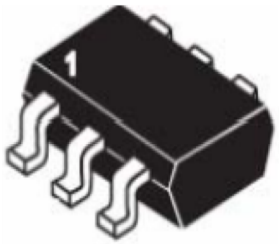
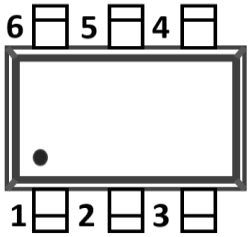
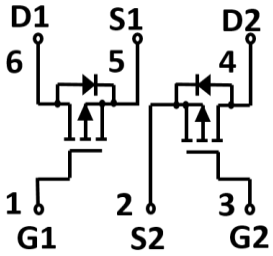
P-Channel Enhancement Mode Field Effect Transistor



SOT-23-6L





Product Summary

- V_{DS} -20V
- I_D -3.7A
- $R_{DS(ON)}$(at V_{GS}=-4.5V) ＜64 mohm
- $R_{DS(ON)}$(at V_{GS}=-2.5V) ＜80 mohm
- $R_{DS(ON)}$(at V_{GS}=-1.8V) ＜95 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℃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	-3.7	A
	T_A=70℃ @ Steady State		-3	
Pulsed Drain Current [A]		I_{DM}	-16	A
Total Power Dissipation @ T_A=25℃		P_D	1.3	W
Thermal Resistance Junction-to-Ambient @ Steady State		$R_{\theta JA}$	96	℃/ W
Junction and Storage Temperature Range		T_J ,T_{STG}	-55～+150	℃

■ Ordering Information (Example)

PREFERED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJS2301A	F2	.S1	3000	/	180000	7“ reel

■ 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=-3.4A		49	64	mΩ
		V_{GS}= -2.5V, I_D=-3A		59	80	
		V_{GS}= -1.8V, I_D=-2.5A		79	95	
Diode Forward Voltage	V_{SD}	I_S=-3.7A,V_{GS}=0V		-0.8	-1.2	V
Maximum Body-Diode Continuous Current	I_S				-3.7	A
Dynamic Parameters						
Input Capacitance	C_{iss}	V_{DS}=-10V,V_{GS}=0V,f=1MHZ		478		pF
Output Capacitance	C_{oss}			81		
Reverse Transfer Capacitance	C_{rss}			51		
Switching Parameters						
Total Gate Charge	Q_g	V_{GS}=-4.5V,V_{DS}=-10V,I_D=-3.7A		4.3		nC
Gate Source Charge	Q_{gs}			0.8		
Gate Drain Charge	Q_{gd}			1.1		
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.Pulse Test: Pulse Width≤300us,Duty cycle ≤2%.

■ Typical Performance Characteristics

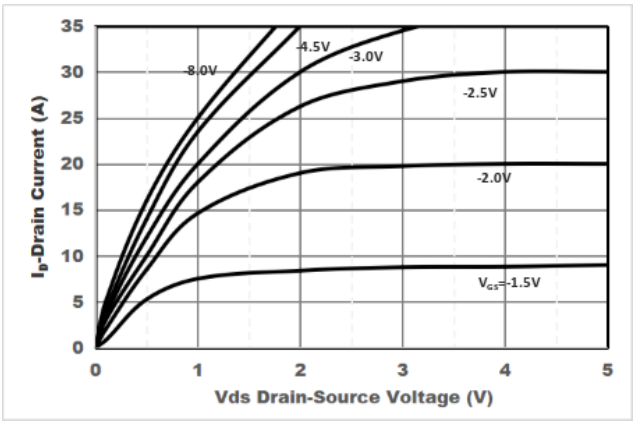


Figure1. Output Characteristics

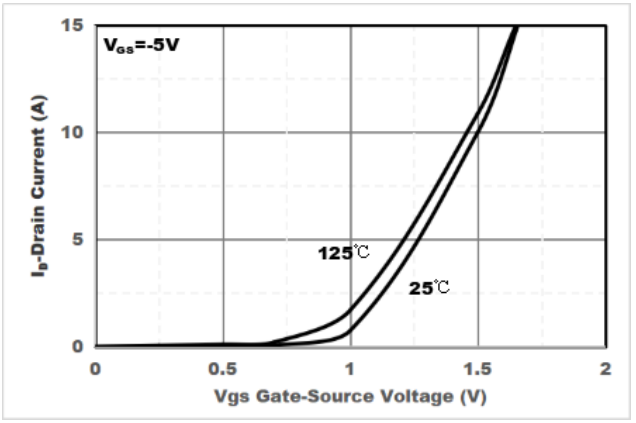


Figure2. Transfer Characteristics

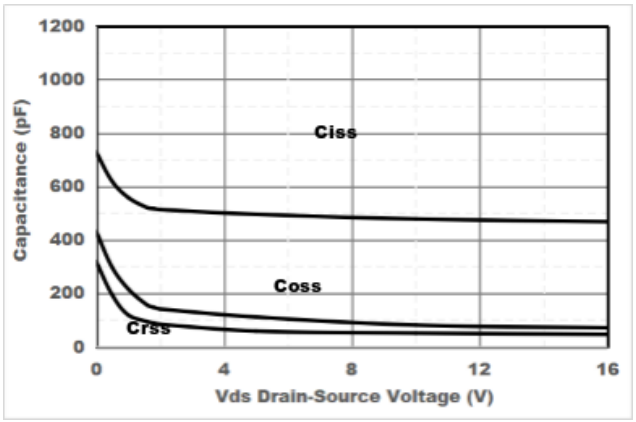


Figure3. Capacitance Characteristics

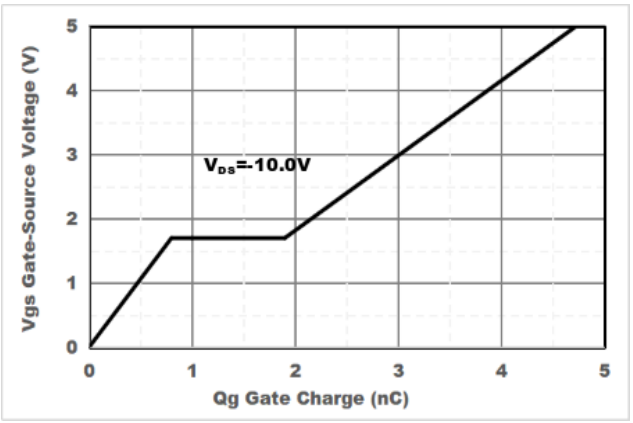


Figure4. Gate Charge

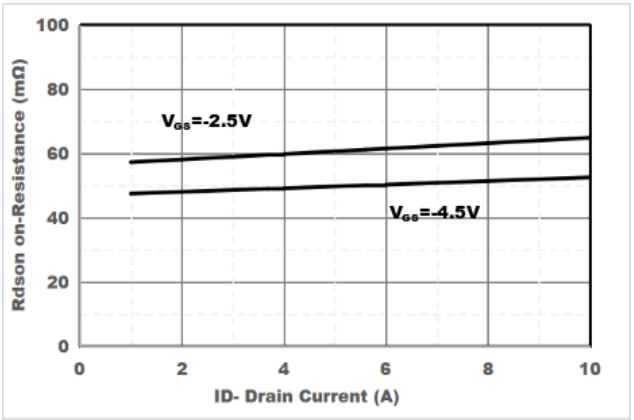


Figure5. Drain-Source on Resistance

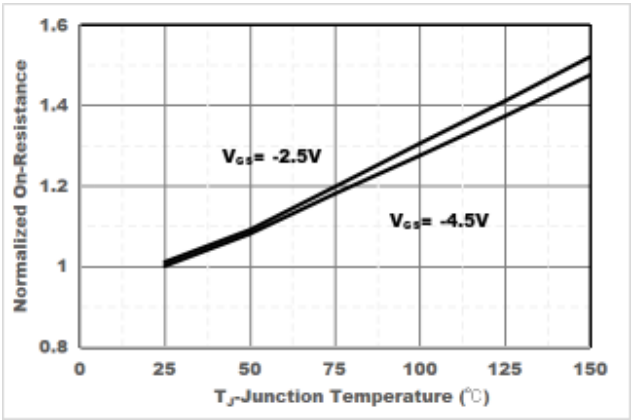


Figure6. Drain-Source on Resistance

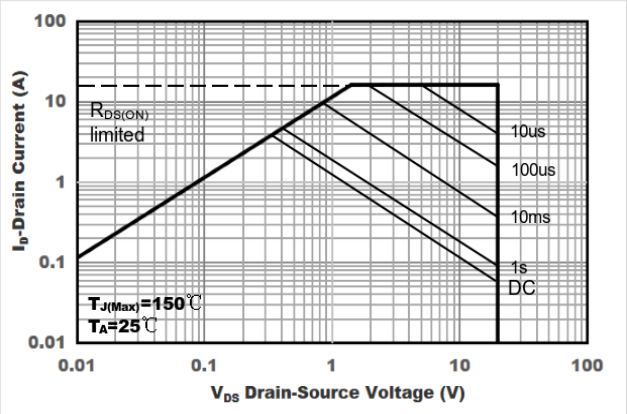


Figure7. Safe Operation Area

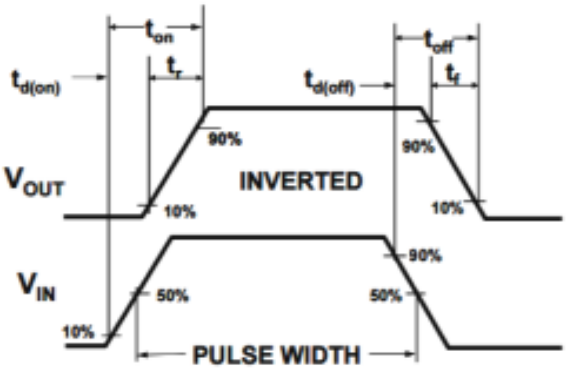
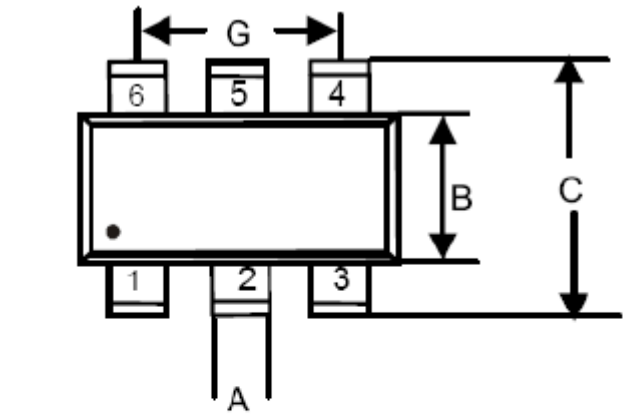
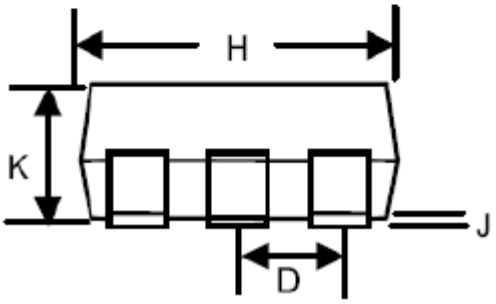


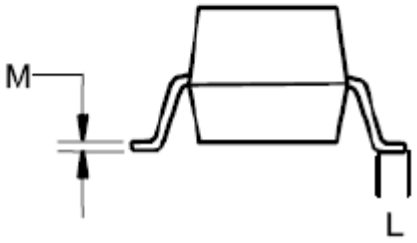
Figure8. Switching wave

■ SOT-23-6L Package information

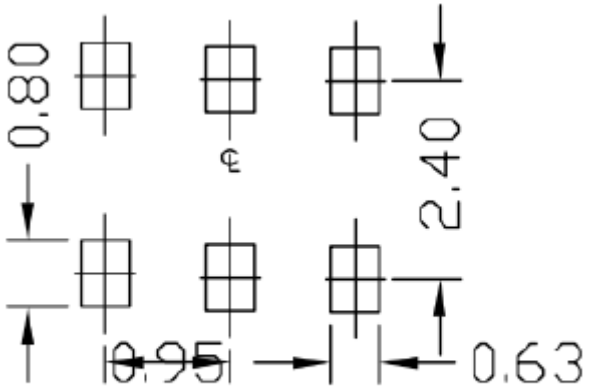


DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
A	.012	.020	0.30	0.50	
B	.051	.070	1.30	1.80	
C	.087	.126	2.20	3.20	
D	.037		0.95BSC		
G	.074		1.90BSC		
H	.106	.122	2.70	3.10	
J	.002	.006	0.05	0.15	
K	.035	.051	0.90	1.30	
L	.012	.024	0.30	0.60	
M	.003	.008	0.08	0.22	





■ SOT-23-6L Suggested Pad Layout



UNIT: mm

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