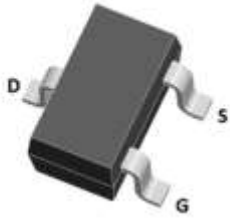
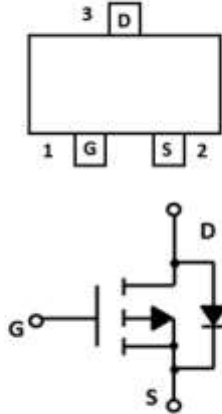


P-Channel Enhancement Mode Field Effect Transistor



SOT-323



Product Summary

- V_{DS} -20V
- I_D -2.0A
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) < 130 mohm
- $R_{DS(ON)}$ (at $V_{GS}=-2.5V$) < 170 mohm
- $R_{DS(ON)}$ (at $V_{GS}=-1.8V$) < 250 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	I_D	$T_A=25^\circ C$ @ Steady State	-2.0
		$T_A=70^\circ C$ @ Steady State	-1.6
Pulsed Drain Current ^A	I_{DM}	-8	A
Total Power Dissipation @ $T_A=25^\circ C$	P_D	0.45	W
Thermal Resistance Junction-to-Ambient ^B	$R_{\theta JA}$	278	$^\circ C/W$
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^\circ C$

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJL2101W	F2	TS1.	3000	30000	120000	7" reel



YJL2101W

■ 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 =-250μA	-20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V, T _C =25°C			-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		100	130	mΩ
		V _{GS} = -2.5V, I _D =-1.2A		130	170	
		V _{GS} = -1.8V, I _D =-1.0A		165	250	
Diode Forward Voltage	V _{SD}	I _S =-2.0A, V _{GS} =0V		-0.8	-1.2	V
Maximum Body-Diode Continuous Current	I _S				-2.0	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =-10V, V _{GS} =0V, f=1MHZ		290		pF
Output Capacitance	C _{oss}			47		
Reverse Transfer Capacitance	C _{rss}			29		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =-4.5V, V _{DS} =-10V, I _D =-1.0A		3.9		nC
Gate Source Charge	Q _{gs}			0.7		
Gate Drain Charge	Q _{gd}			0.9		
Turn-on Delay Time	t _{D(on)}	V _{GS} =-4.5V, V _{DD} =-10V, I _D =-1A, R _{GEN} =2.5Ω		12		ns
Turn-on Rise Time	t _r			54		
Turn-off Delay Time	t _{D(off)}			15		
Turn-off Fall Time	t _f			9		

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

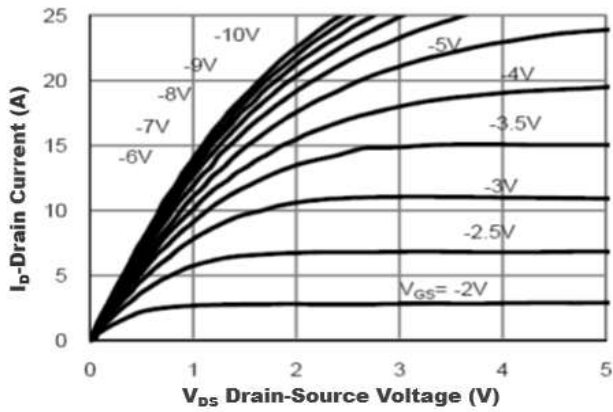


Figure1. Output Characteristics

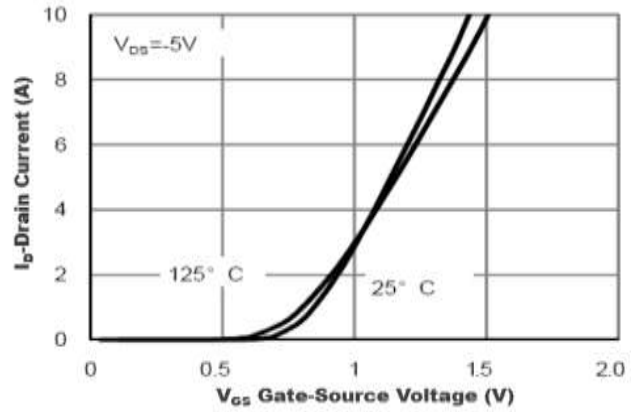


Figure2. Transfer Characteristics

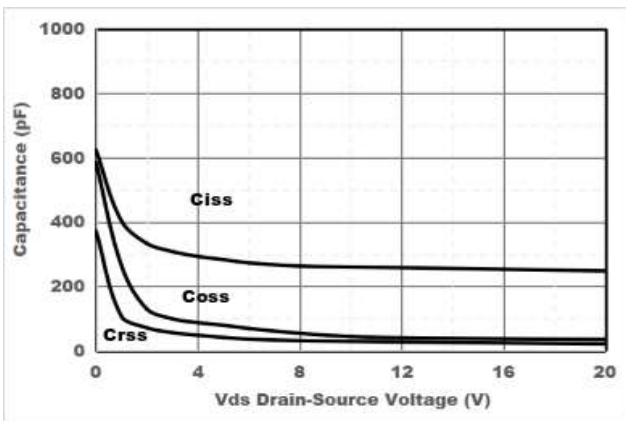


Figure3. Capacitance Characteristics

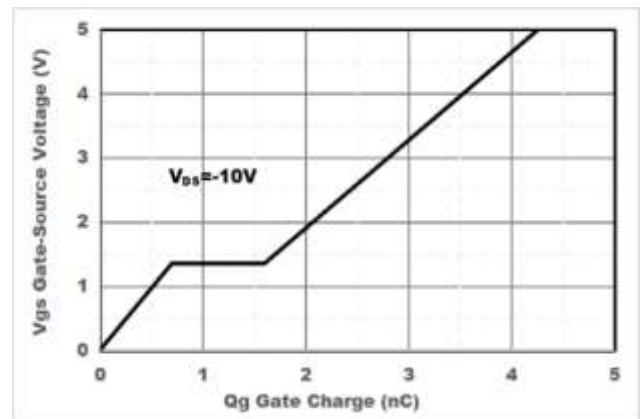


Figure4. Gate Charge

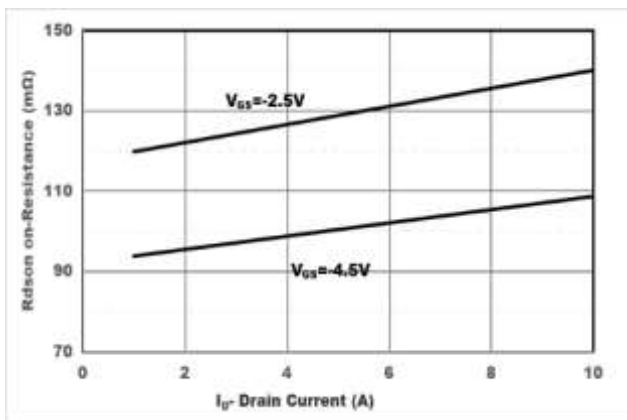


Figure5. Drain-Source on Resistance

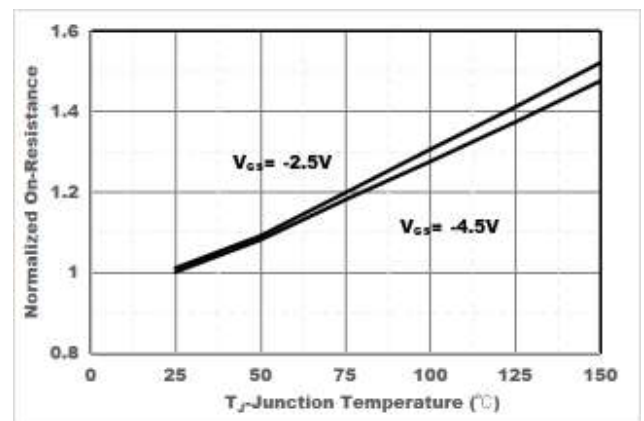


Figure6. Drain-Source on Resistance

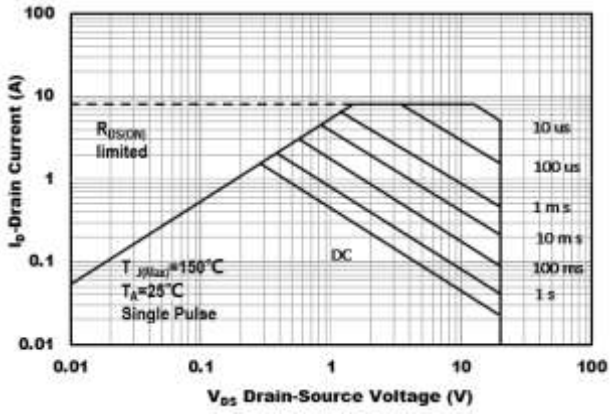


Figure7. Safe Operation Area

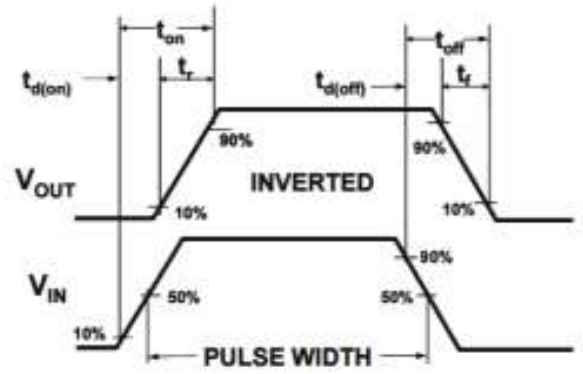
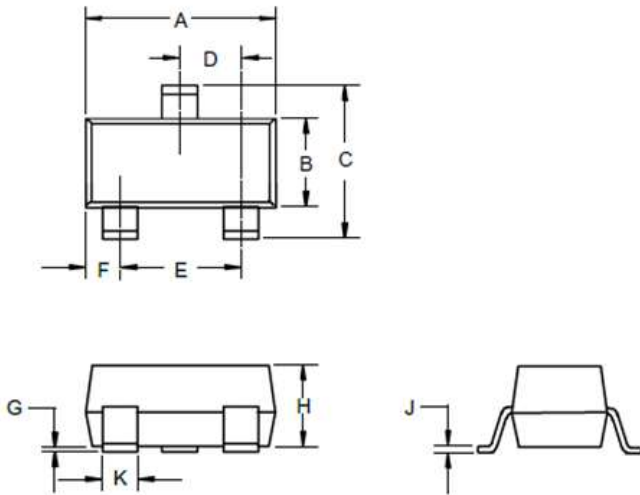


Figure8. Switching wave



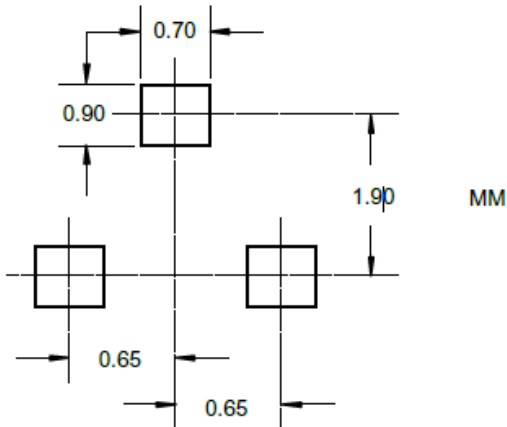
YJL2101W

■ SOT-323 Package information



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.071	.087	1.80	2.20	
B	.045	.053	1.15	1.35	
C	.083	.096	2.10	2.45	
D	.026 Nominal		0.65Nominal		
E	.047	.055	1.20	1.40	
F	.012	.016	.30	.40	
G	.000	.004	.000	.100	
H	.035	.039	.90	1.00	
J	.004	.010	.100	.250	
K	.006	.016	.15	.40	

■ SOT-323 Suggested Pad Layout





YJL2101W

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