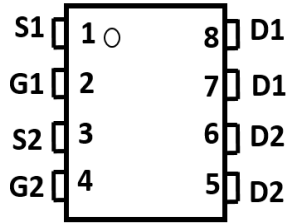
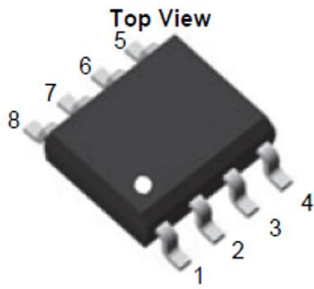
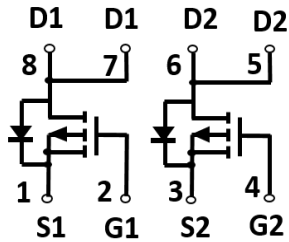


P-Channel Enhancement Mode Field Effect Transistor



SOP-8



Product Summary

- V_{DS} -30V
- I_D -5.1A
- $R_{DS(ON)}$ (at $V_{GS}=-10V$) <59 mohm
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) <75 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}	-30	V
Gate-source Voltage	V_{GS}	± 20	V
Drain Current	I_D	$T_A=25^\circ C$ @ Steady State	-5.1
		$T_A=70^\circ C$ @ Steady State	-4.1
Pulsed Drain Current ^A	I_{DM}	-2	A
Single Pulse Avalanche Energy	E_{AS}	20	mJ
Total Power Dissipation @ $T_A=25^\circ C$	P_D	2.5	W
Thermal Resistance Junction-to-Ambient @ Steady State	$R_{\theta JA}$	50	$^\circ C/W$
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
YJS4953A	F2	Q4953	2500	5000	40000	13" reel



YJS4953A

■ 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	-30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V, V _{GS} =0V, T _C =25°C			-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	-0.8	-1.5	-2.4	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = -10V, I _D =-4.0A		40	59	mΩ
		V _{GS} = -4.5V, I _D =-3.5A		53	75	
Diode Forward Voltage	V _{SD}	I _S =-5.1A, V _{GS} =0V		-0.8	-1.2	V
Maximum Body-Diode Continuous Current	I _S				-5.1	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V, f=1MHZ		580		pF
Output Capacitance	C _{oss}			98		
Reverse Transfer Capacitance	C _{rss}			74		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =-10V, V _{DS} =-15V, I _D =-5.1A		6.8		nC
Gate Source Charge	Q _{gs}			1.0		
Gate Drain Charge	Q _{gd}			1.4		
Turn-on Delay Time	t _{D(on)}	V _{GS} =-10V, V _{DS} =-15V, I _D =-1A, R _{GEN} =2.5Ω		14		ns
Turn-on Rise Time	t _r			61		
Turn-off Delay Time	t _{D(off)}			19		
Turn-off Fall Time	t _f			10		

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

■ Typical Performance Characteristics

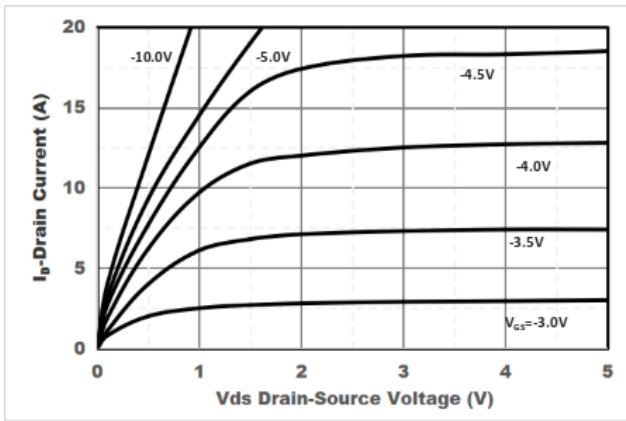


Figure1. Output Characteristics

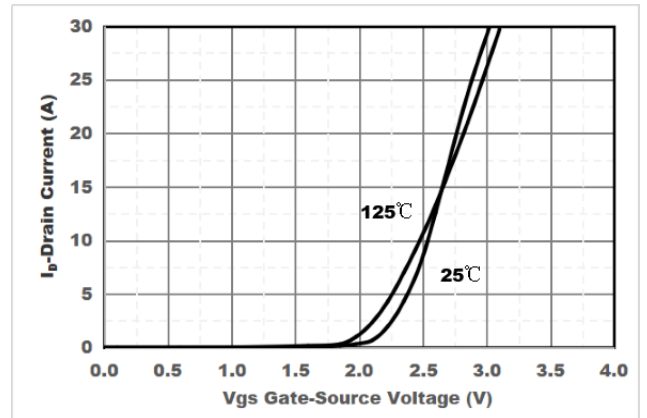


Figure2. Transfer Characteristics

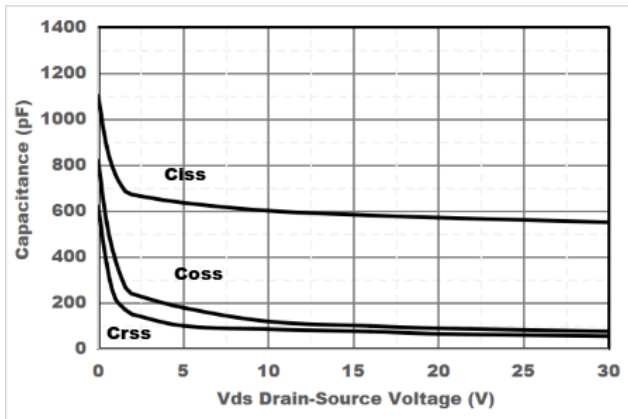


Figure3. Capacitance Characteristics

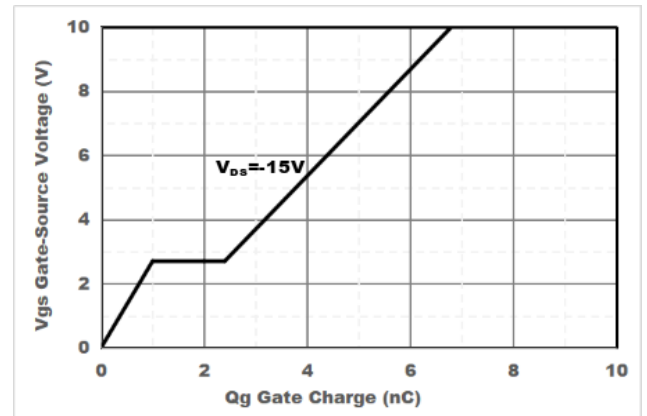


Figure4. Gate Charge

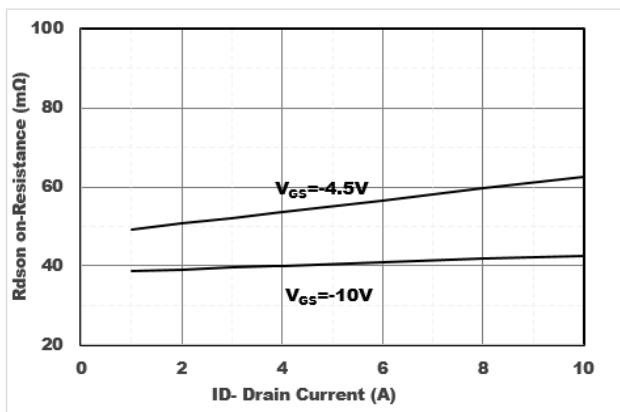


Figure5. Drain-Source on Resistance

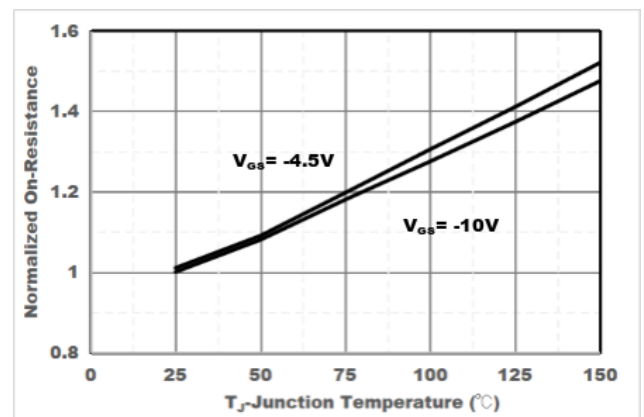


Figure6. Drain-Source on Resistance

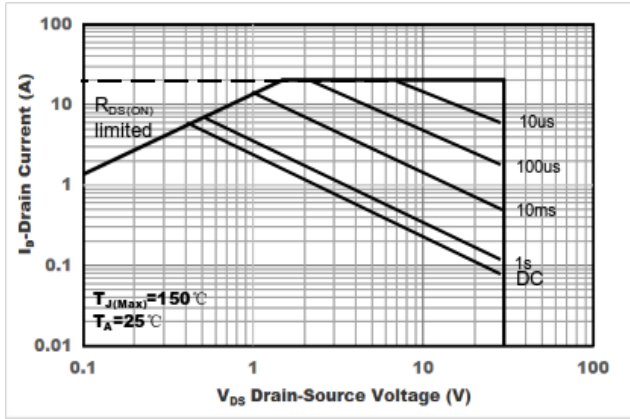


Figure7. Safe Operation Area

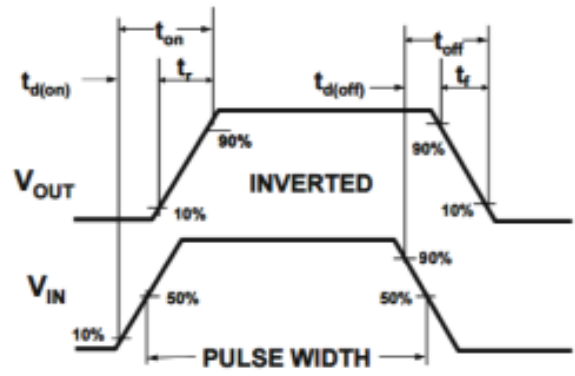
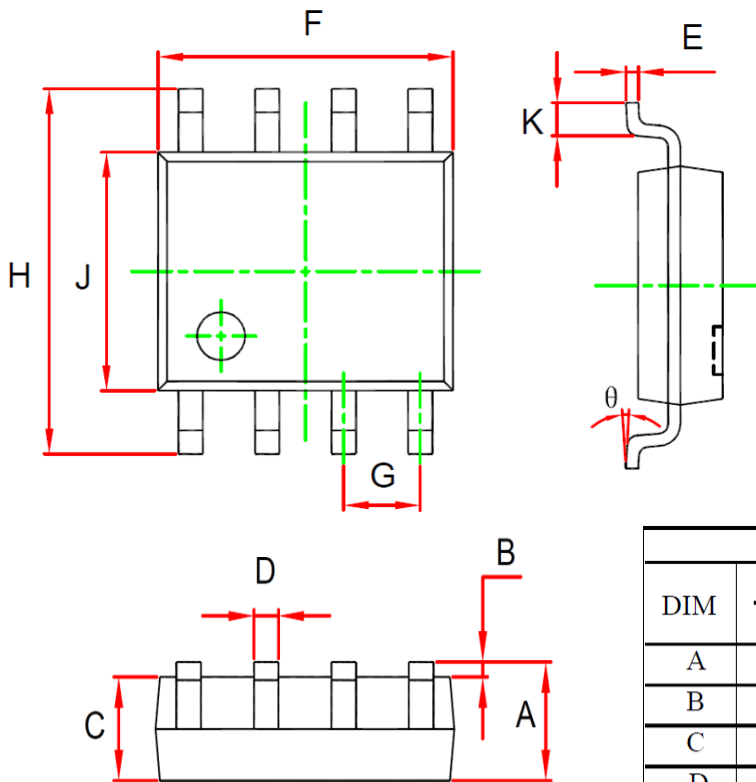


Figure8. Switching wave



YJS4953A

■ SOP-8 Package information



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.053	0.069	1.350	1.750	
B	0.004	0.010	0.100	0.250	
C	0.053	0.061	1.350	1.550	
D	0.013	0.020	0.330	0.510	
E	0.007	0.010	0.170	0.250	
F	0.189	0.197	4.800	5.000	
G	0.050 (BSC)		1.270 (BSC)		
H	0.228	0.244	5.800	6.200	
J	0.150	0.157	3.800	4.000	
K	0.016	0.050	0.400	1.270	
θ	0°	8°	0°	8°	



YJS4953A

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