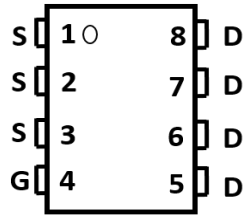
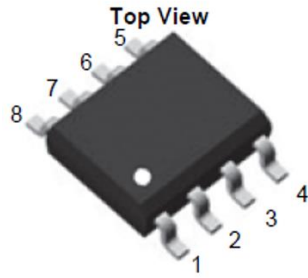
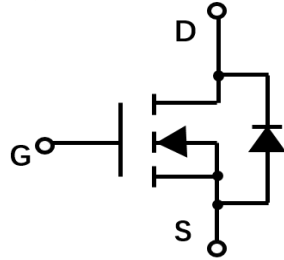


N-Channel Enhancement Mode Field Effect Transistor



SOP-8



Product Summary

- V_{DS} 60V
- I_D 12A
- $R_{DS(ON)}$ (at $V_{GS}=10V$) <9 mohm
- $R_{DS(ON)}$ (at $V_{GS}=4.5V$) <13 mohm

General Description

- Split Gate Trench MOSFET technology
- Excellent package for heat dissipation
- High density cell design for low $R_{DS(ON)}$

Applications

- DC-DC Converters
- Power management functions
- Industrial and Motor Drive application

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

Parameter	Symbol	Limit	Unit
Drain-source Voltage	V_{DS}	60	V
Gate-source Voltage	V_{GS}	± 20	V
Drain Current	I_D	$T_C=25^{\circ}C$	A
		$T_C=100^{\circ}C$	
Pulsed Drain Current ^A	I_{DM}	48	A
Total Power Dissipation	P_D	$T_C=25^{\circ}C$	W
		$T_C=100^{\circ}C$	
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	$t \leq 10\mu s$	$^{\circ}C/W$
		Steady-State	
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	24	$^{\circ}C/W$
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
YJS12G06A	F2	Q12N06	2500	5000	40000	13" reel



YJS12G06A

■ 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		60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V	T _J =25℃			1	μA
			T _J =55℃			5	
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		1.2	1.7	2.2	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = 10V, I _D =12A			8.2	9	mΩ
		V _{GS} = 4.5V, I _D =10A			10.5	13	
Diode Forward Voltage	V _{SD}	I _S =12A, V _{GS} =0V			0.8	1.2	V
Maximum Body-Diode Continuous Current	I _S					12	A
Dynamic Parameters							
Input Capacitance	C _{iss}	V _{DS} =30V, V _{GS} =0V, f=1MHZ			1990		pF
Output Capacitance	C _{oss}				470		
Reverse Transfer Capacitance	C _{rss}				14		
Switching Parameters							
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =30V, I _D =12A			31		nC
Gate-Source Charge	Q _{gs}				6		
Gate-Drain Charge	Q _{gd}				5		
Reverse Recovery Chrage	Q _{rr}	I _F =20A, di/dt=500A/us			17		ns
Reverse Recovery Time	t _{rr}				58		
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V, V _{DD} =30V, R _L =1Ω R _{GEN} =3Ω			10		
Turn-on Rise Time	t _r				5		
Turn-off Delay Time	t _{D(off)}				30		
Turn-off fall Time	t _f				8		

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



■ Typical Performance Characteristics

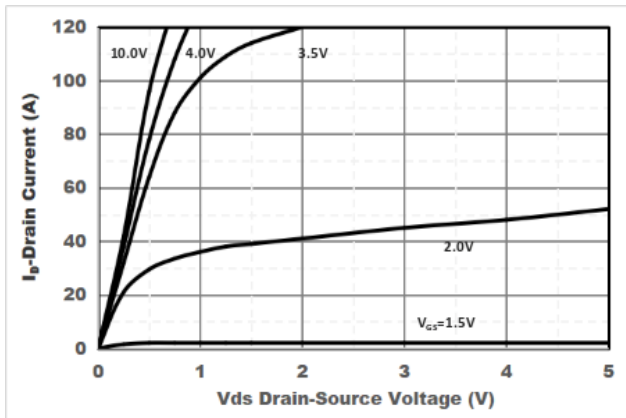


Figure1. Output Characteristics

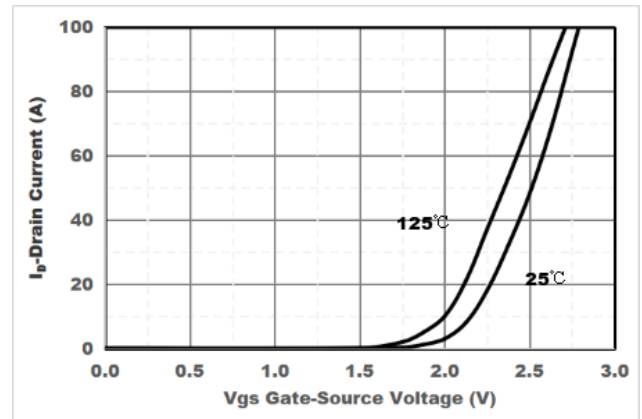


Figure2. Transfer Characteristics

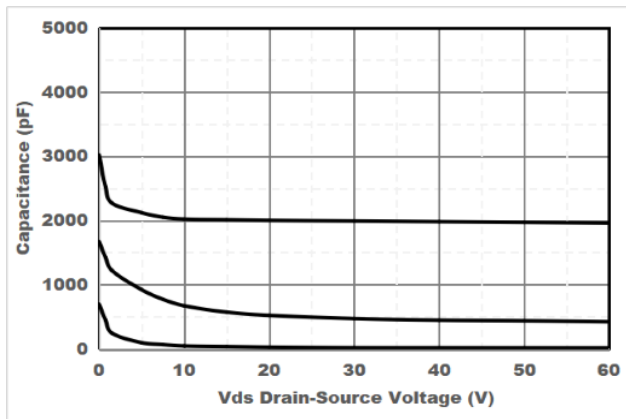


Figure3. Capacitance Characteristics

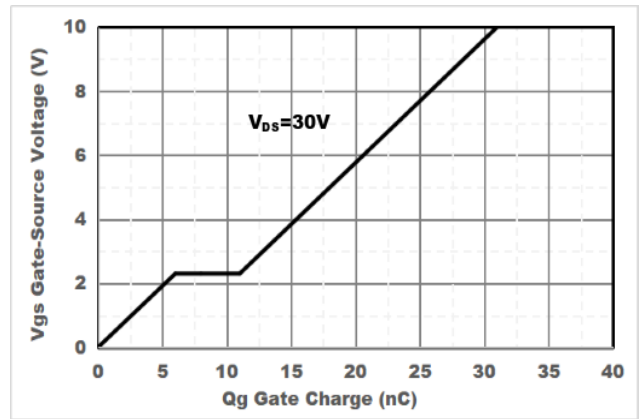


Figure4. Gate Charge

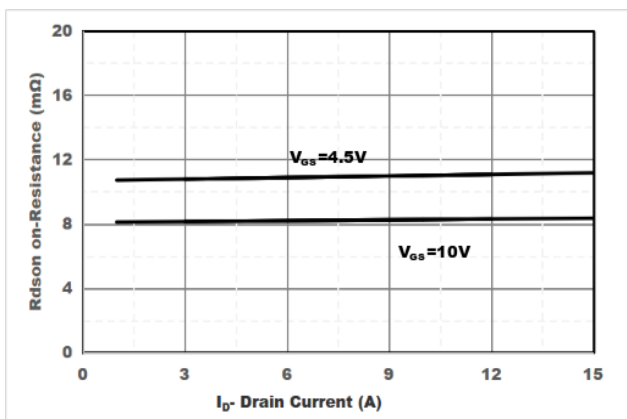


Figure5. Drain-Source on Resistance

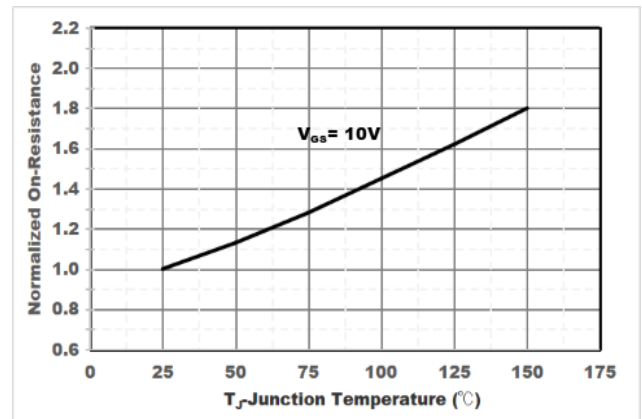


Figure6. Drain-Source on Resistance

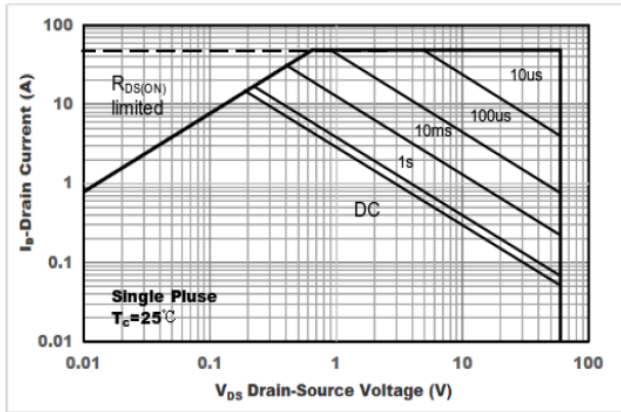


Figure7. Safe Operation Area

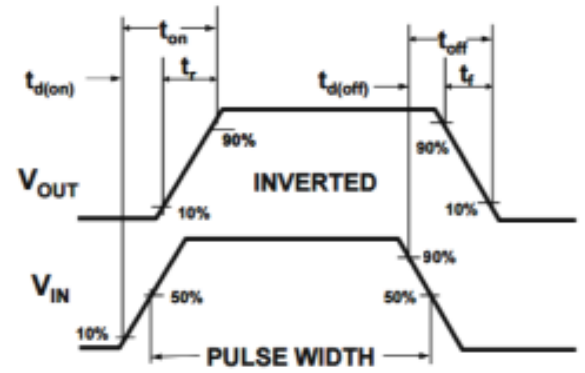
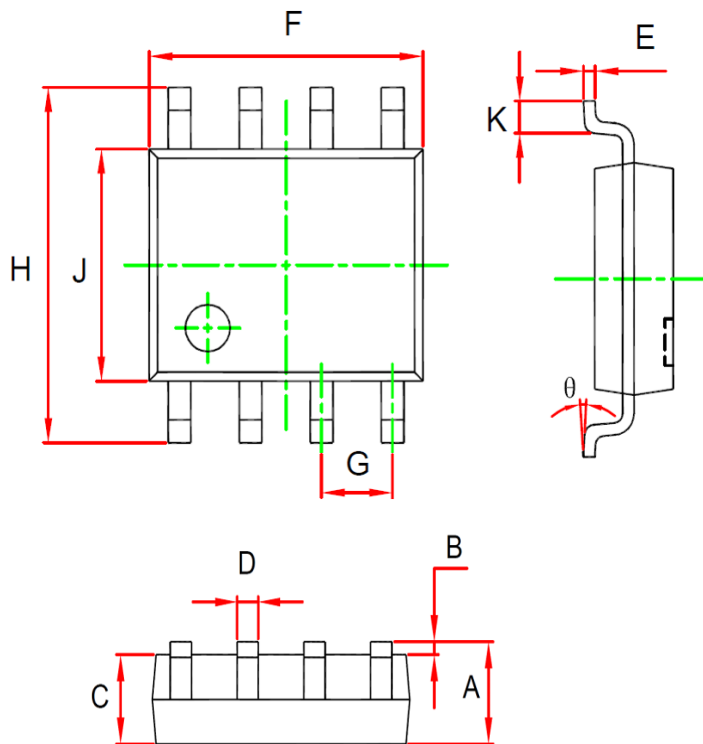


Figure8. Switching wave



■ 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°	



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