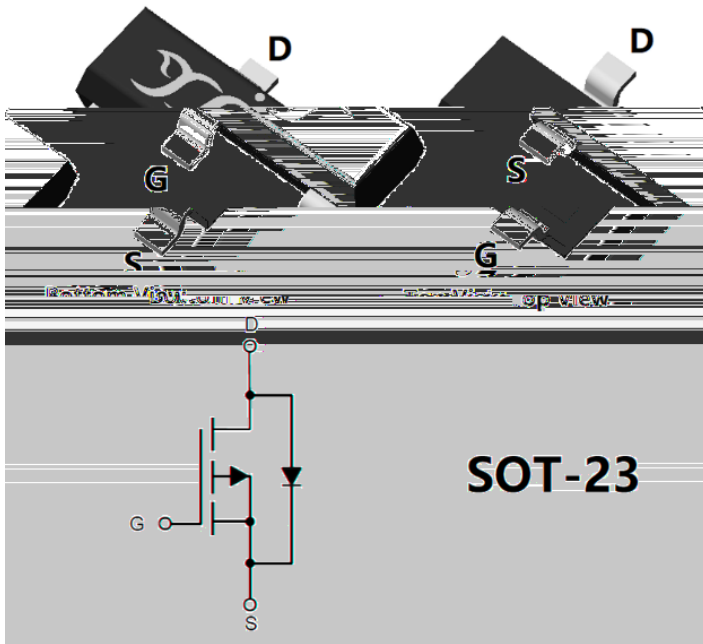




P-Channel Enhancement Mode Field Effect Transistor



Product Summary

$R_{DS(ON)}$	-19V
I_D	-3.8A
$R_{DS(ON)}$ (at $V_{GS}=-4.5V$)	47mohm
$R_{DS(ON)}$ (at $V_{GS}=-2.5V$)	63mohm
$R_{DS(ON)}$ (at $V_{GS}=-1.8V$)	107mohm

General Description

Low $R_{DS(ON)}$
 Low Gate Charge
 Moisture Sensitivity Level 1
 Epoxy Meets UL 94 V-0 Flammability Rating
 Halogen Free

Applications

PWM applications
 Power management
 Load switch

Absolute Maximum Ratings ($T_A=25$ unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	-19	V
Gate-source Voltage		V_{GS}	10	V
Drain Current	$T_A=25$	I_D	-3.8	A
	$T_A=70$		-3	
Pulsed Drain Current ^A		I_{DM}	-15	A
Total Power Dissipation	$T_A=25$	P_D	1	W
	$T_A=70$		0.64	W
Thermal Resistance Junction-to-Ambient ^B		R_{JA}	125	/W
Junction and Storage Temperature Range		T_J, T_{STG}	-55 +150	

Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJL2301D	F2	2301D.	3000	30000	120000	7 reel



YJL2301D

Electrical Characteristics (T_J=25 unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =-250	-19			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-19V, V _{GS} =0V			-1	
Gate-Body Leakage Current	I _{GSS}	V _{GS} = 10V, V _{DS} =0V			100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =-250	-0.4	-0.62	-1.0	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-3.8A		36	47	m
		V _{GS} =-2.5V, I _D =-3.0A		48	63	
		V _{GS} =-1.8V, I _D =-2.5A		78	107	
Diode Forward Voltage	V _{SD}	I _S =-3.8A, V _{GS} =0V			-1.2	V
Maximum Body-Diode Continuous Current	I _S				-3.8	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =-10V, V _{GS} =0V, f=1MHZ		606		pF
Output Capacitance	C _{oss}			114		
Reverse Transfer Capacitance	C _{rss}			103		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =-10V, V _{DS} =-10V, I _D =-3.8A		8.48		nC
Gate-Source Charge	Q _{gs}			1.54		
	Q _{gd}			2.61		
Turn-on Delay Time	t _{D(on)}	V _{GS} =-4.5V, V _{DS} =-10V, I _D =-3.8A R _{GEN} =3		5.8		nC
Turn-on Rise Time	t _r			34.8		
Turn-off Delay Time	t _{D(off)}			51.4		
Turn-off fall Time	t _f			52		

A. Pulse Test: Pulse Width 300us, Duty cycle 2%.

B. R_{JA} is the sum of the junction-to-case and case-to-ambient thermal resistance, where the case therm



Typical Performance Characteristics

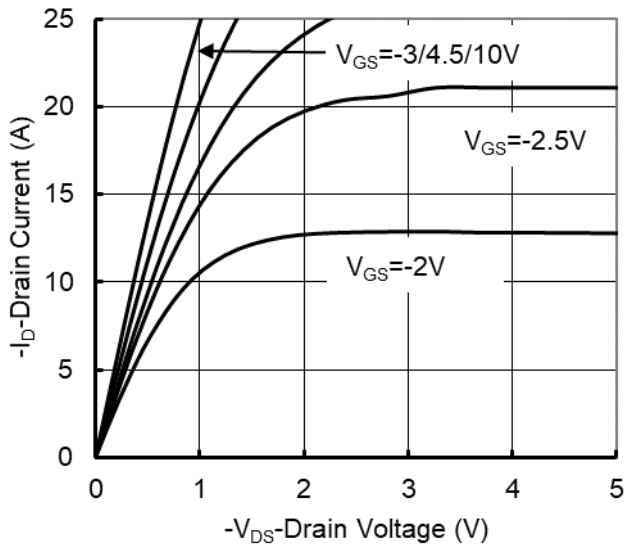


Figure1. Output Characteristics

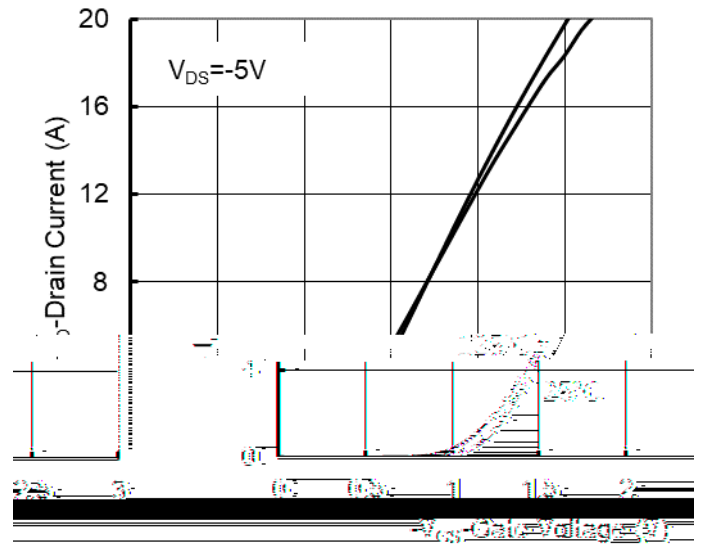


Figure2. Transfer Characteristics

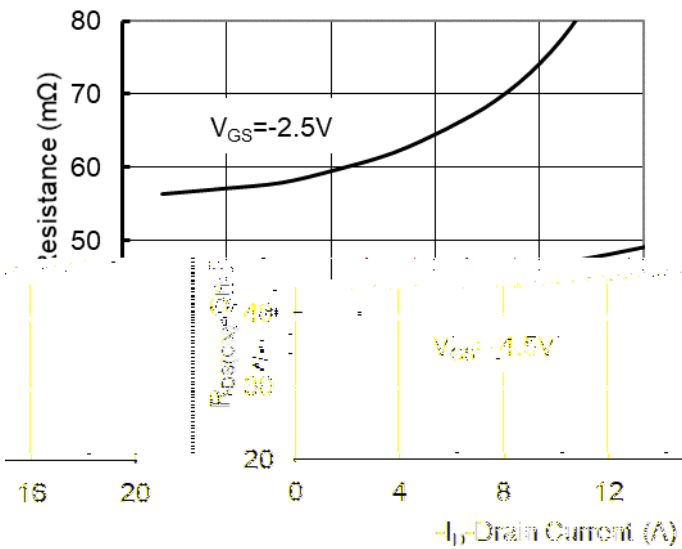


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

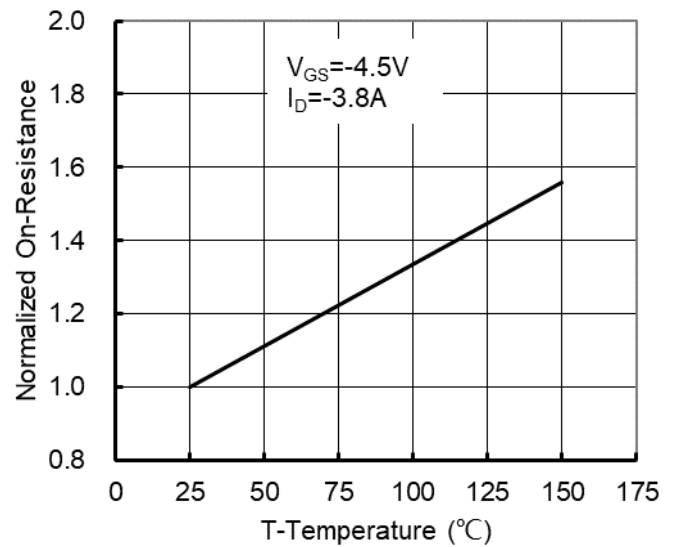


Figure 4: On-Resistance vs. Junction Temperature

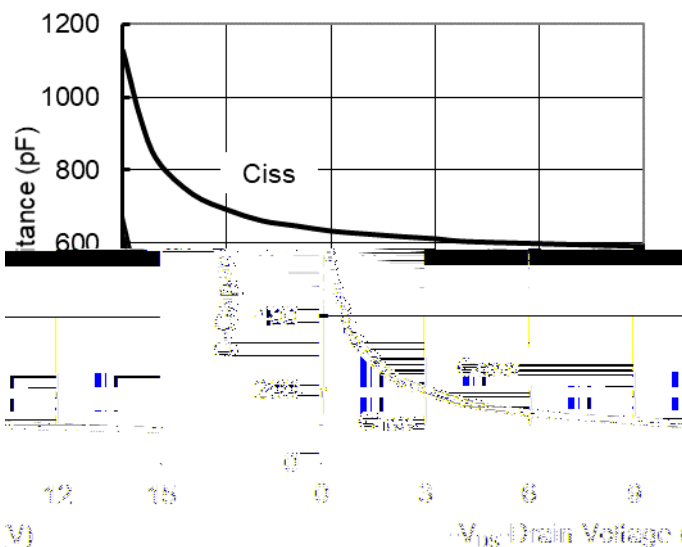


Figure5. Capacitance Characteristics

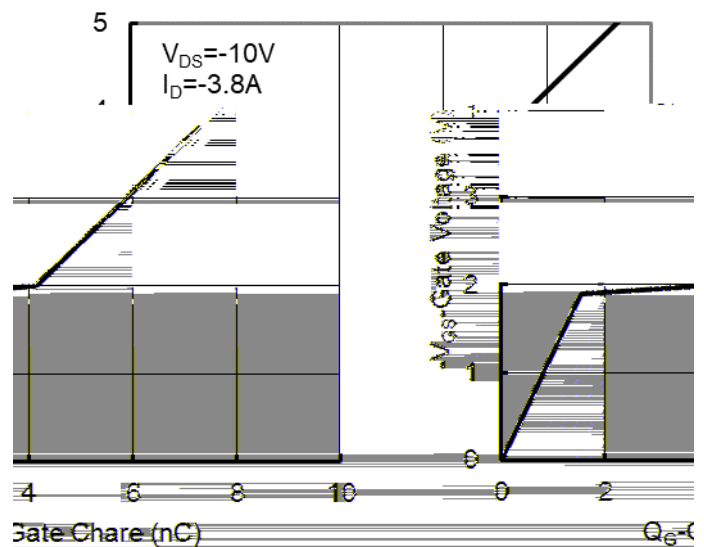


Figure6. Gate Charge

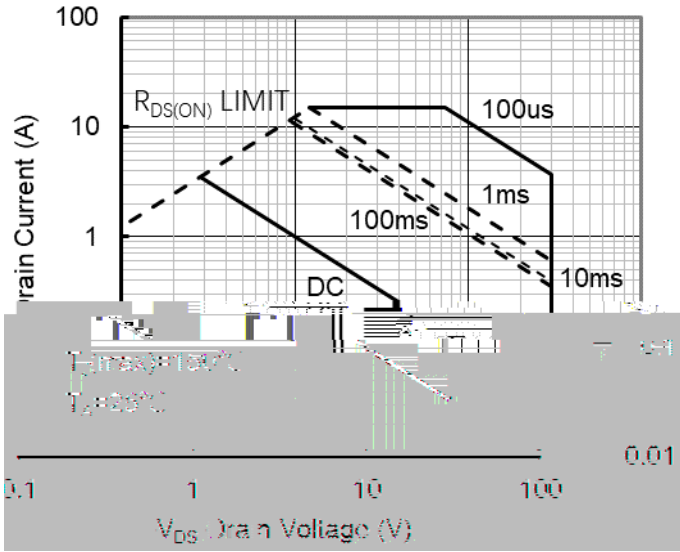


Figure7. Safe Operation Area

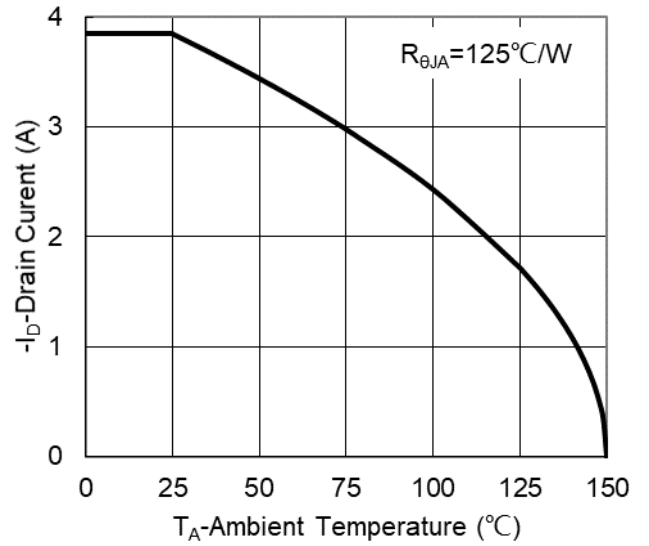


Figure8. Maximum Continuous Drain Current vs Ambient Temperature

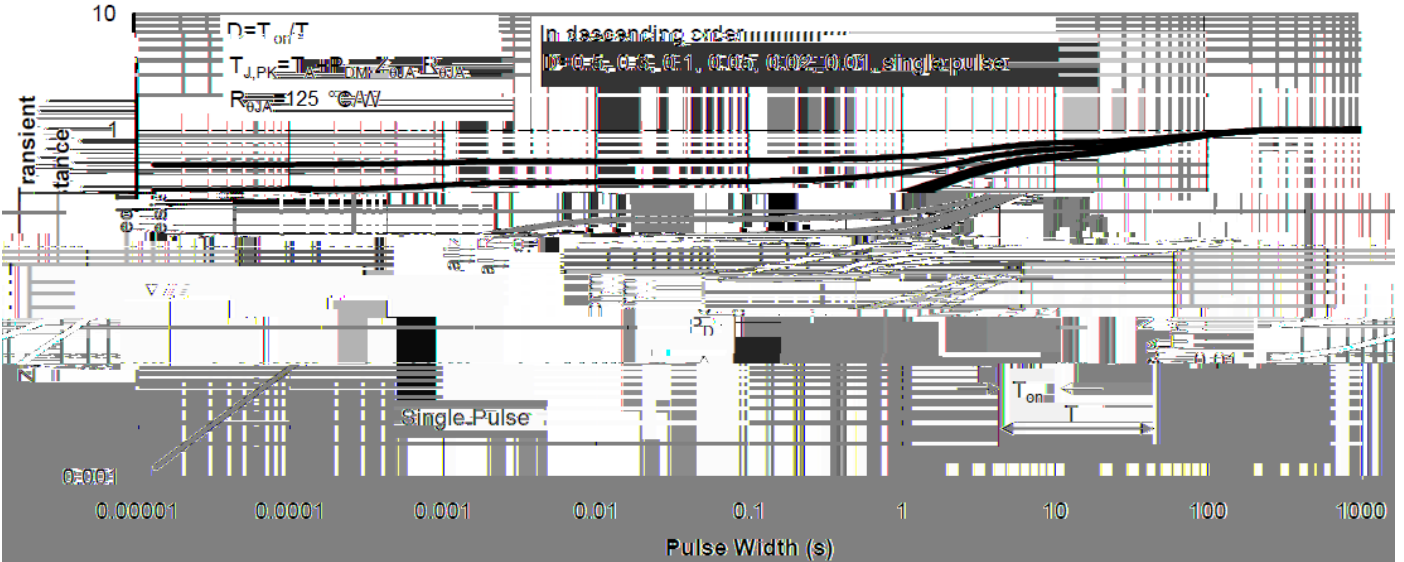
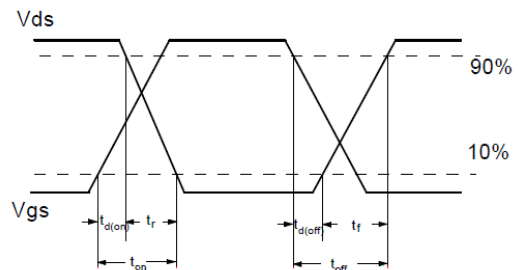
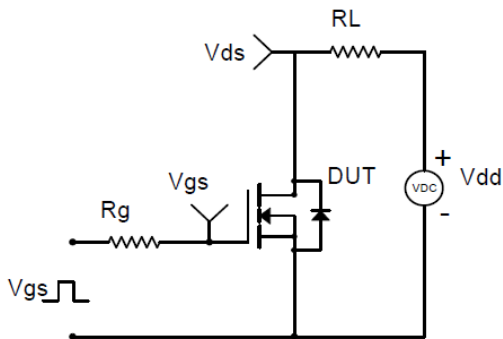
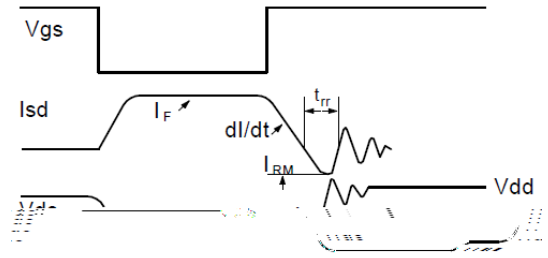
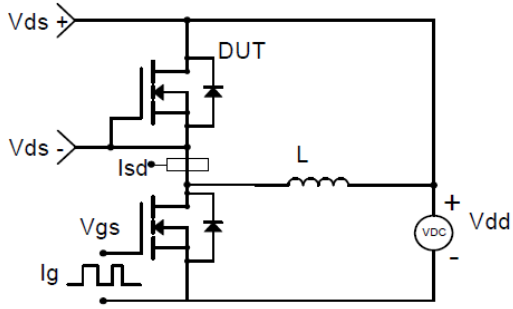


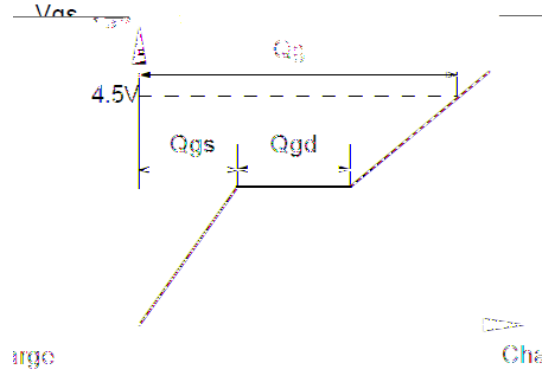
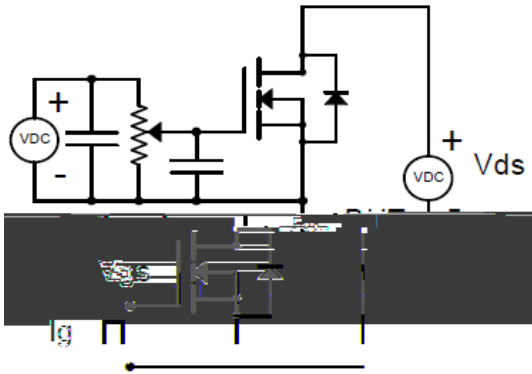
Figure9. Normalized Maximum Transient Thermal Impedance



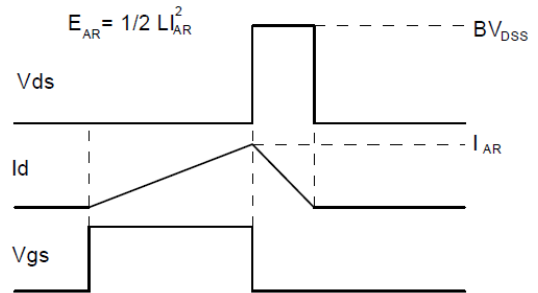
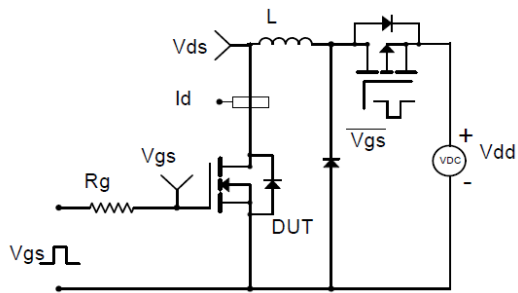
Resistive Switching Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms



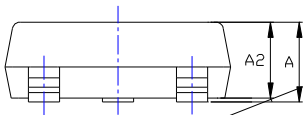
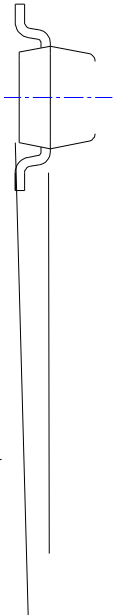
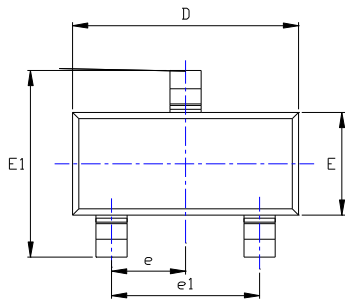
Gate Charge Test Circuit & Waveform



Unclamped Inductive Switching (UIS) Test Circuit & Waveforms



SOT-23 Package information



UNIT mm



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