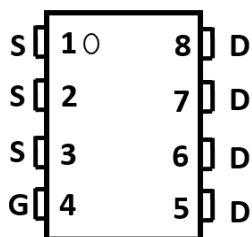
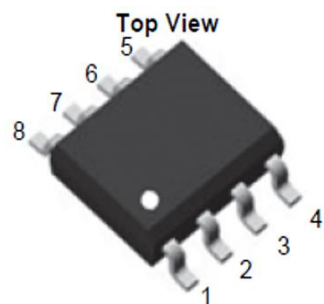
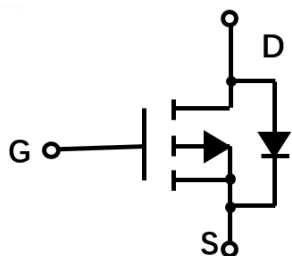


P-Channel Enhancement Mode Field Effect Transistor



SOP-8



Product Summary

- V_{DS} -20V
- I_D -13A
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) <18 mohm
- $R_{DS(ON)}$ (at $V_{GS}=-2.5V$) <22 mohm
- $R_{DS(ON)}$ (at $V_{GS}=-1.8V$) <31 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 ($T_A=25^{\circ}C$ 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	A
		$T_A=70^{\circ}C$ @ Steady State	
Pulsed Drain Current ^A	I_{DM}	-55	A
Total Power Dissipation @ $T_A=25^{\circ}C$	P_D	3.0	W
Thermal Resistance Junction-to-Ambient @ Steady State ^B	$R_{\theta JA}$	42	$^{\circ}C/W$
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^{\circ}C$

■ Ordering Information (Example)

PREFERED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJS2022A	F2	Q2022	4000	8000	64000	13" reel



YJS2022A

■ 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 =-10A		14	18	mΩ
		V _{GS} = -2.5V, I _D =-6.5A		17	22	
		V _{GS} = -1.8V, I _D =-4.0A		21	31	
Diode Forward Voltage	V _{SD}	I _S =-13A,V _{GS} =0V		-0.8	-1.2	V
Maximum Body-Diode Continuous Current	I _S				-13	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =-10V,V _{GS} =0V,f=1MHZ		2050		pF
Output Capacitance	C _{oss}			411		
Reverse Transfer Capacitance	C _{rss}			362		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =-10V,V _{DS} =-15V,I _D =-9.1A		30		nC
Gate Source Charge	Q _{gs}			5.3		
Gate Drain Charge	Q _{gd}			7.6		
Turn-on Delay Time	t _{D(on)}	V _{GS} =-10V,V _{DS} =-15V, I _D =-6A, R _{GEN} =2.5Ω		14		ns
Turn-on Rise Time	t _r			20		
Turn-off Delay Time	t _{D(off)}			95		
Turn-off Fall Time	t _f			65		

A. Repetitive Rating: Pulse width limited by maximum junction temperature.

B. Surface Mounted on FR4 Board, t ≤ 10 sec.

■ Typical Performance Characteristics

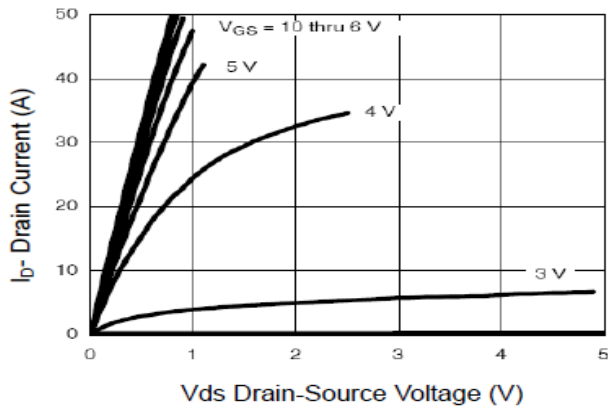


Figure1. Output Characteristics

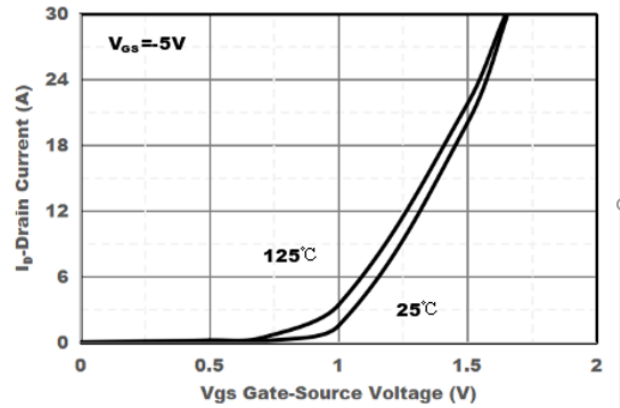


Figure2. Transfer Characteristics

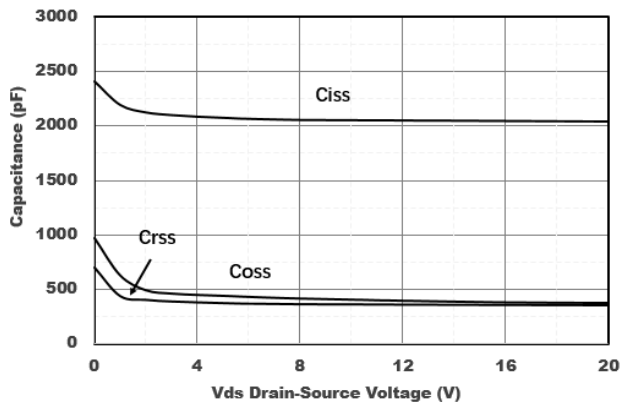


Figure3. Capacitance Characteristics

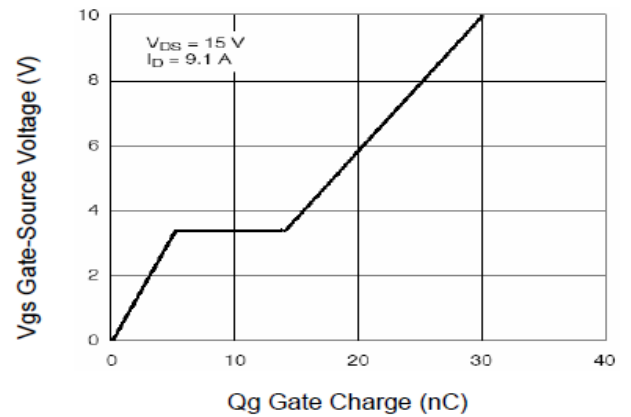


Figure4. Gate Charge

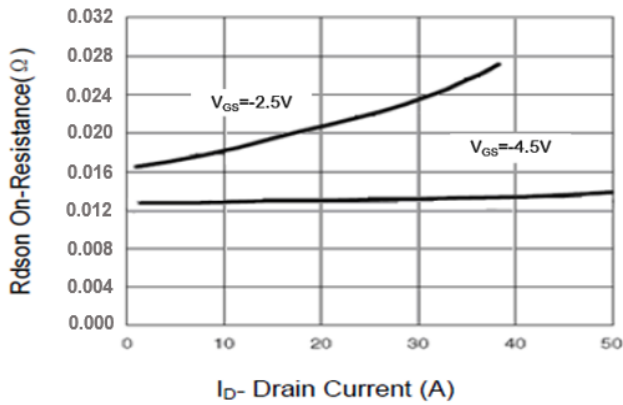


Figure5. Drain-Source on Resistance

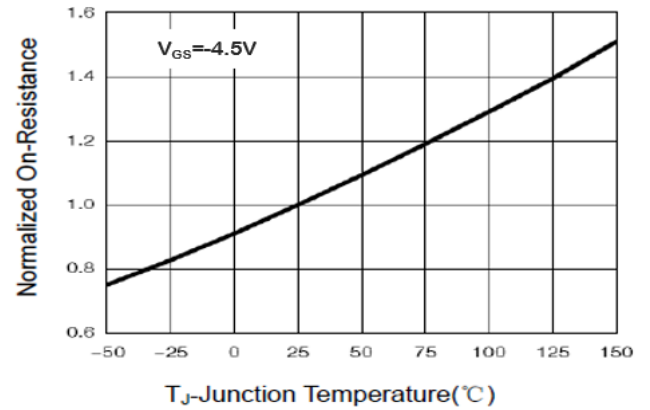


Figure6. Drain-Source on Resistance

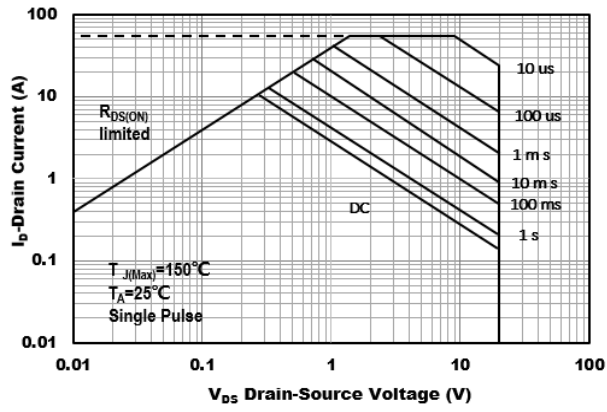


Figure7. Safe Operation Area

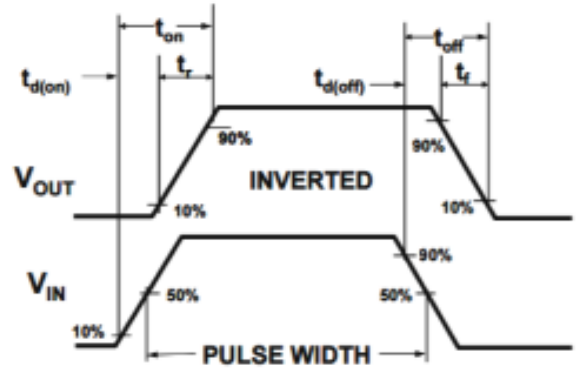
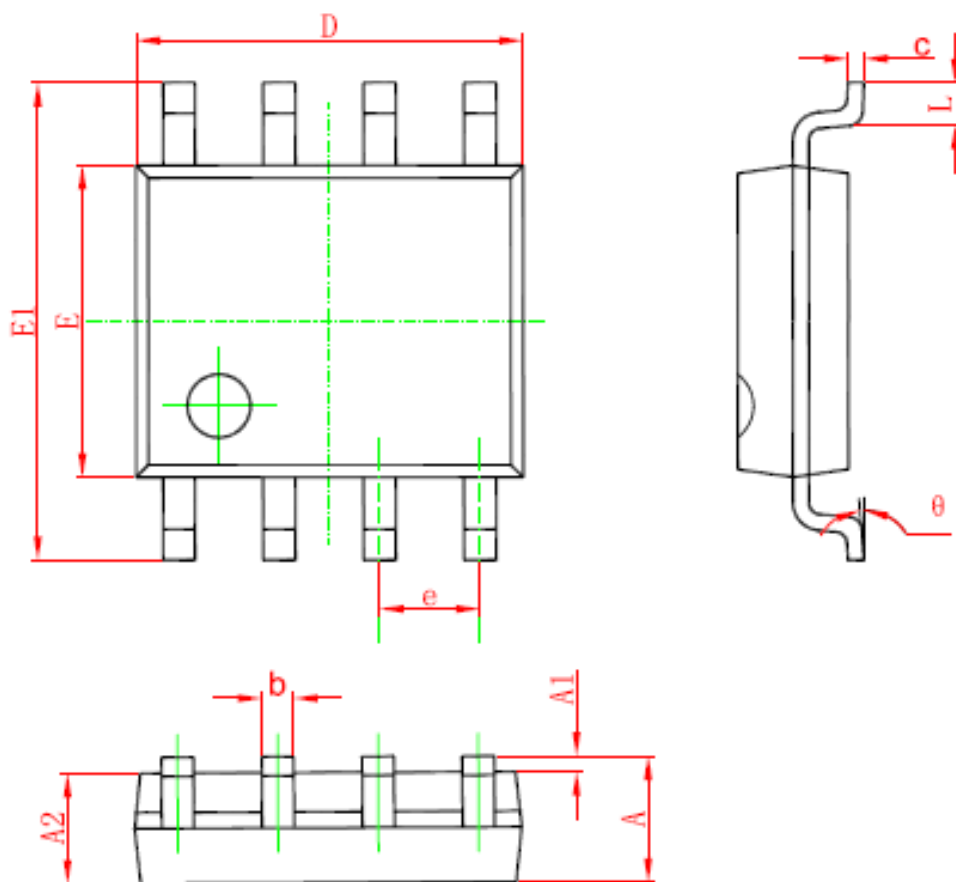


Figure8. Switching wave

■ SOP-8 Package information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270 (BSC)		0.050 (BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°



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