

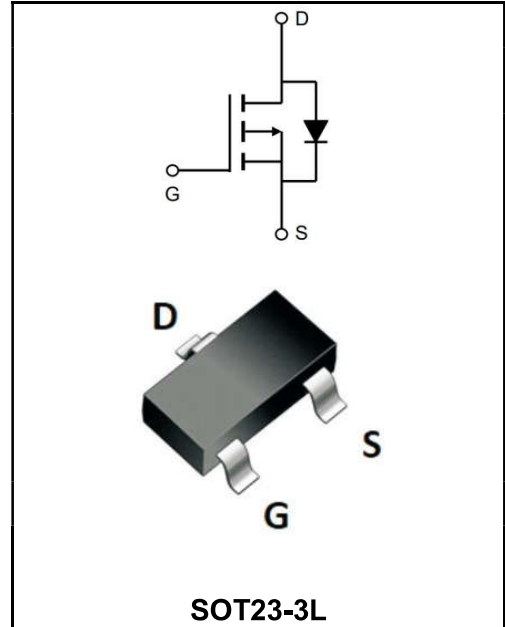
-12V P-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	-8A
V_{DSS}	-12V
R_{DS(on)-typ}(@V_{GS}=-4.5V)	< 20mΩ (Type:16 mΩ)

Application

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



Product Specification Classification

Part Number	Package	Marking	Pack
YFW2313MI	SOT23-3L	2313	3000PCS/Tape

Maximum Ratings at T_c=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	-12	V
Gate - Source Voltage	V_{GS}	± 12	V
Continuous Drain Current @T _A =25°C	I_D	8.0	A
Continuous Drain Current @T _A =70°C	I_D	5.3	A
Pulsed Drain Current ²	I_{DM}	40	A
Total Power Dissipation ³ @T _A =25°C	P_D	1	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_{θJA}	125	°C/W
Thermal Resistance Junction-Ambient ¹ (t ≤ 10s)	R_{θJA}	85	°C/W

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	V(BR)DSS	-12	-16	-	V
BVDSS Temperature Coefficient	Reference to 25°C, $I_D=1mA$	$\Delta BV_{DSS}/\Delta T_J$	-	0.029	-	V/°C
Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	V_{GS(th)}	-0.4	-0.7	-1.0	V
Static Drain-Source on-Resistance note2	$V_{GS}=-4.5V, I_D=-8A$	R_{DS(ON)}	-	16	20	mΩ
	$V_{GS}=-2.5V, I_D=-5A$		-	20	25	
Zero Gate Voltage Drain Current	$V_{DS}=-12V, V_{GS}=0V$	I_{DSS}	-	-	-1	μA
Gate to Body Leakage Current	$V_{GS}=\pm 12V, V_{DS}=0V$	I_{GSS}	-	-	±100	nA
Input Capacitance	$V_{DS}=-6V$ $V_{GS}=0V$ $f=1MHz$	C_{iss}	-	2700	-	pF
Output Capacitance		C_{oss}	-	680	-	
Reverse Transfer Capacitance		C_{rss}	-	590	-	
Total Gate Charge	$V_{DS}=-6V$ $I_D=-8A$ $V_{GS}=-4.5V$	Q_g	-	35	-	nC
Gate-Source Charge		Q_{gs}	-	5	-	
Gate-Drain("Miller") Charge		Q_{gd}	-	10	-	
Turn-on delay time	$V_{DD}=-6V$ $I_D=-8A$ $V_{GS}=-4.5V$ $R_{GEN}=2.5\Omega$	t_{d(on)}	-	11	-	ns
Turn-on Rise Time		T_r	-	35	-	
Turn-Off Delay Time		t_{d(OFF)}	-	30	-	
Turn-Off Fall Time		t_f	-	10	-	
Maximum Continuous Drain to Source Diode Forward Current		I_S	-	-	-16	A
Maximum Pulsed Drain to Source Diode Forward Current		I_{SM}	-	-	-64	A
Drain to Source Diode Forward Voltage	$V_{GS}=0V, I_S=-16A$	V_{SD}	-	-0.8	-1.2	V

Notes:

- 1、Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
- 2、Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%

Ratings and Characteristic Curves

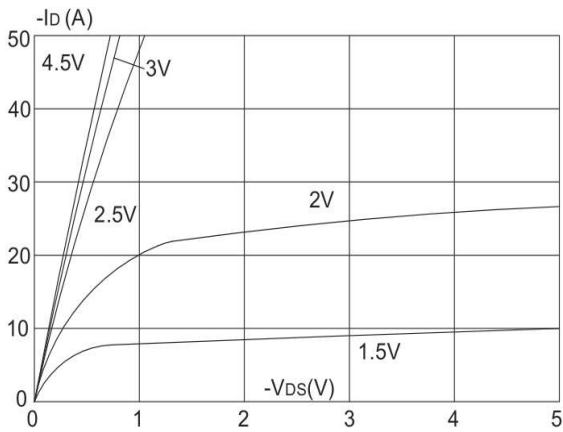


Figure 1: Output Characteristics

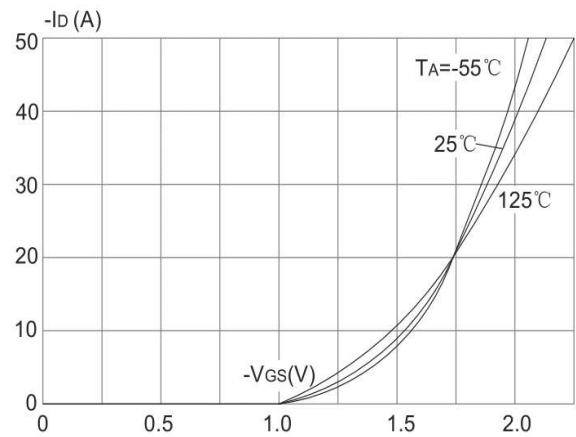


Figure 2: Typical Transfer Characteristics

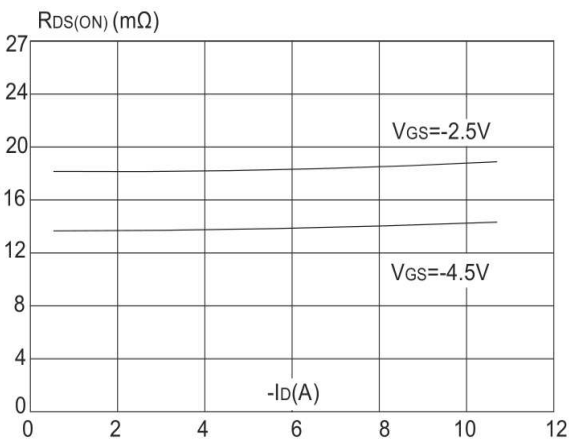


Figure 3: On-resistance vs. Drain Current

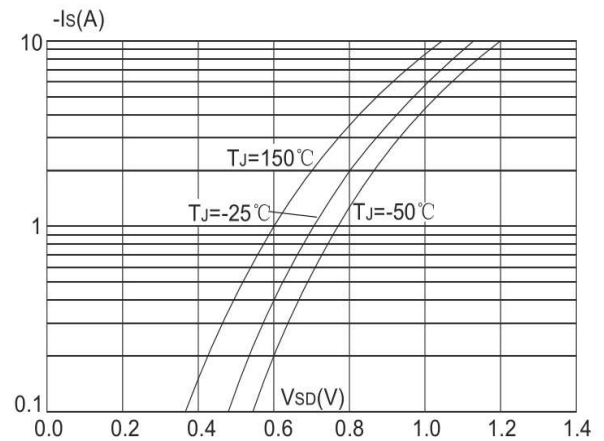


Figure 4: Body Diode Characteristics

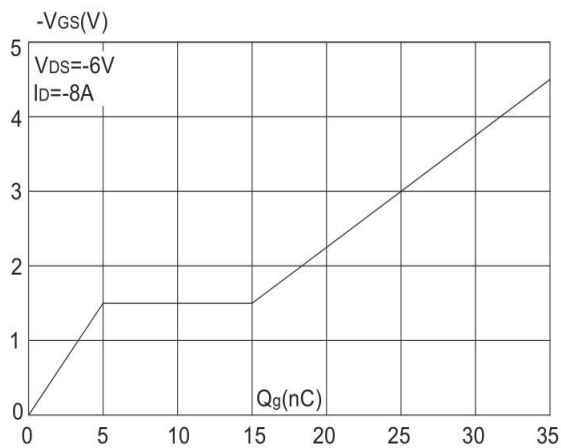


Figure 5: Gate Charge Characteristics

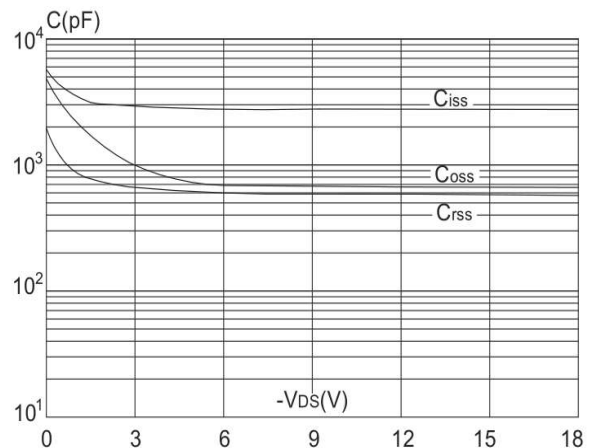


Figure 6: Capacitance Characteristics

Ratings and Characteristic Curves

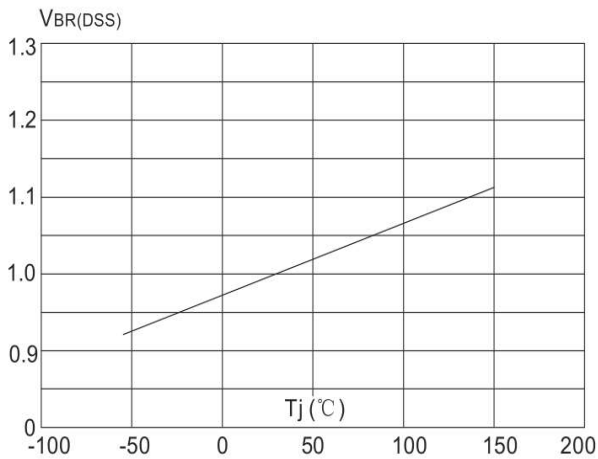


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

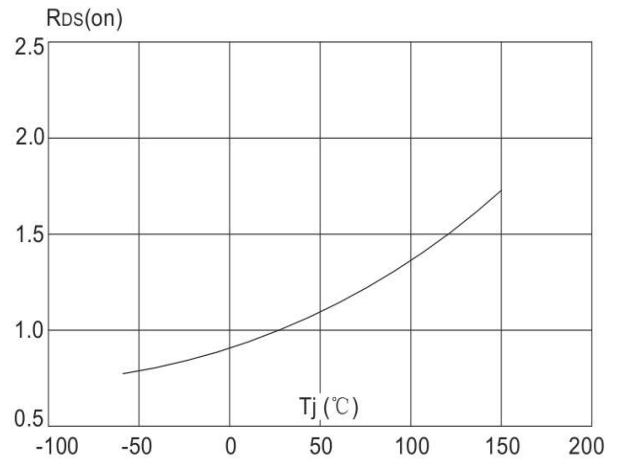


Figure 8: Normalized on Resistance vs. Junction Temperature

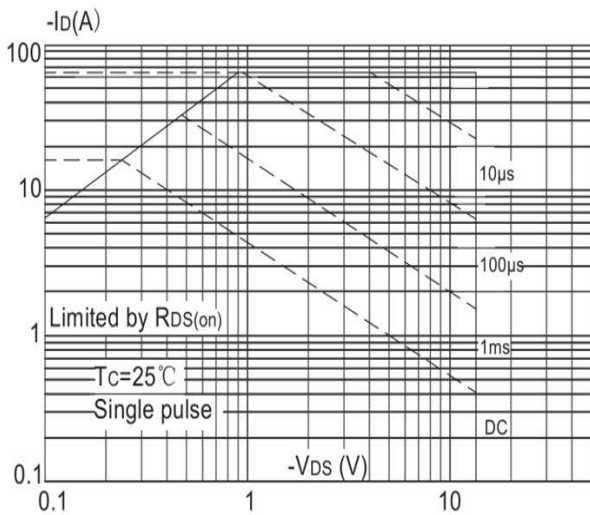


Figure 9: Maximum Safe Operating Area Case Temperature

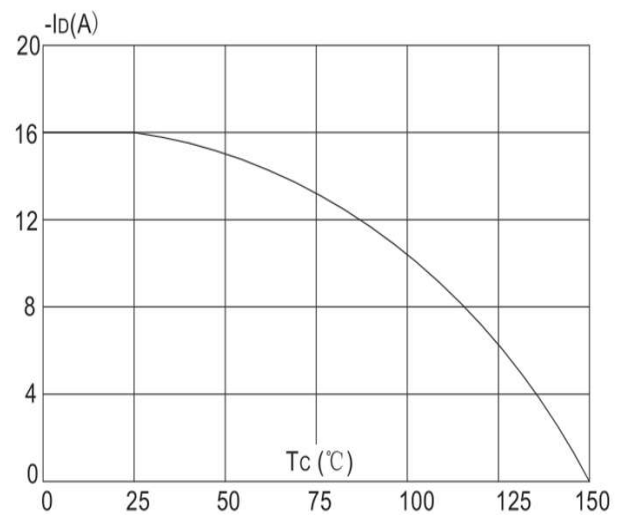


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

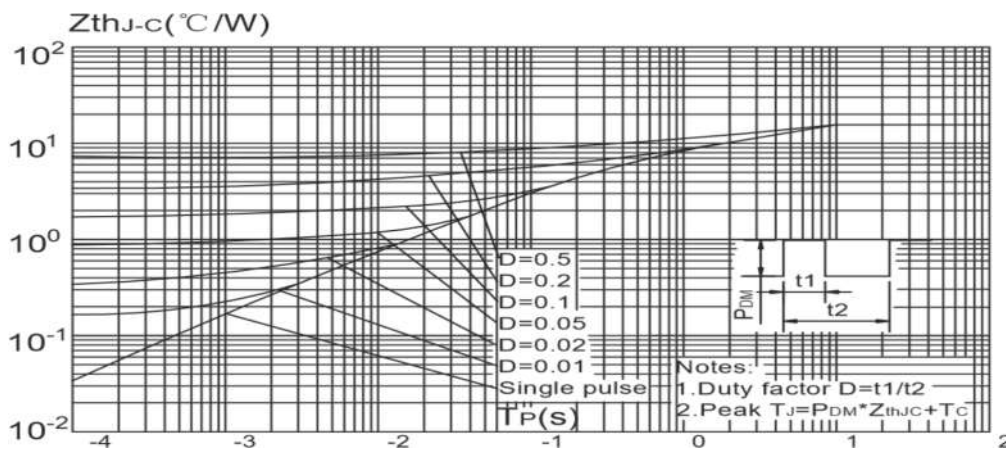
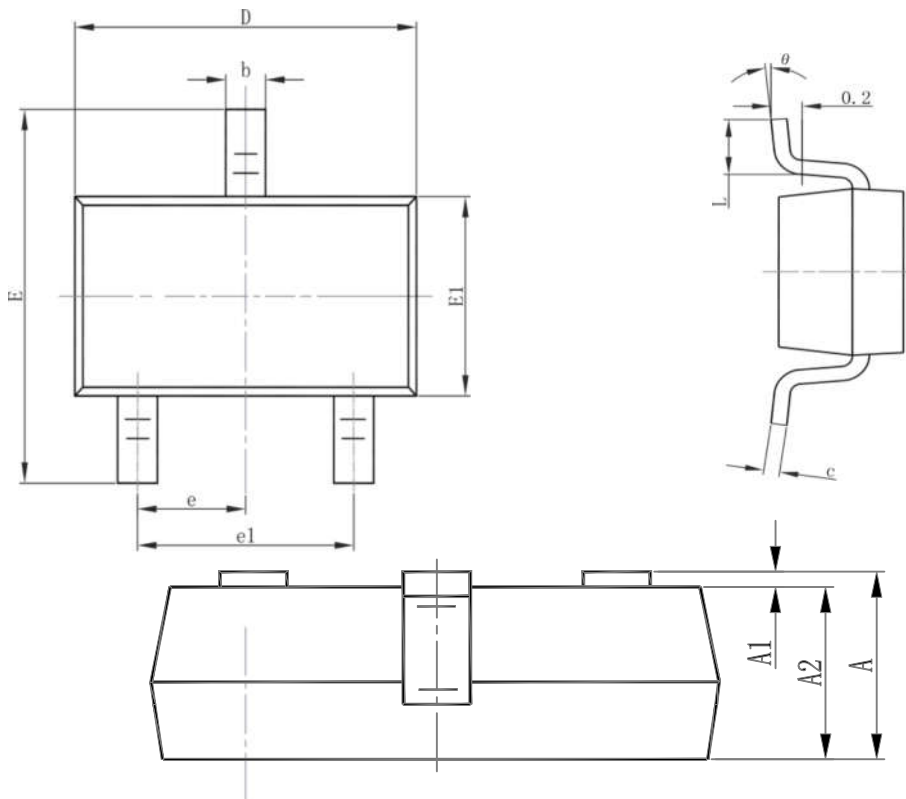


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Case

SOT23-3L



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°