



YJQ30P06AJ

P-Channel Enhancement Mode Field Effect Transistor

Product Summary

V_{DS}	-60 V
I_D	-30 A
$R_{DS(ON)}$ (at $V_{GS}=-10V$)	24m
$R_{DS(ON)}$ (at $V_{GS}=-4.5V$)	33m
100% EAS Tested	

General Description

Trench Power LV MOSFET technology
Low $R_{DS(on)}$ & FOM
Extremely low switching loss
Excellent stability and uniformity

-0 Flammability Rating

alogen Free

Applications

Absolute Maximum Ratings ($T_A=25$ unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	-60	V
Gate-source Voltage		V_{GS}	± 20	V
Drain Current	$T_A=25^{\circ}C$	I_D	-6	A
	$T_A=100^{\circ}C$		-3.5	
	$T_C=25^{\circ}C$		-30	
	$T_C=100^{\circ}C$		-19	
Pulsed Drain Current ^A		I_{DM}	-120	A
Avalanche energy ^B		EAS	100	mJ
Total Power Dissipation ^C	$T_A=25^{\circ}C$	P_D	2	W
	$T_A=100^{\circ}C$		0.8	
	$T_C=25^{\circ}C$		69	



YJQ30P06AJ

Electrical Characteristics ($T_J=25$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-$	-60	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-60V, V_{GS}=0V$	-	-	-1	
		$V_{DS}=-60V, V_{GS}=0V, T_J=150^\circ C$	-	-	-100	
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-$	-1.0	-2.0	-3.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-20A$	-	18	24	
		$V_{GS}=-4.5V, I_D=-10A$	-	24	33	
Diode Forward Voltage	V_{SD}	$I_S=-20A, V_{GS}=0V$	-	-0.9	-1.2	V
Gate resistance	R_G	$f=1MHz$	-	5.0	-	
Maximum Body-Diode Continuous Current	I_S		-	-	-30	A
Dynamic Parameters						
Input Capacitance	C_{iss}	$V_{DS}=-30V, V_{GS}=0V, f=1MHz$	-	4300	-	pF
Output Capacitance	C_{oss}		-	170	-	
Reverse Transfer Capacitance	C_{rss}		-	150	-	
Switching Parameters						
Total Gate Charge	Q_g	$V_{GS}=-10V, V_{DS}=-30V, I_D=-15A$	-	61	-	nC
Gate-Source Charge	Q_{gs}		-	17	-	
Gate-Drain Charge	Q_{gd}		-	7	-	
Reverse Recovery Charge	Q_{rr}	$I_F=-15A, di/dt=100A/us$	-	38	-	nC
Reverse Recovery Time	t_{rr}		-	29	-	ns



Typical Electrical and Thermal Characteristics Diagrams

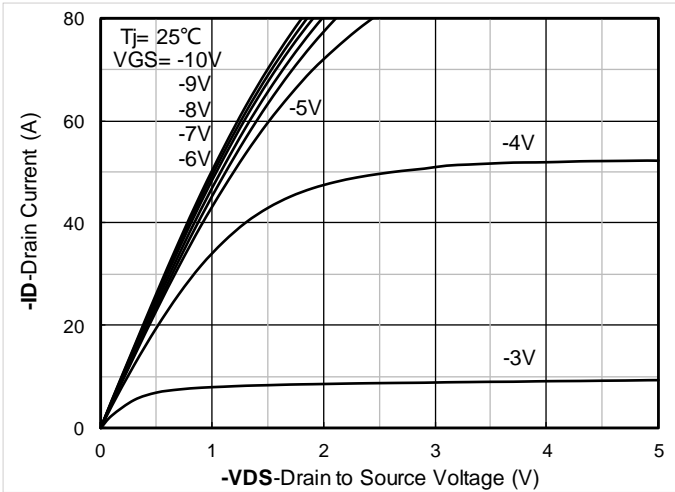


Figure 1. Output Characteristics

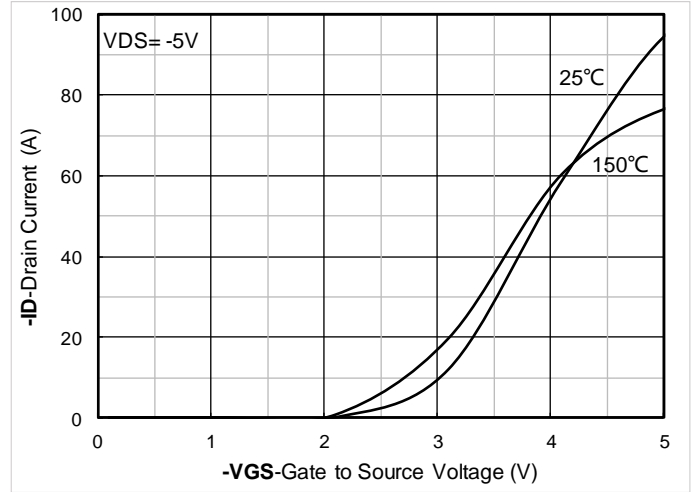


Figure 2. Transfer Characteristics

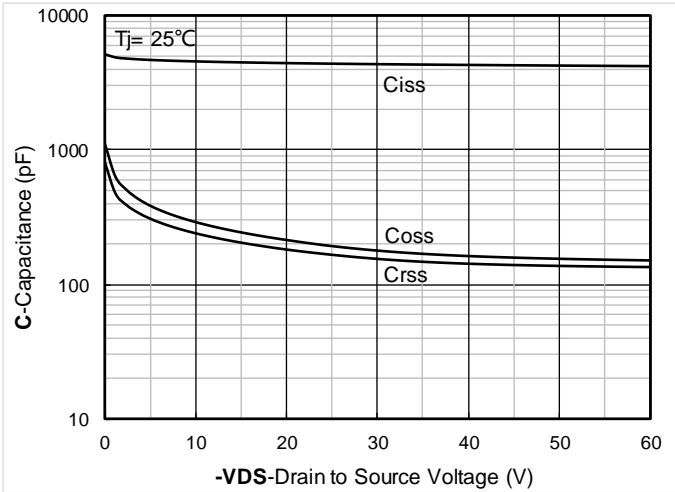


Figure 3. Capacitance Characteristics

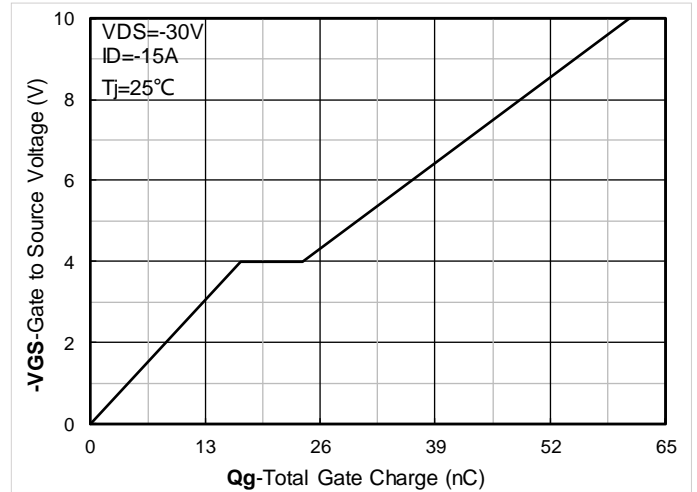


Figure 4. Gate Charge

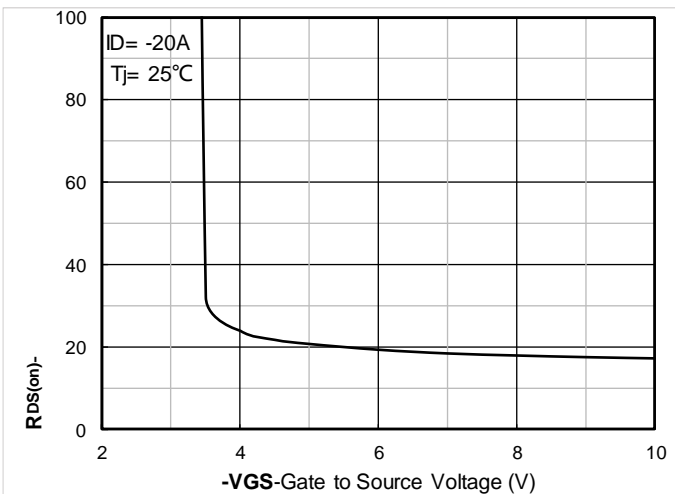


Figure 5. On-Resistance vs Gate to Source Voltage

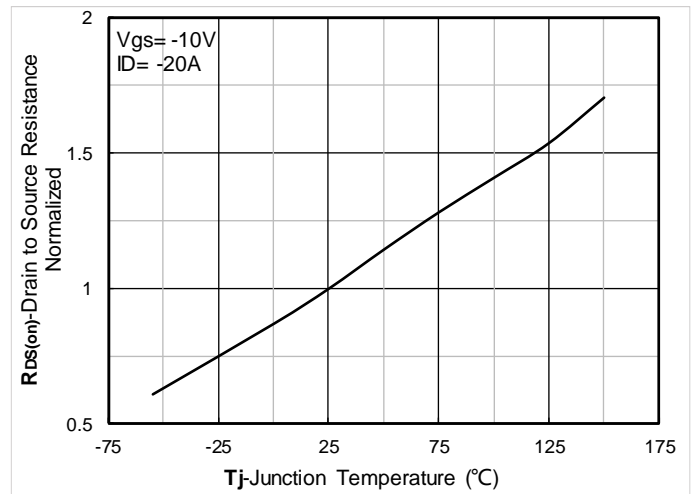


Figure 6. Normalized On-Resistance



YJQ30P06AJ

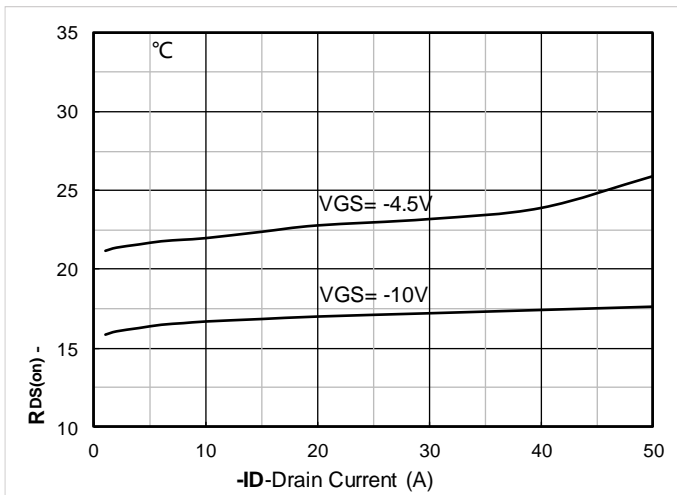


Figure 7. RDS(on) VS Drain Current

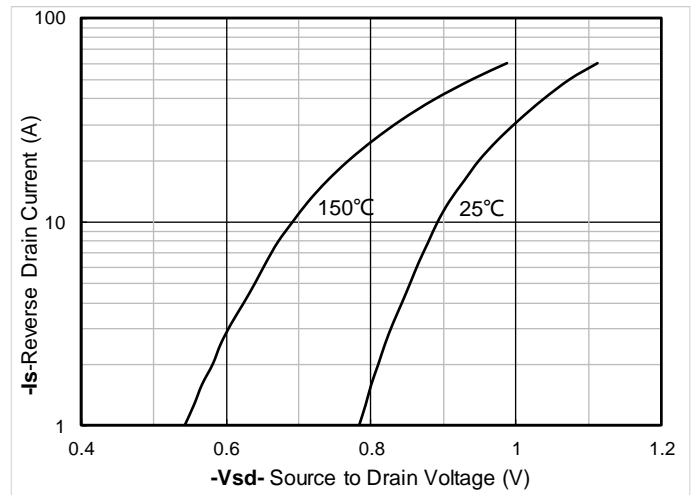


Figure 8. Forward characteristics of reverse diode

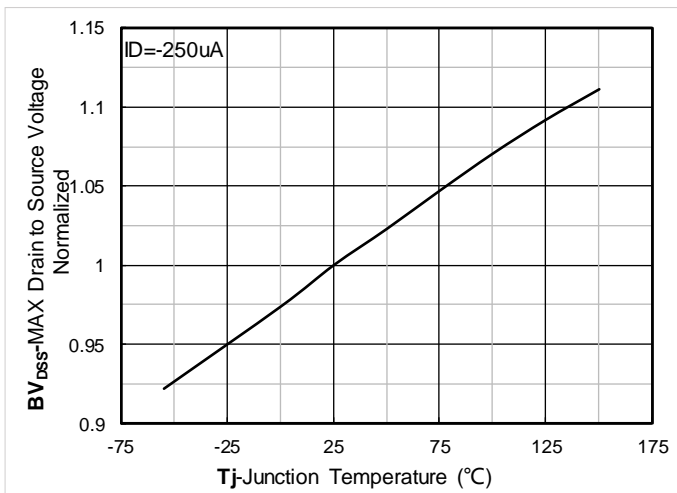


Figure 9. Normalized breakdown voltage

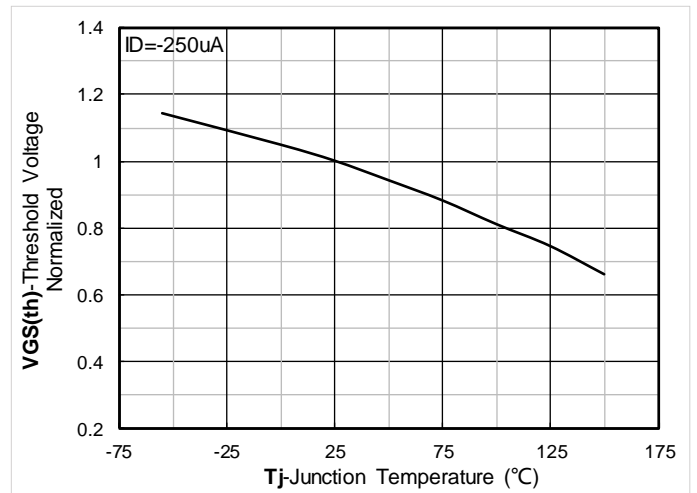


Figure 10. Normalized Threshold voltage

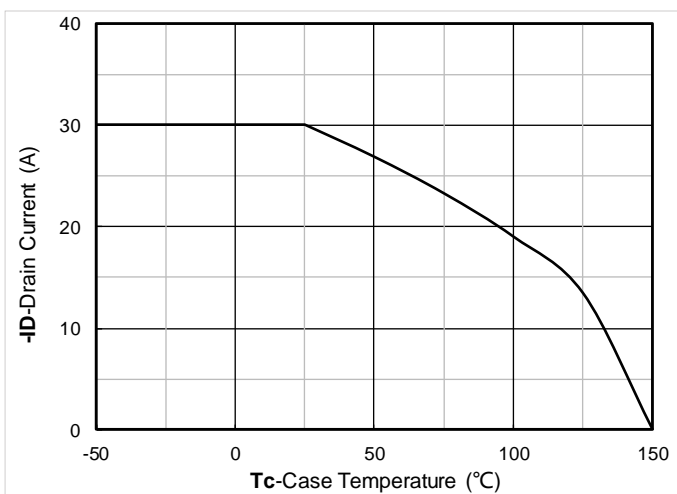


Figure 11. Current dissipation

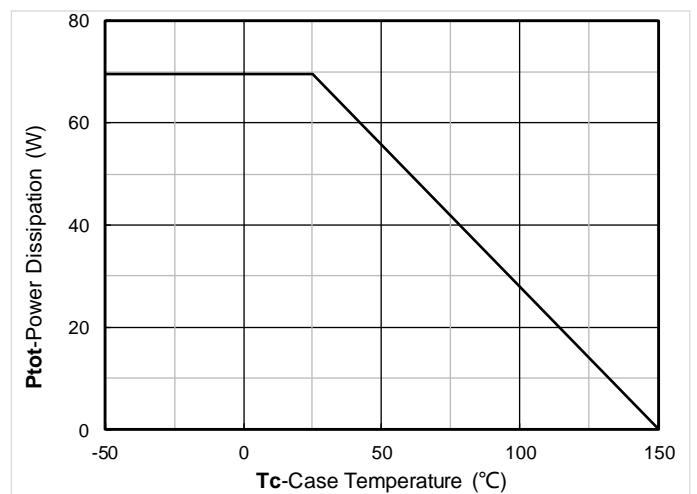


Figure 12. Power dissipation

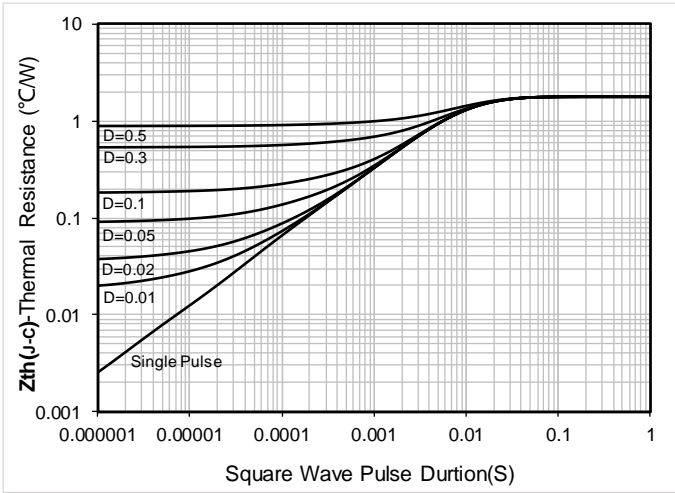


Figure 13. Maximum Transient Thermal Impedance

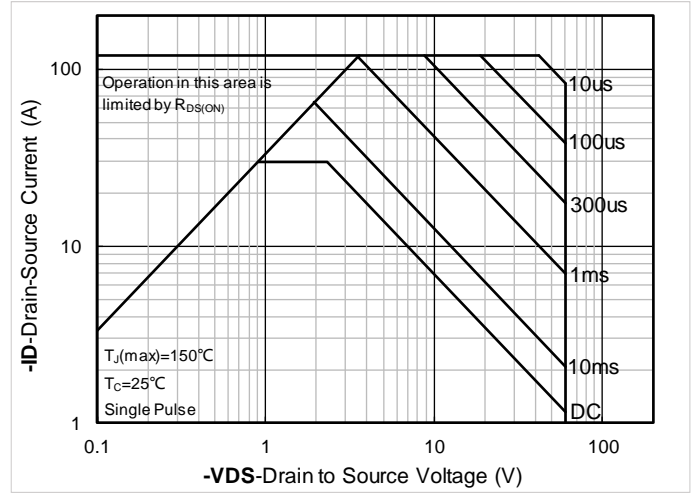
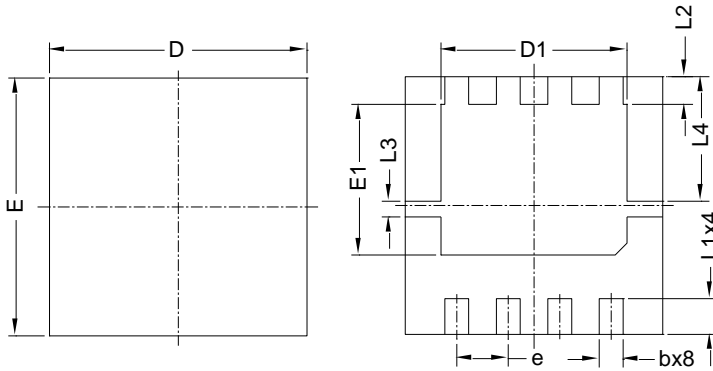


Figure 14. Safe Operation Area



YJQ30P06AJ

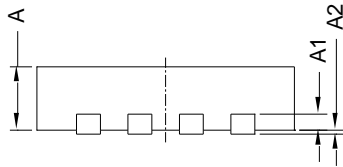
DFN3333-8L Package information



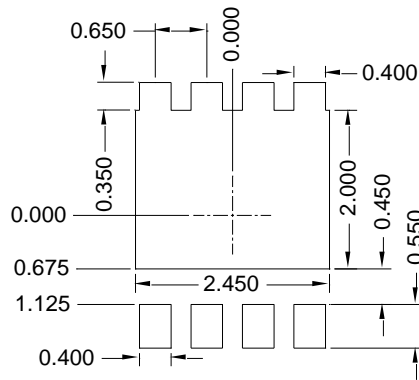
Top View

Bottom View

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
D	3.15	3.25	3.35
E	3.15	3.25	3.35
A	0.70	0.80	0.90
A1	0.20 BSC		
A2			0.10
D1	2.20	2.35	2.50
E1	1.80	1.90	2.00
L1	0.35	0.45	0.55
L2	0.35 BSC		
L3	0.20 BSC		
L4	1.57 BSC		
b	0.20	0.30	0.40
e	0.65 BSC		



Side View



Suggested Solder Pad Layout
Top View

Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.10 mm.
3. The pad layout is for reference purposes only.



YJQ30P06AJ

Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website <http://www.21yangjie.com> , or consult your nearest Ya