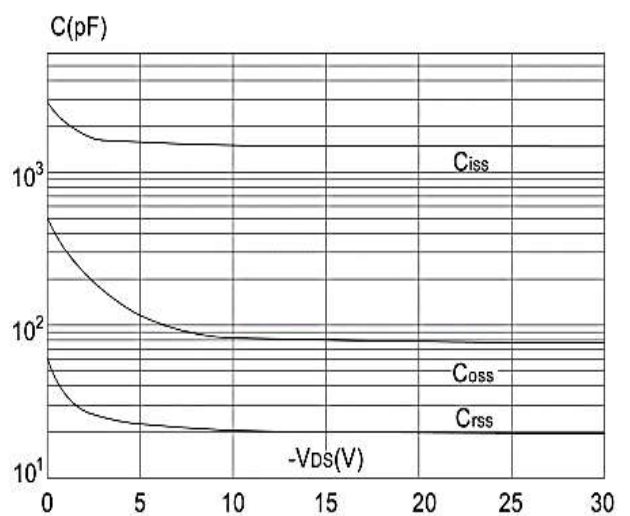


Figure 6: Capacitance Characteristics

Ratings and Characteristic Curves

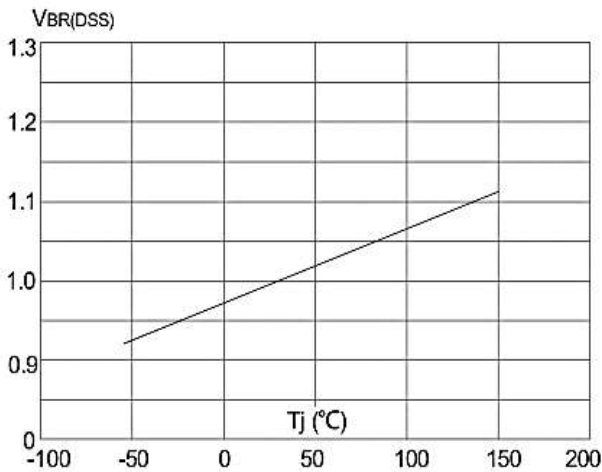


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

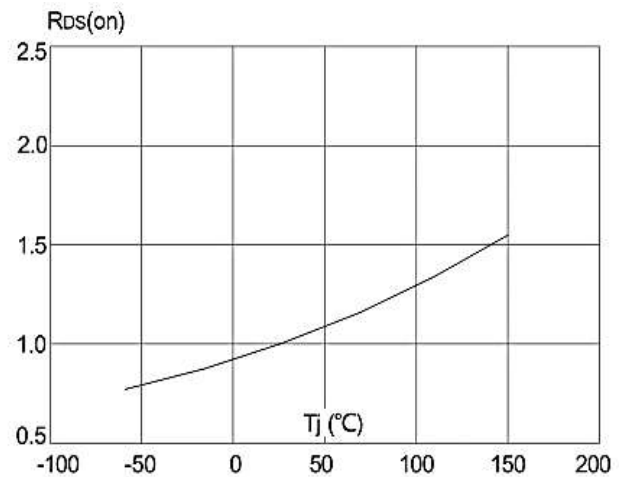


Figure 8: Normalized on Resistance vs. Junction Temperature

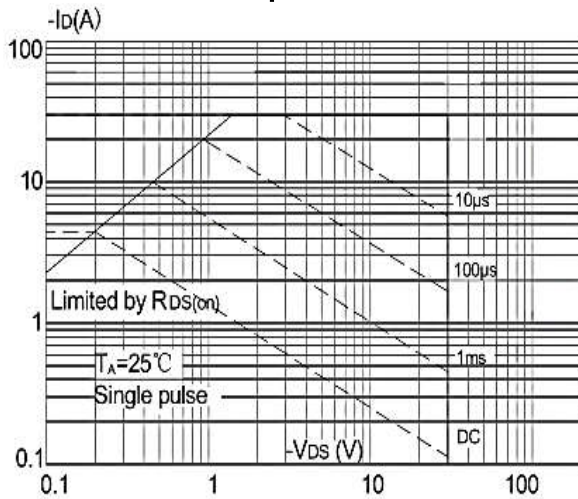


Figure 9: Maximum Safe Operating Area

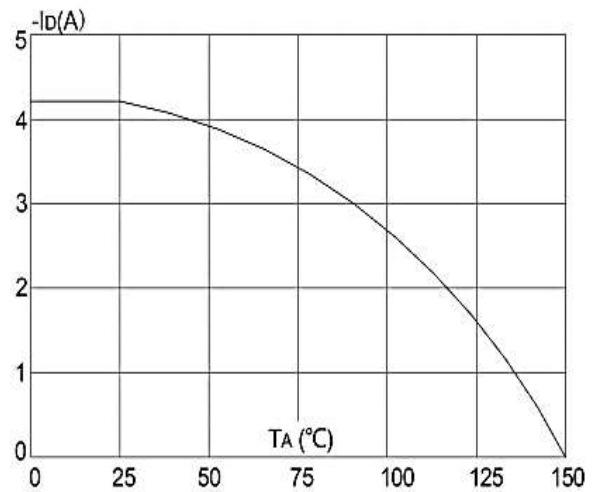


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

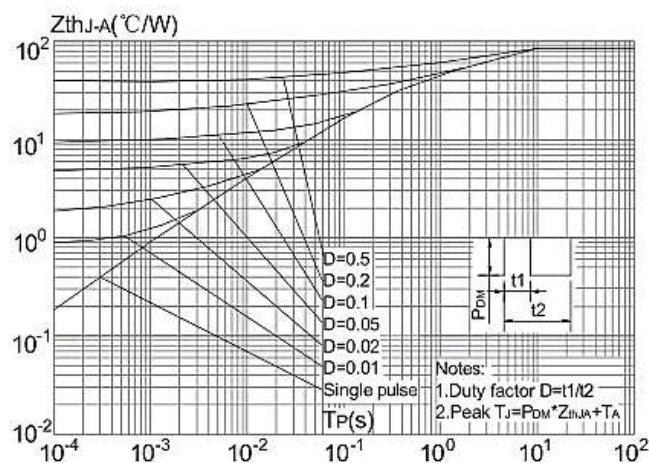
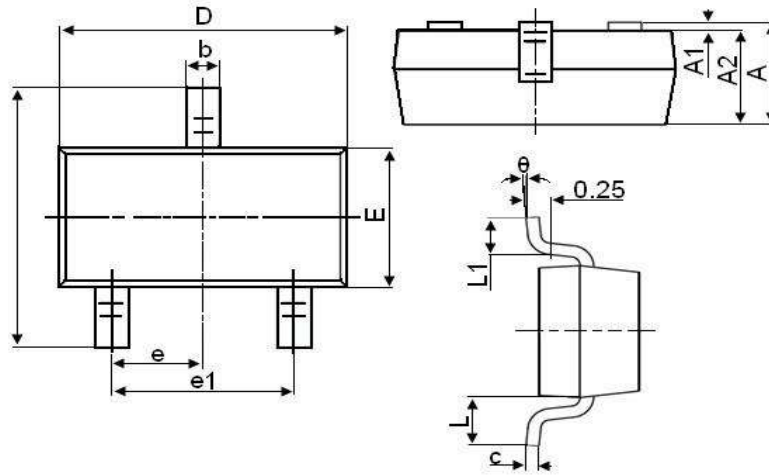


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

SOT-23



Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°

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