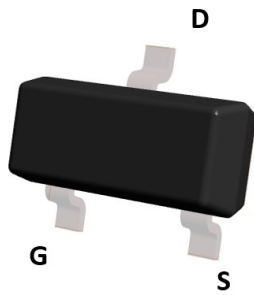
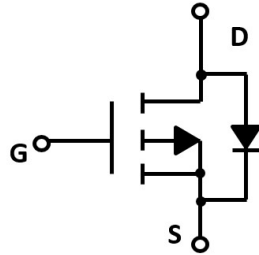
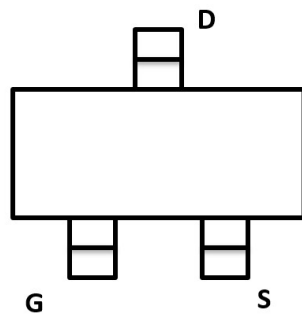


P-Channel Enhancement Mode Field Effect Transistor



Top View

SOT-23



Product Summary

- V_{DS} -20V
- I_D -2A
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) <94 mohm
- $R_{DS(ON)}$ (at $V_{GS}=-2.5V$) <127 mohm
- $R_{DS(ON)}$ (at $V_{GS}=-1.8V$) <187 mohm

General Description

- Trench Power LV MOSFET technology
- Low $R_{DS(ON)}$
- Low Gate Charge

Applications

- Video monitor
- Power management

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

Parameter		Symbol	Maximum	Unit
Drain-source Voltage		V _{DS}	-20	V
Gate-source Voltage		V _{GS}	± 10	V
Drain Current	T _A =25℃ @ Steady State	I _D	-2	A
	T _A =70℃ @ Steady State		-1.6	
Pulsed Drain Current ^A		I _{DM}	-8	A
Total Power Dissipation @ T _A =25℃		P _D	0.7	W
Thermal Resistance Junction-to-Ambient ^B		R _{θJA}	178	℃/ 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
YJL2301F	F2	2301F.	3000	30000	120000	7" reel



YJL2301F

■ 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 =-250μA	-20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V,V _{GS} =0V,T _C =25℃			-1	μA
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 =-250μA	-0.4	-0.62	-1.0	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = -4.5V, I _D =-1.5A		81	94	mΩ
		V _{GS} = -2.5V, I _D =-1.5A		109	127	
		V _{GS} = -1.8V, I _D =-1.5A		152	187	
Diode Forward Voltage	V _{SD}	I _S =-2A,V _{GS} =0V		-0.8	-1.2	V
Maximum Body-Diode Continuous Current	I _S				-2	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =-10V,V _{GS} =0V,f=1MHZ		327		pF
Output Capacitance	C _{oss}			62		
Reverse Transfer Capacitance	C _{rss}			55		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =-4.5V,V _{DS} =-10V,I _D =-2A		4.5		nC
Gate Source Charge	Q _{gs}			0.85		
Gate Drain Charge	Q _{gd}			1.4		
Reverse Recovery Charge	Q _{rr}	I _F =-2A, di/dt=100A/us		2.3		
Reverse Recovery Time	t _{rr}			27		
Turn-on Delay Time	t _{D(on)}	V _{GS} =-4.5V,V _{DD} =-10V, I _D =-1A, R _{GEN} =2.5Ω		6		ns
Turn-on Rise Time	t _r			30		
Turn-off Delay Time	t _{D(off)}			45		
Turn-off Fall Time	t _f			46		

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

B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.



■ Typical Performance Characteristics

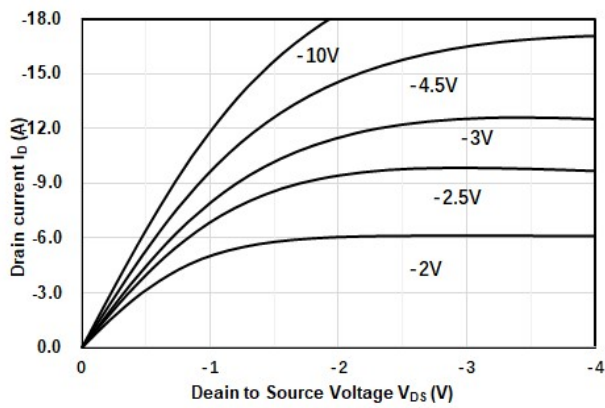


Figure1. Output Characteristics

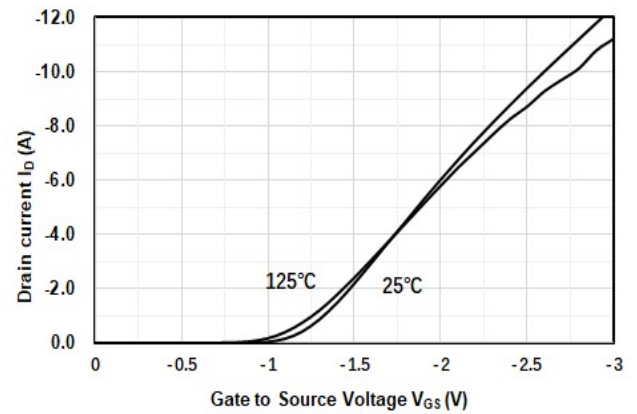


Figure2. Transfer Characteristics

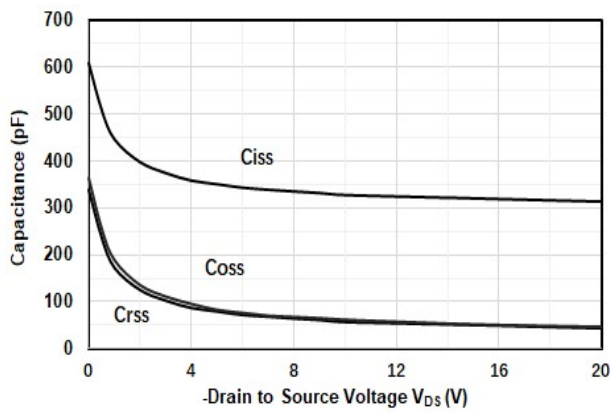


Figure3. Capacitance Characteristics

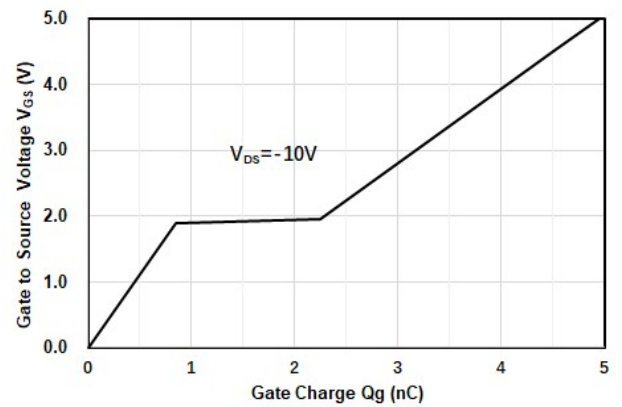


Figure4. Gate Charge

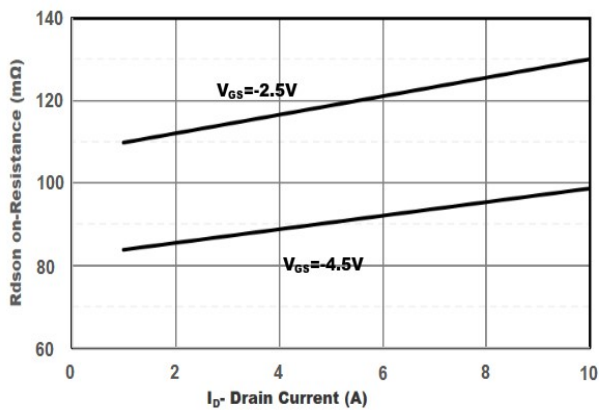


Figure5. Drain-Source on Resistance

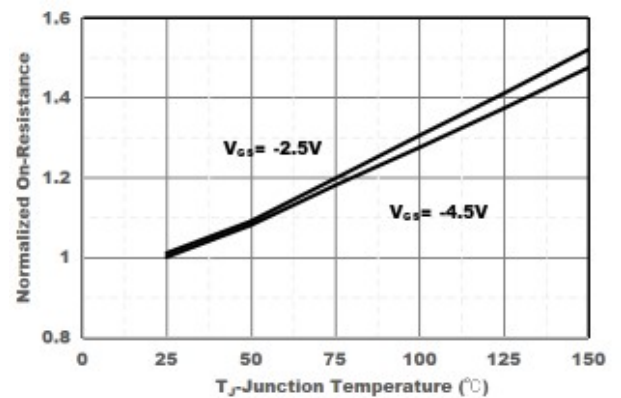


Figure6. Drain-Source on Resistance

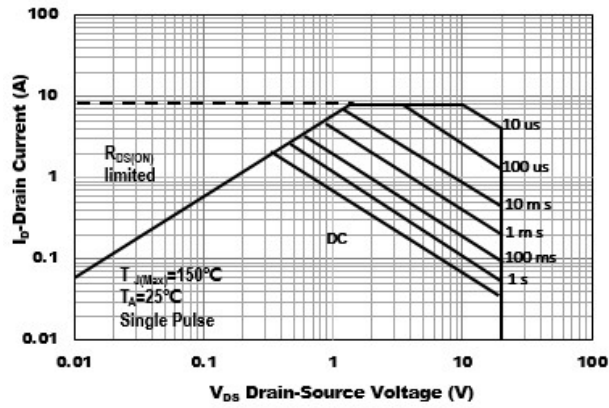


Figure7. Safe Operation Area

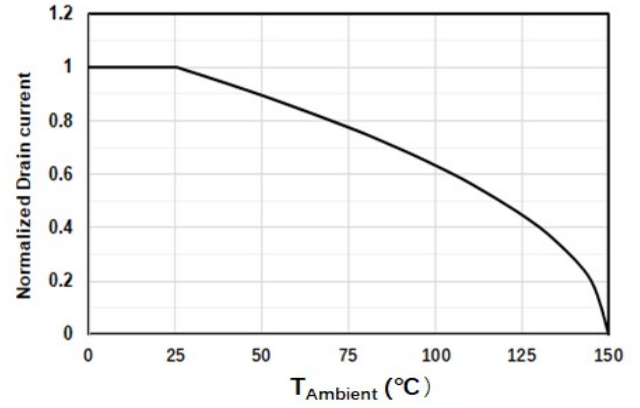


Figure8. Drain Current vs Ambient temperature

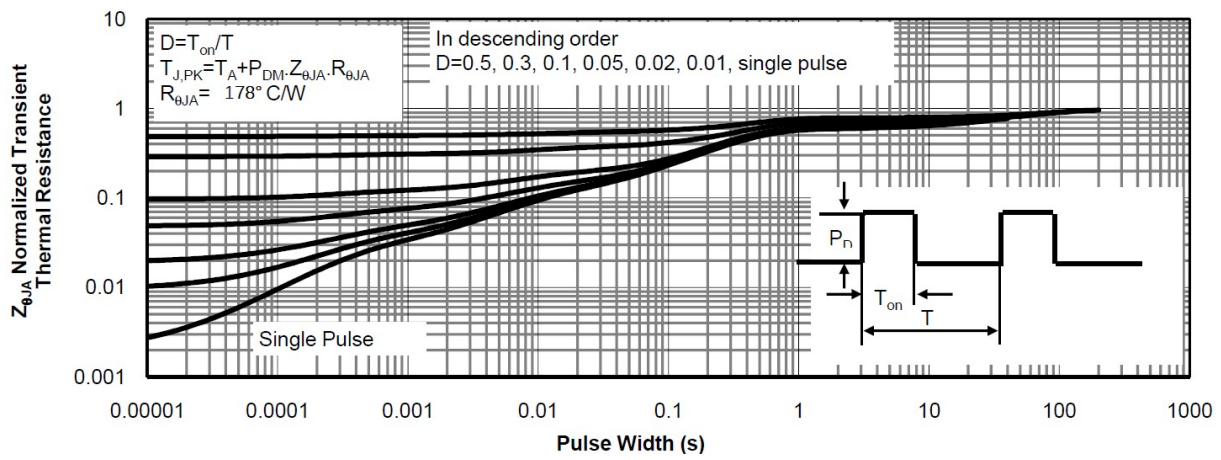
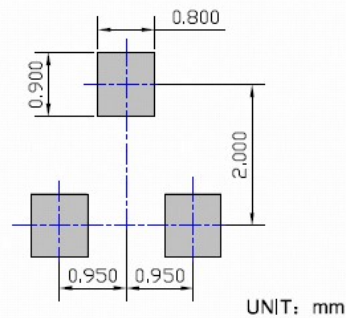
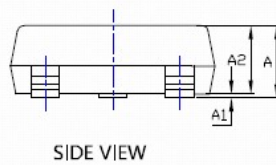
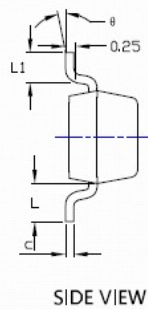
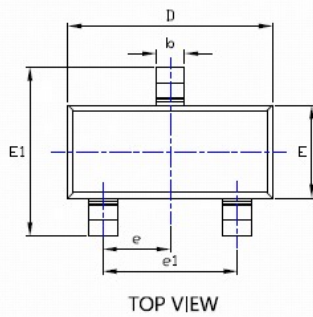


Figure9. Normalized Maximum Transient Thermal Impedance



■ SOT-23 Package information



SUGGESTED SOLDER PAD LAYOUT

SYMBOL	DIMENSIONS					
	INCHES			MILLimeter		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	0.035	---	0.045	0.900	---	1.150
A1	0.000	---	0.004	0.000	---	0.100
A2	0.035	0.038	0.041	0.900	0.975	1.050
b	0.012	0.016	0.020	0.300	0.400	0.500
c	0.004	---	0.008	0.100	---	0.200
D	0.110	0.114	0.118	2.800	2.900	3.000
E	0.047	0.051	0.055	1.200	1.300	1.400
E1	0.089	0.094	0.100	2.250	2.400	2.550
e	0.037TYP			0.950TYP		
e1	0.071	0.075	0.079	1.800	1.900	2.000
L	0.022REF			0.550REF		
L1	0.012	0.016	0.200	0.300	0.400	0.500
e	0°	---	8°	0°	---	8°

NOTE:

- 1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
- 2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
- 3.THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.



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