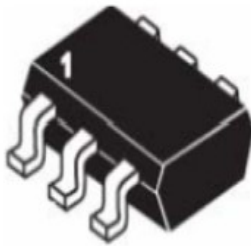
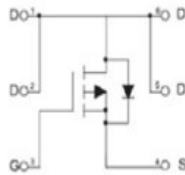
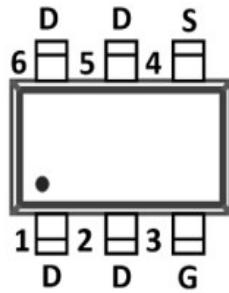


P-Channel Enhancement Mode Field Effect Transistor



SOT-23-6L



Product Summary

- V_{DS} -30V
- I_D -6.0A
- $R_{DS(ON)}$ (at $V_{GS}=-10V$) <49 mohm
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) <65 mohm

General Description

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

Applications

- Battery protection
- Load switch
- Power management

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

Parameter		Symbol	Maximum	Unit
Drain-source Voltage		V_{DS}	-30	V
Gate-source Voltage		V_{GS}	± 20	V
Drain Current	$T_A=25^\circ\text{C}$ @ Steady State	I_D	-6.0	A
	$T_A=70^\circ\text{C}$ @ Steady State		-4.8	
Pulsed Drain Current ^A		I_{DM}	-25	A
Total Power Dissipation	$T_A=25^\circ\text{C}$	P_D	1.2	W
	$T_A=70^\circ\text{C}$		1.0	
Thermal Resistance Junction-to-Ambient @ Steady State ^B		$R_{\theta JA}$	104	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range		T_J, T_{STG}	-55~+150	$^\circ\text{C}$

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJJ06P03A	F2	0306	3000	30000	120000	7" reel



YJJ06P03A

■ 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	-30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V,V _{GS} =0V,T _C =25℃			-1	μA
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 =-250μA	-1	-1.5	-2.4	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = -10V, I _D =-6.0A		36	49	mΩ
		V _{GS} = -4.5V, I _D =-4.0A		52	65	
Diode Forward Voltage	V _{SD}	I _S =-6.0A,V _{GS} =0V			-1.2	V
Maximum Body-Diode Continuous Current	I _S				-6.0	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =-15V,V _{GS} =0V,f=1MHZ		572		pF
Output Capacitance	C _{oss}			82		
Reverse Transfer Capacitance	C _{rss}			70		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =-10V,V _{DS} =-15V,I _D =-6A		11.7		nC
Gate Source Charge	Q _{gs}			2.3		
Gate Drain Charge	Q _{gd}			2.1		
Reverse Recovery Chrage	Q _{rr}	I _F =-6A, di/dt=100A/us		0.64		
Reverse Recovery Time	t _{rr}			15.7		
Turn-on Delay Time	t _{D(on)}	V _{GS} =-10V, V _{DS} =-15V, R _L =15Ω R _{GEN} =2.5Ω		3.8		ns
Turn-on Rise Time	t _r			17.6		
Turn-off Delay Time	t _{D(off)}			17.8		
Turn-off Fall Time	t _f			21.8		

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

B. R_{θJA} is the sum of the junction-to-case and case-to-ambient thermal resistance, where the case thermal reference is defined as the solder mounting surface of the drain pins. R_{θJC} is guaranteed by design, while R_{θJA} is determined by the board design. The maximum rating presented here is based on mounting on a 1 in² FR-4 board with 2oz copper.



■ Typical Performance Characteristics

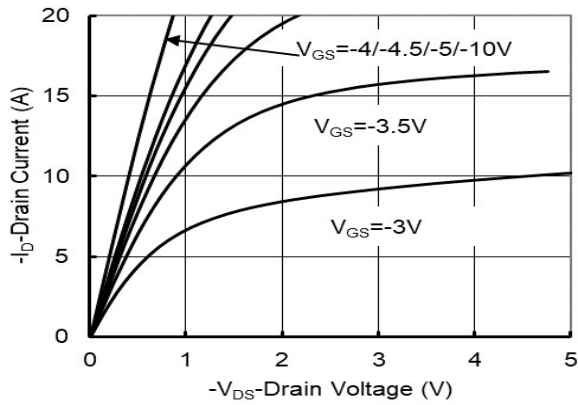


Figure1. Output Characteristics

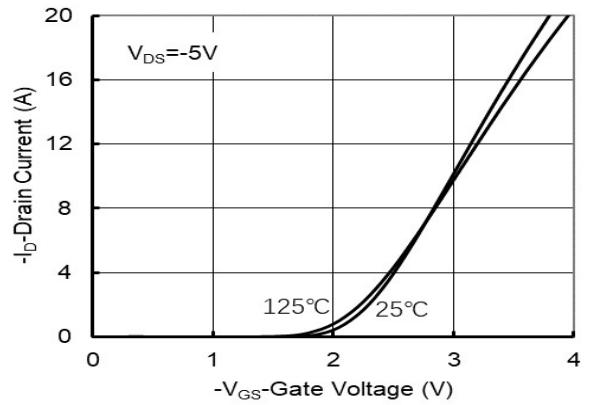


Figure2. Transfer Characteristics

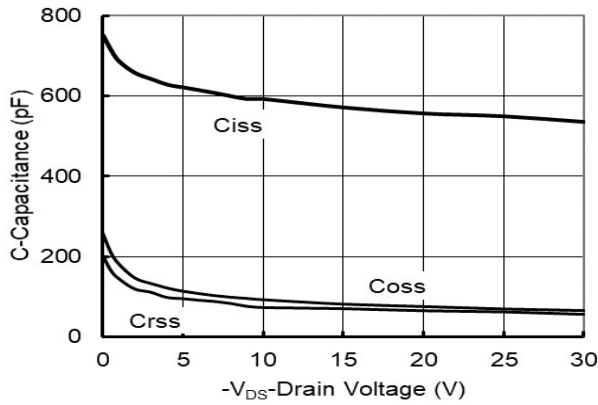


Figure3. Capacitance Characteristics

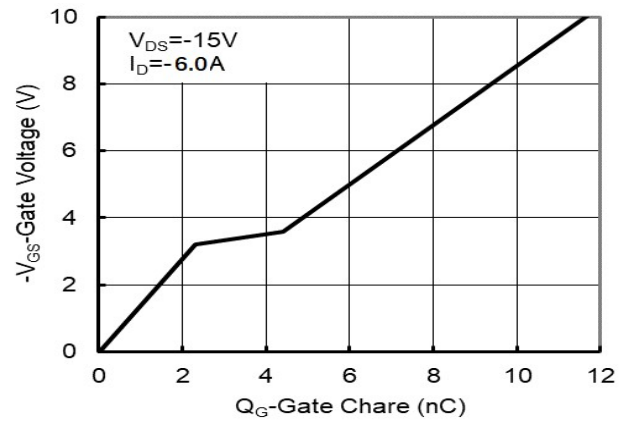


Figure4. Gate Charge

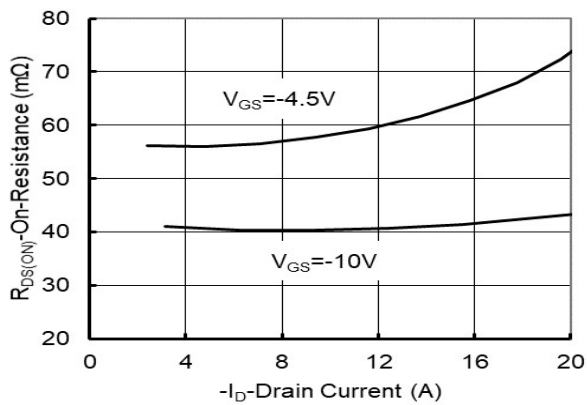


Figure5. Drain-Source on Resistance

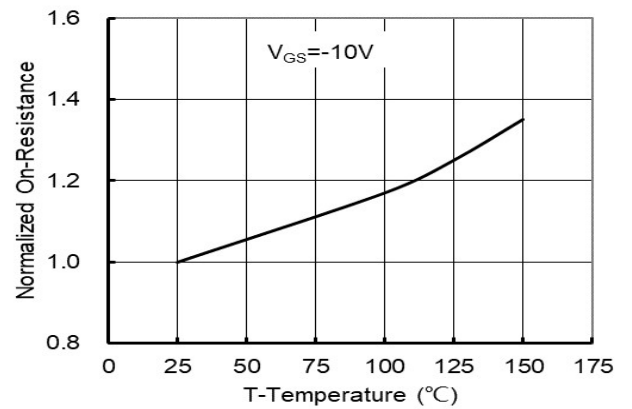


Figure6. Drain-Source on Resistance

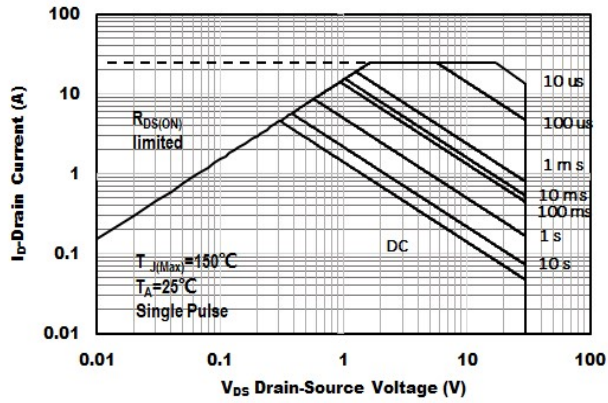


Figure7. Safe Operation Area

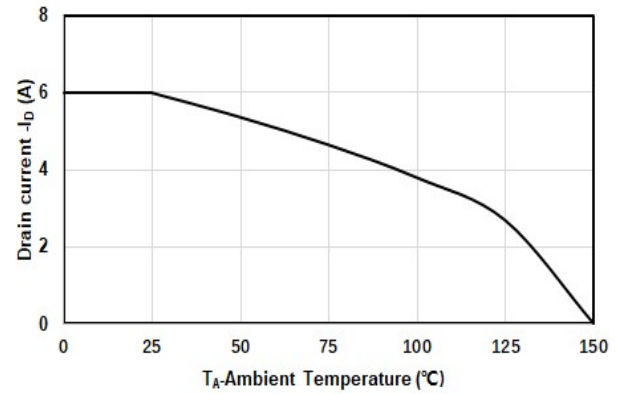


Figure8. Maximum Continuous Drain Current vs Ambient Temperature

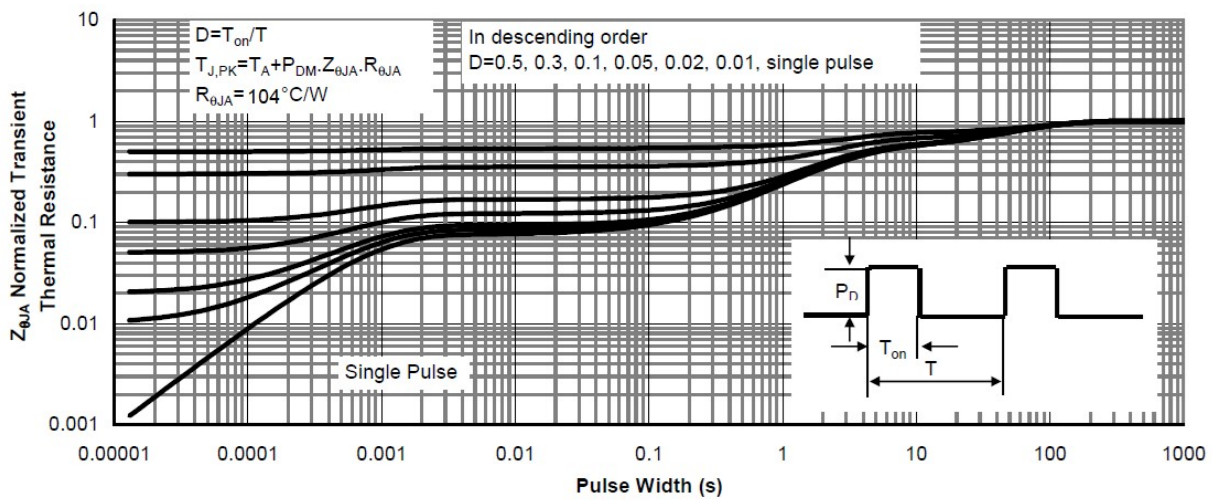
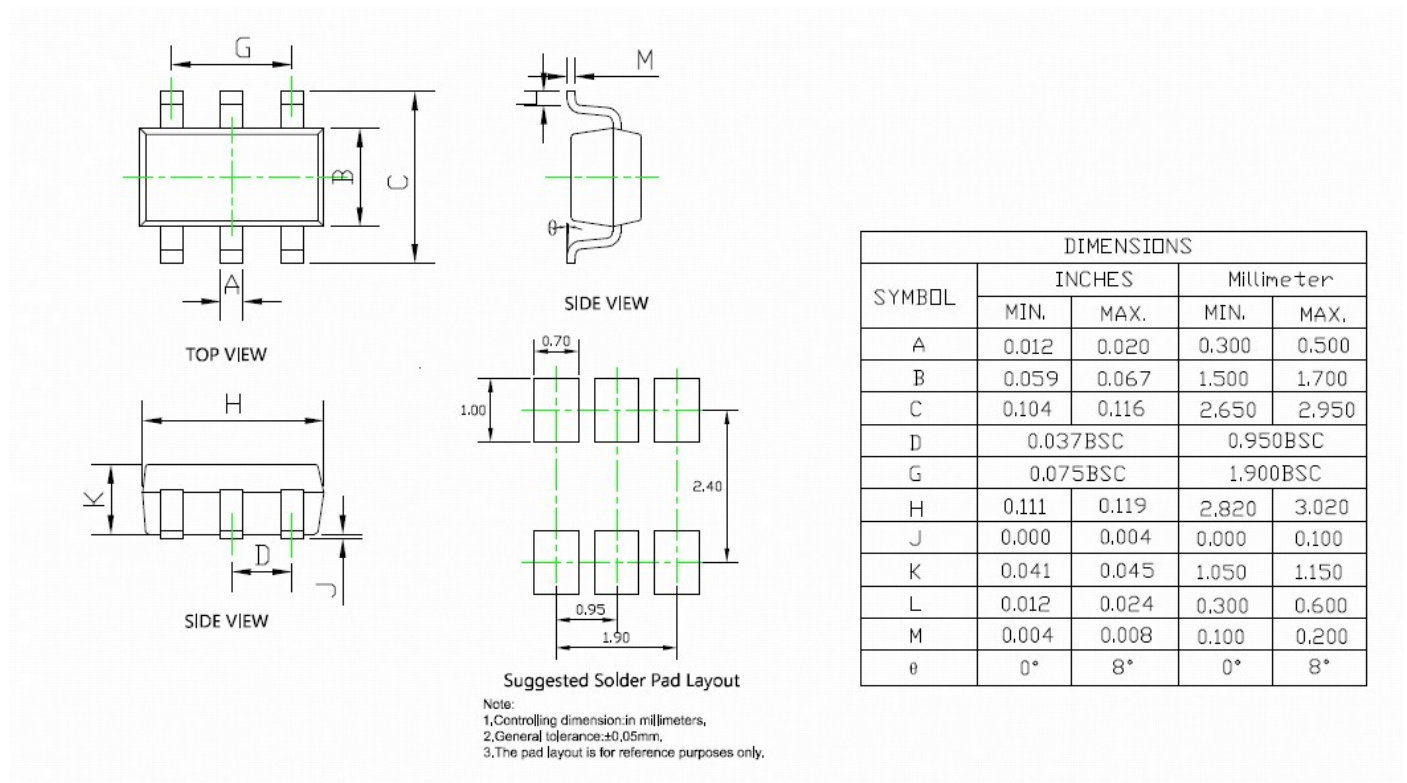


Figure9. Normalized Maximum Transient Thermal Impedance



■ SOT-23-6L Package information





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