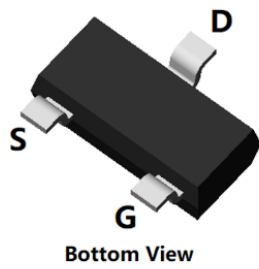
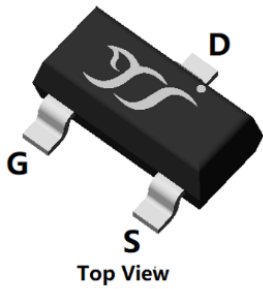
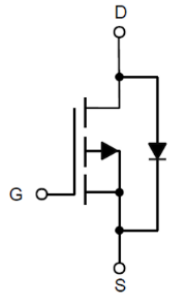


P-Channel Enhancement Mode Field Effect Transistor



SOT-23



Product Summary

V_{DS}	-30 V
I_D	-3 A
$R_{DS(ON)}$ (at $V_{GS}=-10V$)	<70 m
$R_{DS(ON)}$ (at $V_{GS}=-4.5V$)	<105 m

General Description

Trench Power LV MOSFET technology
High density cell design for Low $R_{DS(ON)}$
High Speed switching

Epoxy Meets UL 94 V-0 Flammability Rating
Halogen Free

Applications

PWM applications
Power management
Load switch

Absolute Maximum Ratings ($T_A=25^\circ C$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-source Voltage	V_{DS}	-30	V
Gate-source Voltage	V_{GS}	± 20	V
Drain Current	I_D	$T_A=25$	-3
		$T_A=100$	-1.9
Pulsed Drain Current ^A	I_{DM}	-20	A
Total Power Dissipation ^B	P_D	$T_A=25$	0.8
		$T_A=100$	0.3
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	

Thermal resistance

Parameter	Symbol	Typ	Max	Units
Thermal Resistance Junction-to-Ambient ^C	R	120	150	mW

Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJL2303B	F2	S3B [*]	3000	30000	120000	7 reel



YJL2303B

Electrical Characteristics (T_J=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =-	-30	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V, V _{GS} =0V	-	-	-1	
		V _{DS} =-30V, V _{GS} =0V, T _J =150	-	-	-100	
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V	-	-	±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =-	-1	-1.5	-2.4	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-3A	-	54	70	
		V _{GS} =-4.5V, I _D =-2A	-	80	105	
Diode Forward Voltage	V _{SD}	I _S =-3A, V _{GS} =0V	-	-0.9	-1.2	V
Gate resistance	R _G	f=1MHz, Open drain	-	18	-	
Maximum Body-Diode Continuous Current	I _S		-	-	-3	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V, f=1MHz	-	260	-	pF
Output Capacitance	C _{oss}		-	50	-	
Reverse Transfer Capacitance	C _{rss}		-	40	-	
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =-10V, V _{DS} =-15V, I _D =-3A	-	7	-	nC
Gate-Source Charge	Q _{gs}		-	2	-	
Gate-Drain Charge	Q _{gd}		-	1	-	
Reverse Recovery Charge	Q _{rr}	I _F =-3A, di/dt=100A/us	-	4	-	nC
Reverse Recovery Time	t _{rr}		-	12	-	ns
Turn-on Delay Time	t _{D(on)}	V _{GS} =-10V, V _{DD} =-15V, I _D =-3A R _{GEN} =3	-	5	-	ns
Turn-on Rise Time	t _r		-	23	-	
Turn-off Delay Time	t _{D(off)}		-	21	-	
Turn-off fall Time	t _f		-	30	-	

A. Repetitive rating; pulse width limited by max. junction temperature.

B. P_d is based on max. junction temperature, using junction-case and junction-ambient thermal resistance.

C. The value of R_θ is measured with the device mounted on 1 in² FR-4 board with 2oz. Copper, in the still air environment with T_A =25 . The maximum allowed junction temperature of 150°C. The value in any given application depends on the user's specific board design.



■ Typical Electrical and Thermal Characteristics Diagrams

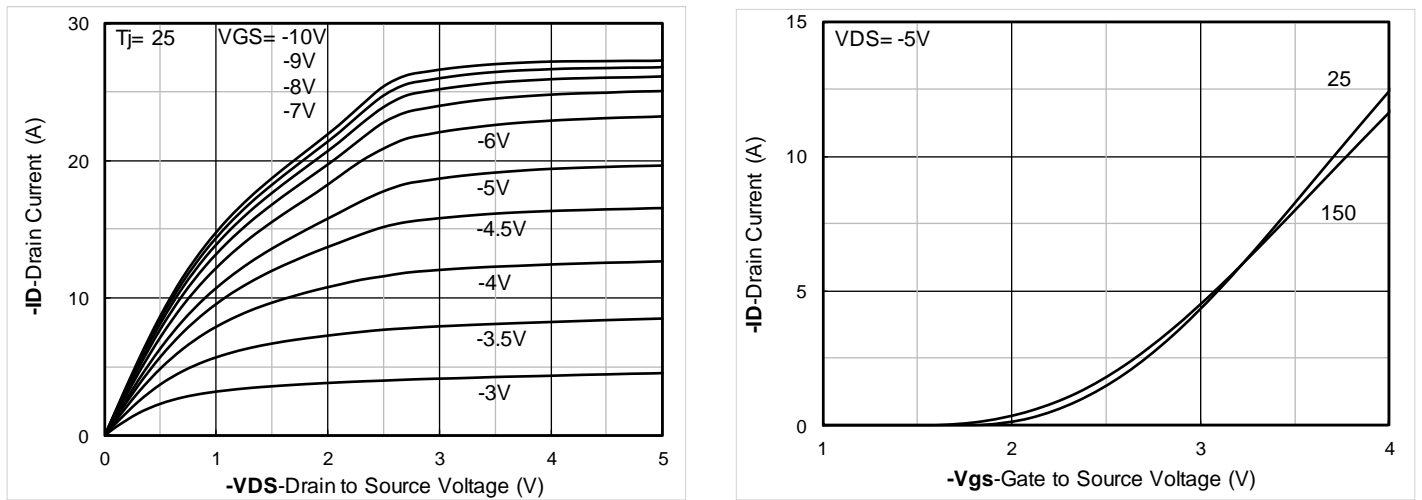


Figure 1. Output Characteristics

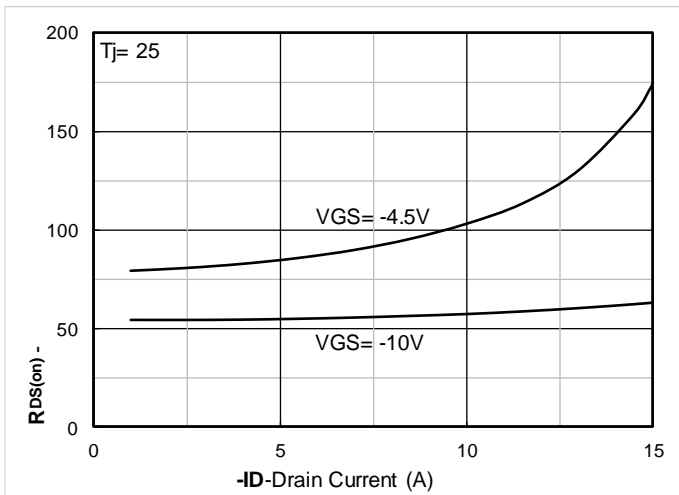


Figure 7. RDS(on) VS Drain Current

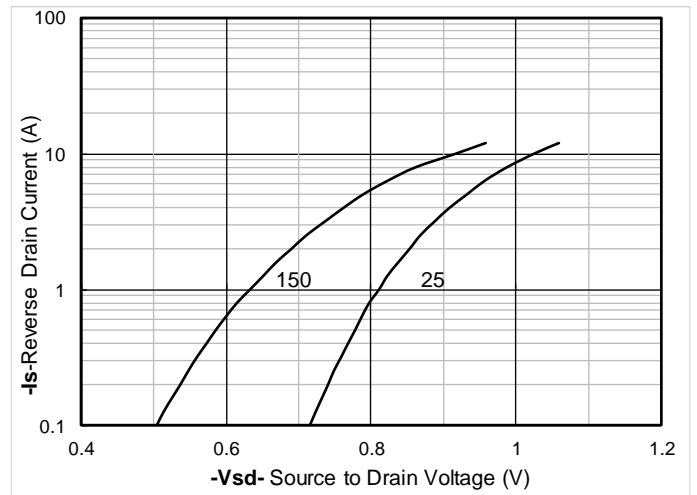


Figure 8. Forward characteristics of reverse diode

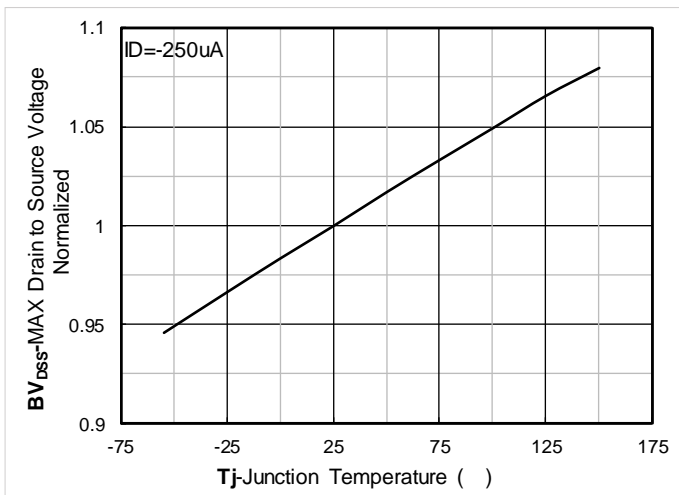


Figure 9. Normalized breakdown voltage

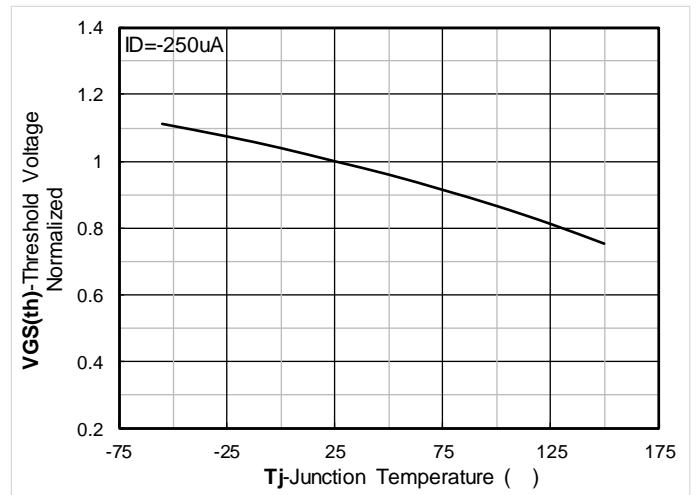


Figure 10. Normalized Threshold voltage

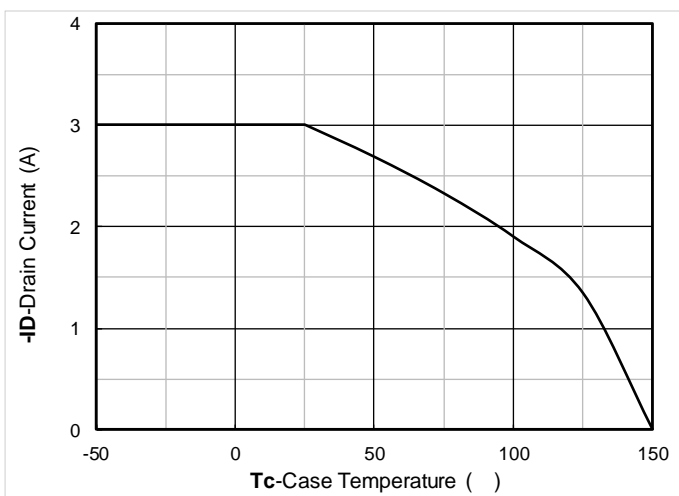


Figure 11. Current dissipation

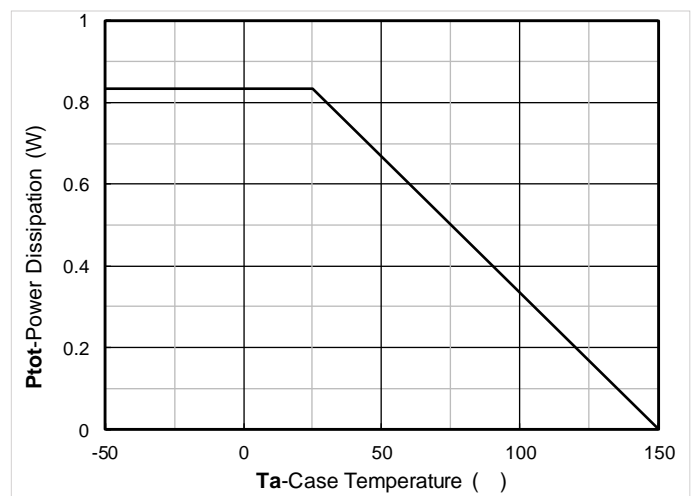


Figure 12. Power dissipation



YJL2303B

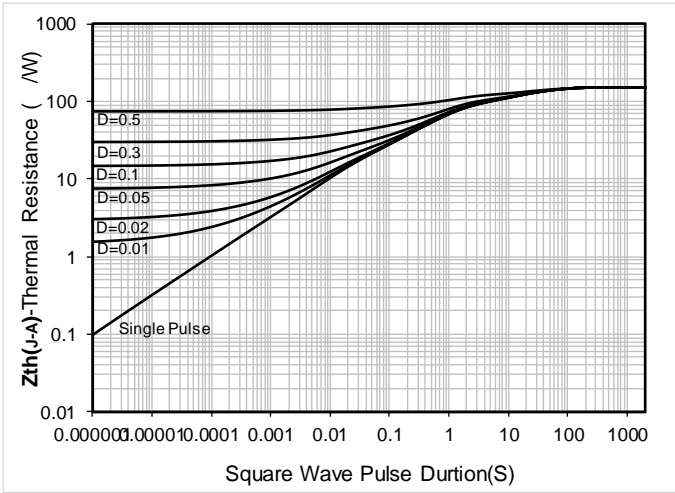


Figure 13. Maximum Transient Thermal Impedance

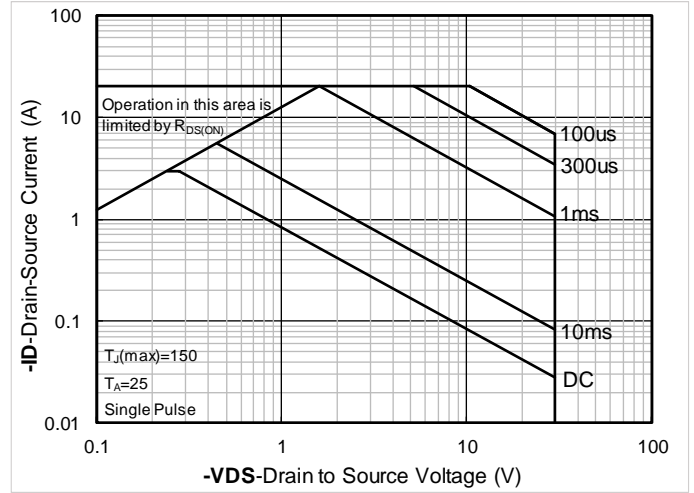
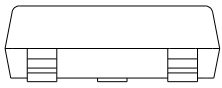
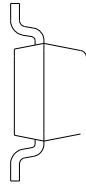
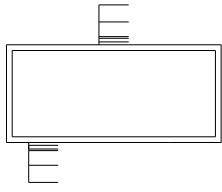


Figure 14. Safe Operation Area



SOT-23 Package information



UNIT: mm



YJL2303B

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