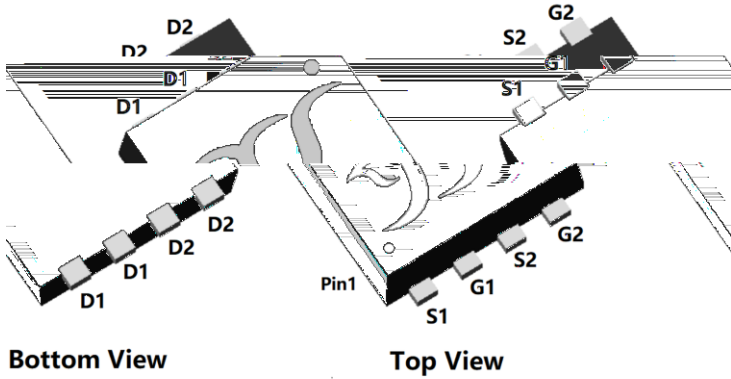
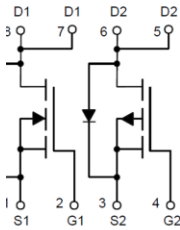


N-Channel and P-Channel Complementary MOSFET



Bottom View

Top View



PDFN3030-8L

Product Summary

NMOS	V_{DS}	30V
	I_D	6A
	$R_{DS(ON)}$ (at $V_{GS}=10V$)	26m Ω
	$R_{DS(ON)}$ (at $V_{GS}=4.5V$)	40m Ω

PMOS

	V_{DS}	-30V
	I_D	-4A
	$R_{DS(ON)}$ (at $V_{GS}=-10V$)	43m Ω
	$R_{DS(ON)}$ (at $V_{GS}=-4.5V$)	70m Ω

General Description

Enhancement-mode Power MOSFET technology
6 TV V RT R V U R

Applications

Power Switching
9RU T WR U V V T T T
F V SV V

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

Parameter		Symbol	NMOS	PMOS	Unit
Drain-source Voltage		V_{DS}	30	-30	V
Gate-source Voltage		V_{GS}	± 20	± 20	V
Drain Current	$T_A=25$	I_D	6	-4	A
	$T_A=100$		3.8	-2.5	
Pulsed Drain Current ^A		I_{DM}	35	-30	A
Total Power Dissipation ^B	$T_A=25$	P_D	1.25	1.25	W
	$T_A=100$		0.5	0.5	

Thermal resistance

Parameter	Symbol	NMOS		PMOS		Units
		Typ	Max	Typ	Max	
Thermal Resistance Junction-to-Ambient ^C Steady-State	$R_{\theta J2}$	80	100	80	100	$^{\circ}\text{C}/\text{W}$

Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJU4606A	F1	Q4606A	3000	30000	120000	(reel



YJU4606A

NMOS 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 =250 2	30	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V	-	-	1	2
		V _{DS} =30V, V _{GS} =0V, T _J =150	-	-	100	
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 =250 2	1	1.5	2.2	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =6A	-	20	26	m
		V _{GS} =4.5V, I _D =4A	-	30	40	
Diode Forward Voltage	V _{SD}	I _S =6A, V _{GS} =0V	-	-	1.2	V
Gate resistance	R _G	f=1MHz	-	2.5	-	
Maximum Body-Diode Continuous Current	I _S		-	-	6	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1MHz	-	380	-	pF
Output Capacitance	C _{oss}		-	80	-	
Reverse Transfer Capacitance	C _{rss}		-	60	-	
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =15V, I _D =6A	-	9	-	nC
Gate-Source Charge	Q _{gs}		-	2	-	
Gate-Drain Charge	Q _{gd}		-	2	-	
Reverse Recovery Charge	Q _{rr}	I _F =6A, di/dt=100A/us	-	1	-	nC
Reverse Recovery Time	t _{rr}		-	7	-	ns
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V, V _{DD} =15V, I _D =6A R _{GEN} =3	-	6	-	ns
Turn-on Rise Time	t _r		-	41	-	
Turn-off Delay Time	t _{D(off)}		-	11	-	
Turn-off fall Time	t _f		-	34	-	

PMOS 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 =-250 2	-30	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V, V _{GS} =0V	-	-	-1	2
		V _{DS} =-30V, V _{GS} =0V, T _J =150	-	-	-100	
Gate-Body Leakage Current	I _{GSS}	V _{GS} = 20V, V _{DS} =0V	-	-	100	nA



YJU4606A

Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250 \mu A$	-1	-1.5	-2.4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$					



■ NMOS Typical Electrical and Thermal Characteristics Diagrams

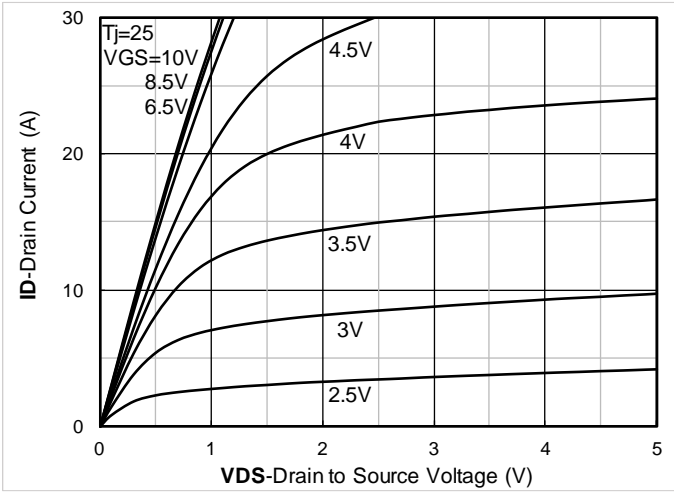


Figure 1. Output Characteristics

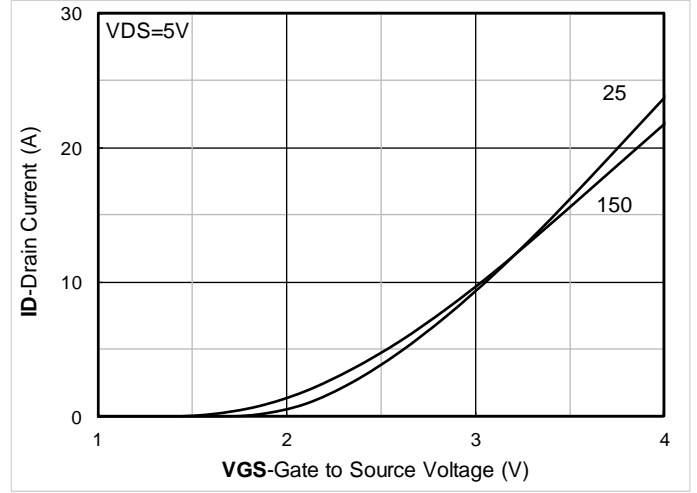


Figure 2. Transfer Characteristics

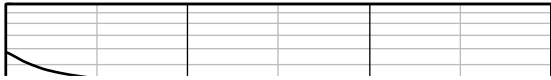


Figure 3. Capacitance Characteristics

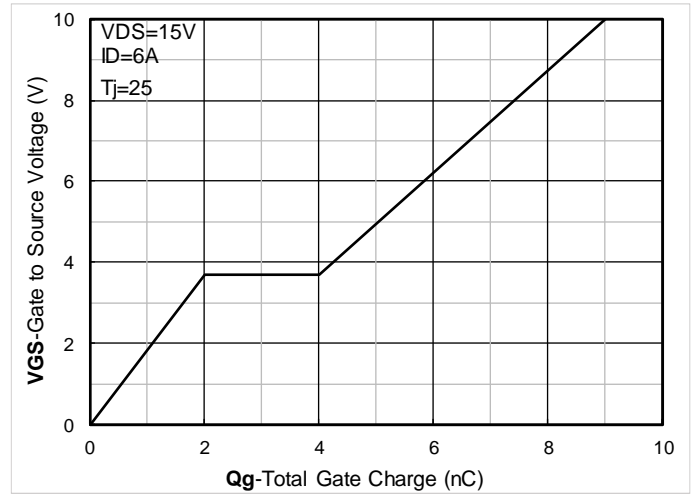


Figure 4. Gate Charge

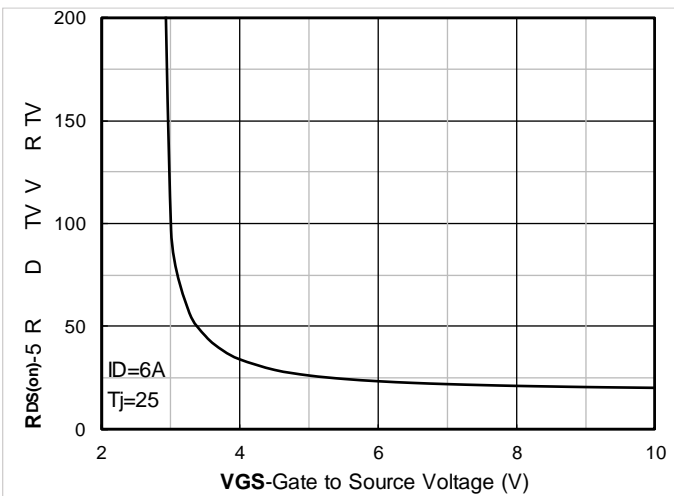


Figure 5. On-Resistance vs Gate to Source Voltage

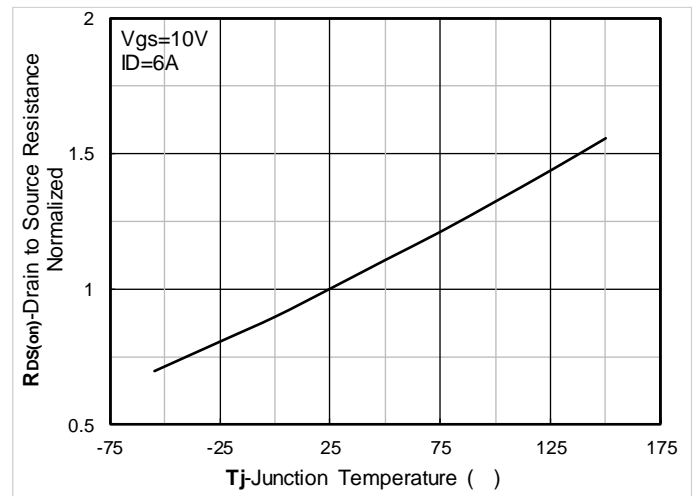


Figure 6. Normalized On-Resistan

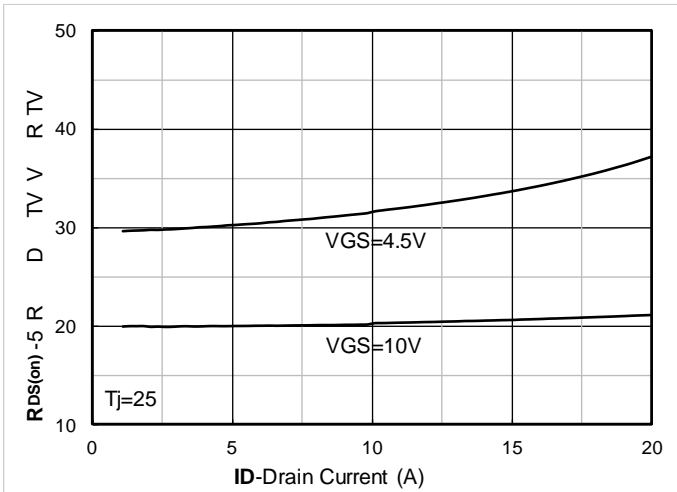


Figure 7. RDS(on) VS Drain Current

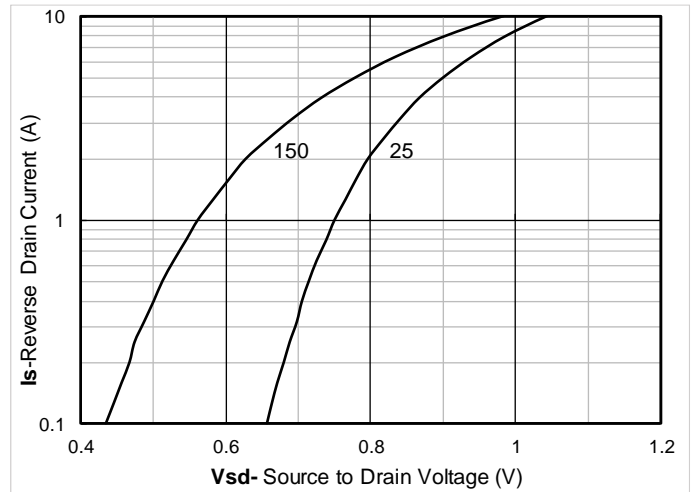


Figure 8. Forward characteristics of reverse diode

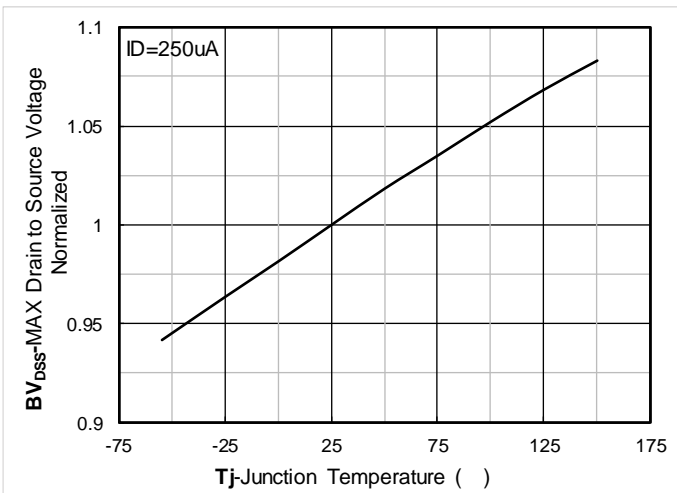


Figure 9. Normalized breakdown voltage

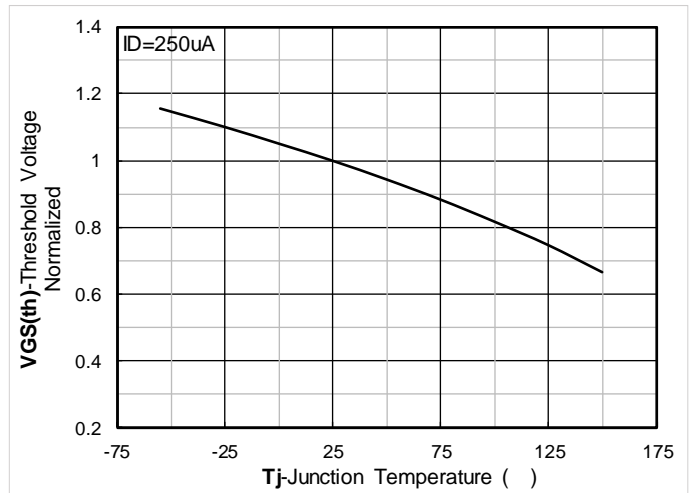


Figure 10. Normalized Threshold voltage

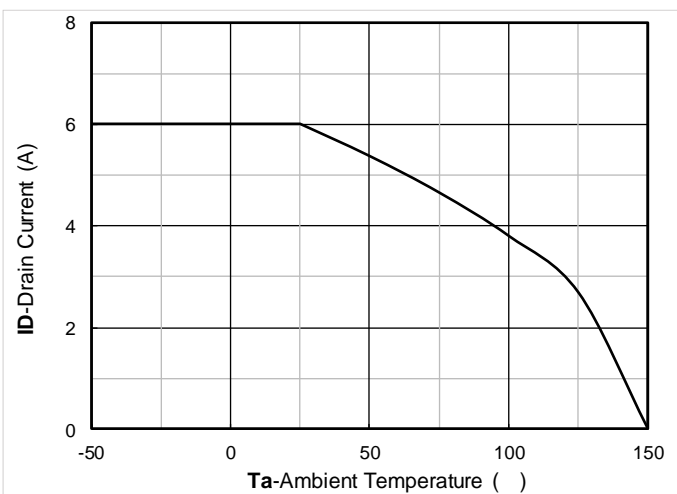


Figure 11. Current dissipation

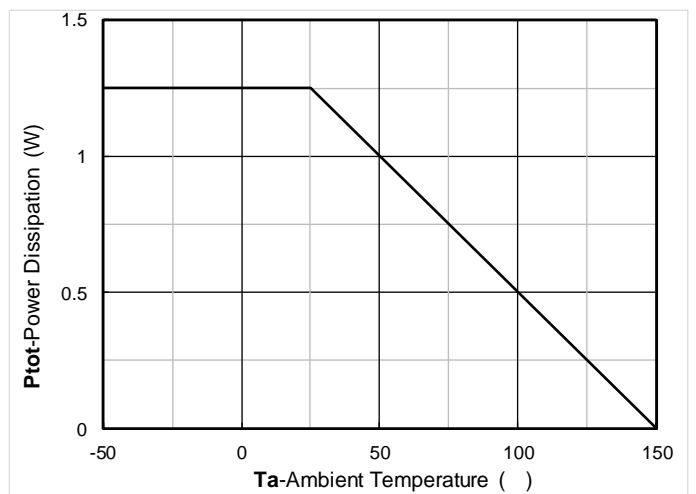


Figure 12. Power dissipation

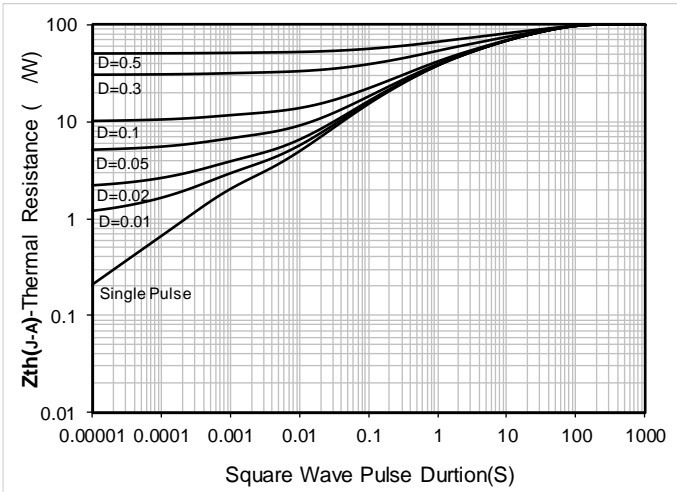


Figure 13. Maximum Transient Thermal Impedance

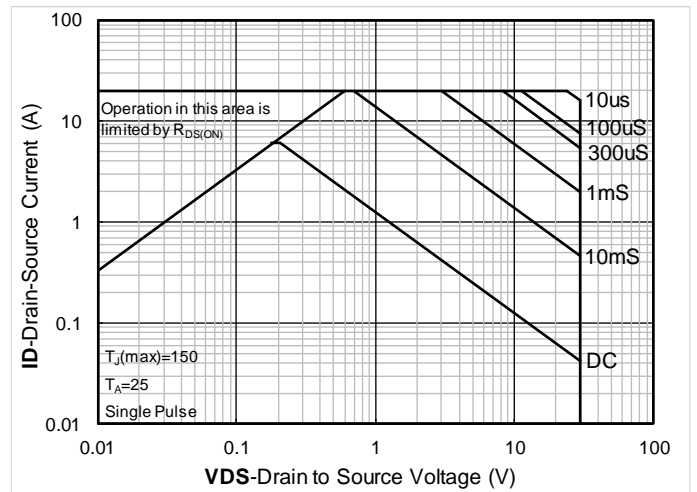


Figure 14. Safe Operation Area

■ PMOS Typical Electrical and Thermal Characteristics Diagrams

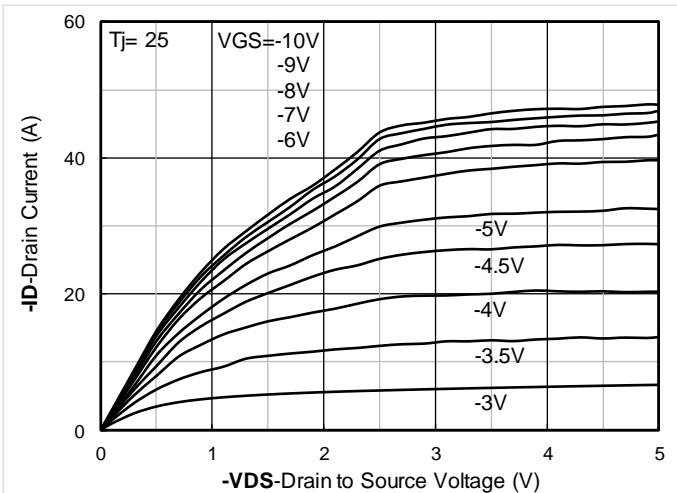


Figure 1. Output Characteristics

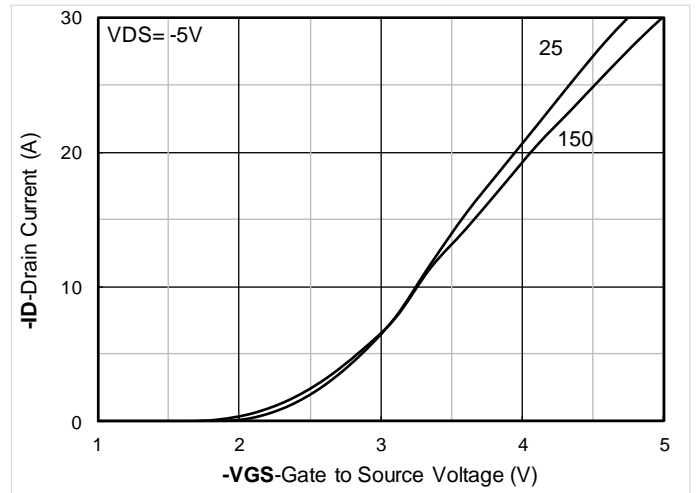


Figure 2. Transfer Characteristics

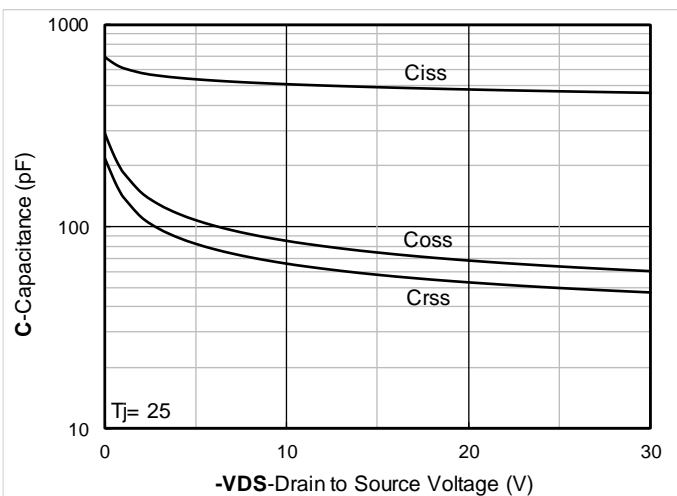


Figure 3. Capacitance Characteristics

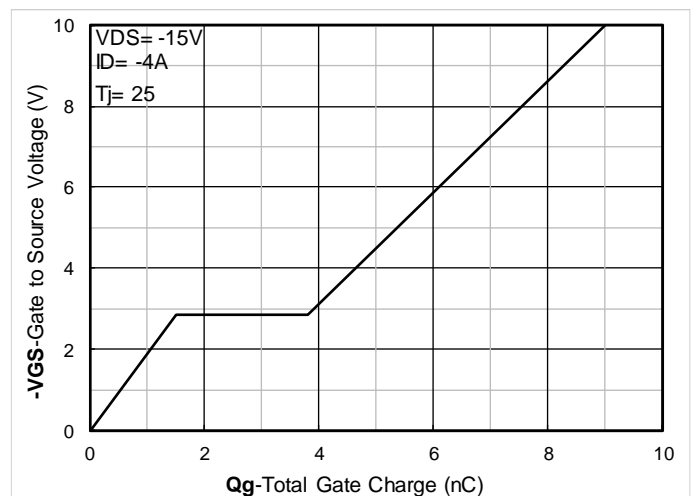


Figure 4. Gate Charge

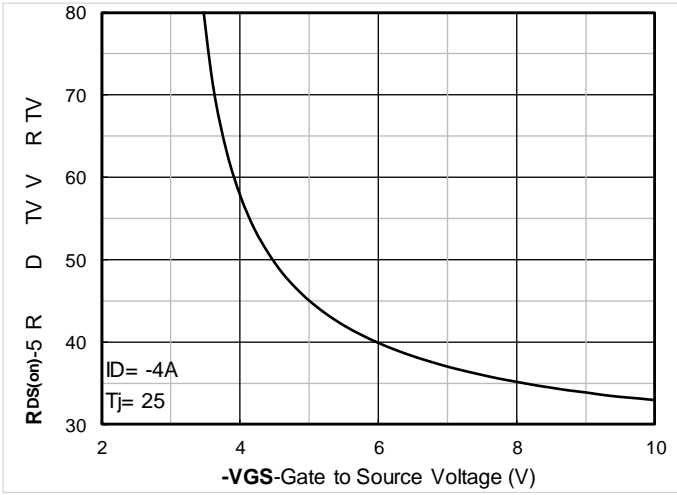


Figure 5. On-Resistance vs Gate to Source Voltage

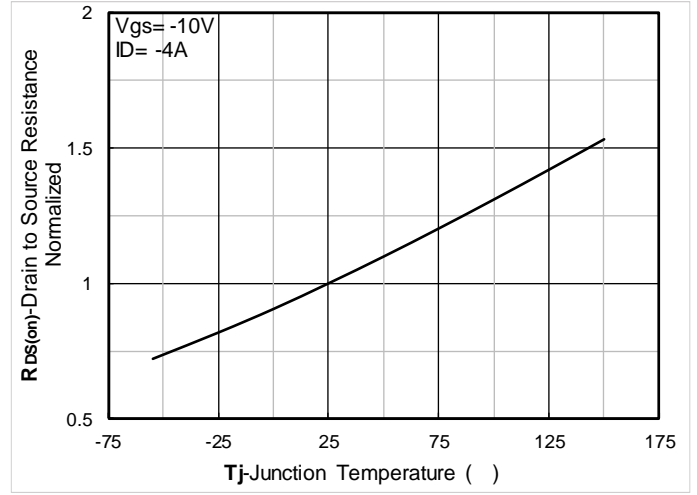


Figure 6. Normalized On-Resistance

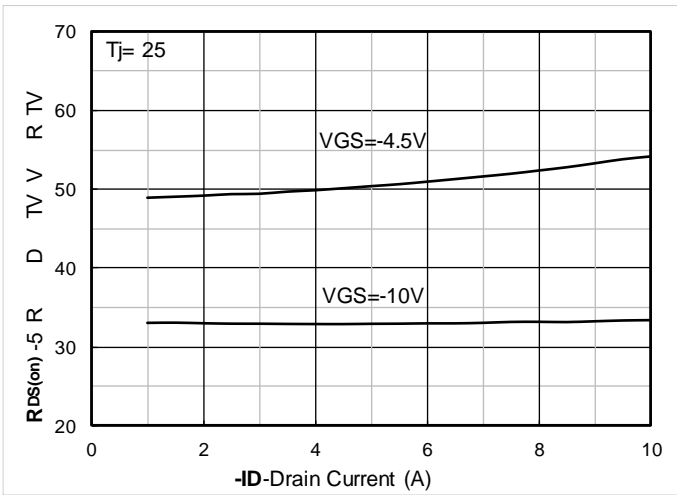


Figure 7. RDS(on) VS Drain Current

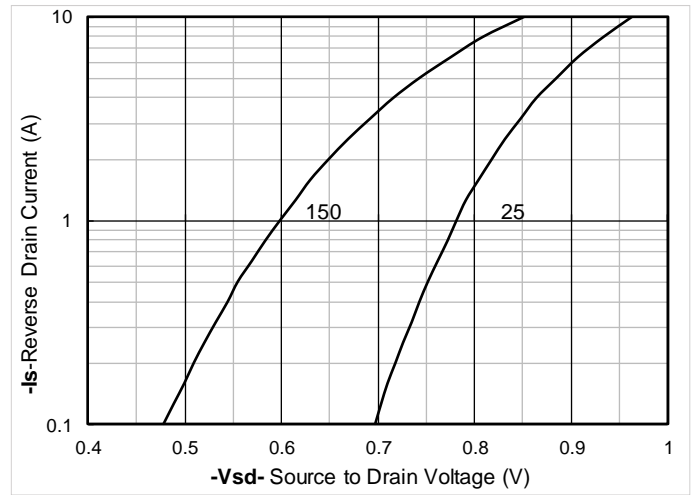


Figure 8. Forward characteristics of reverse diode

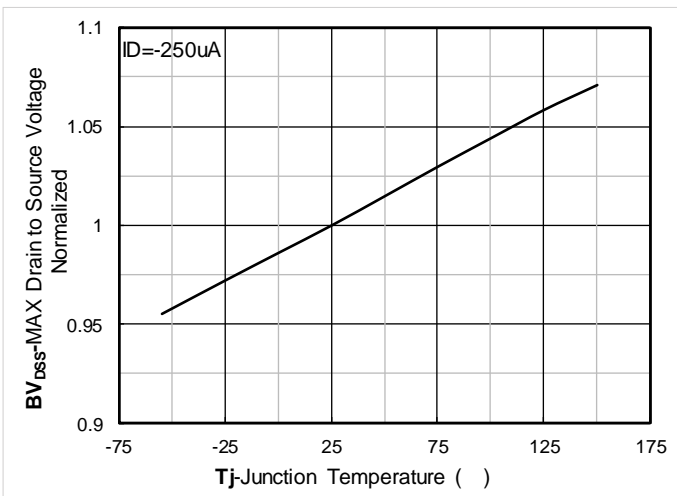


Figure 9. Normalized breakdown voltage

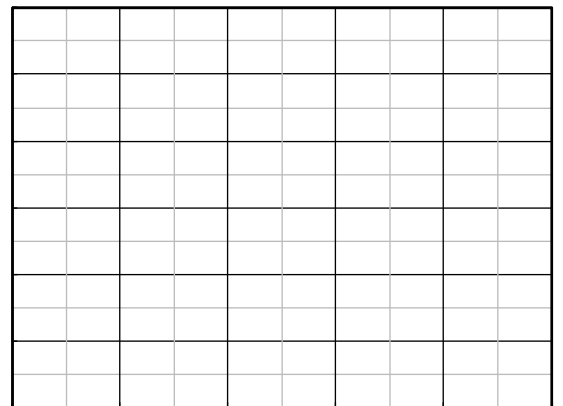


Figure 10. Normalized Threshold voltage

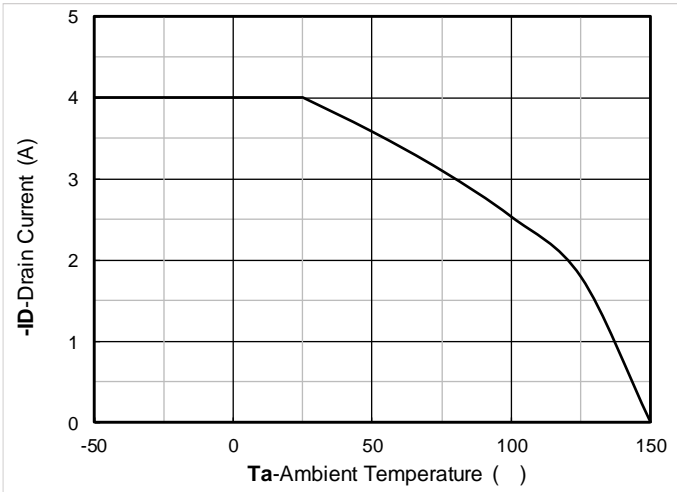


Figure 11. Current dissipation

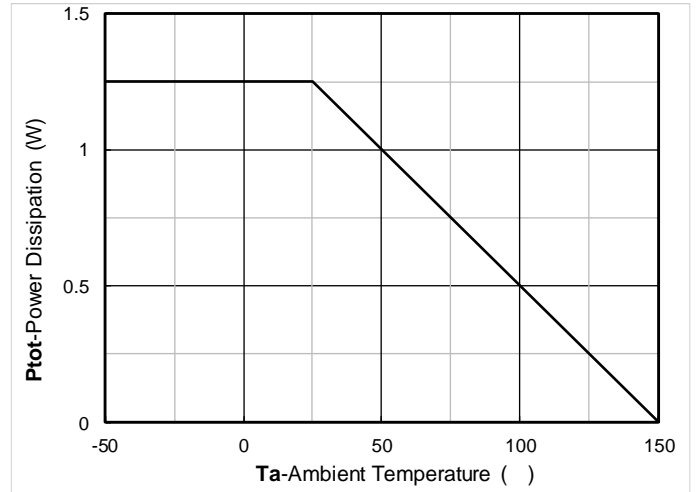


Figure 12. Power dissipation

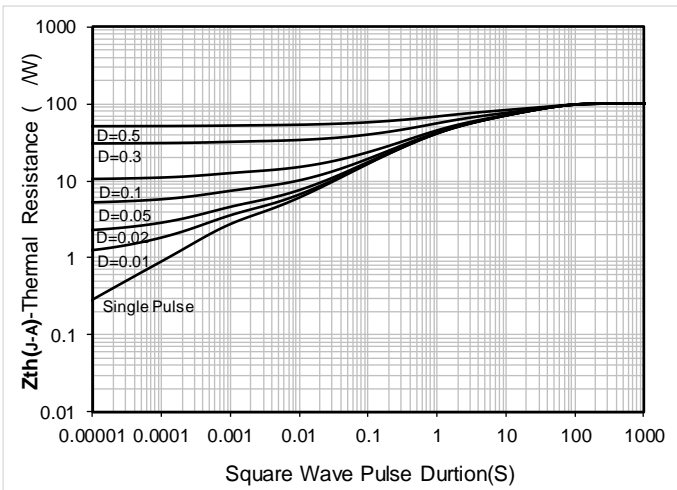


Figure 13. Maximum Transient Thermal Impedance

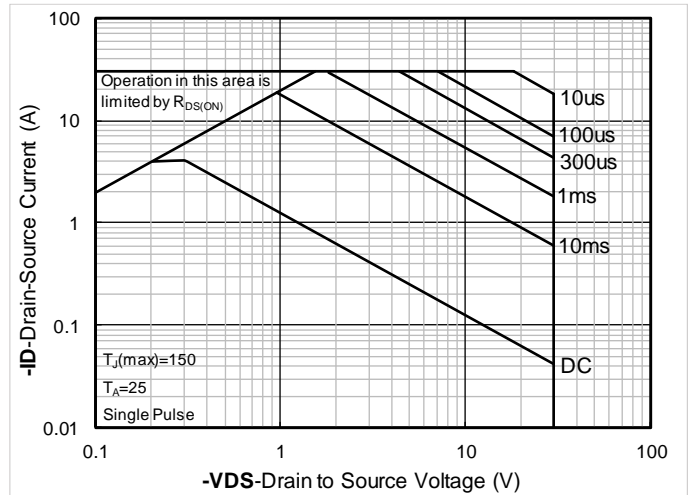
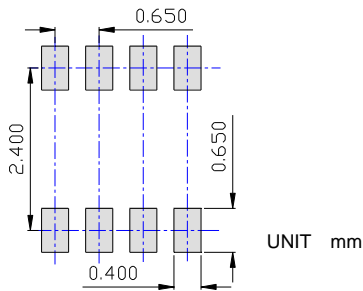
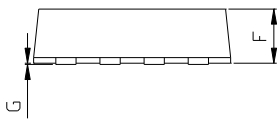
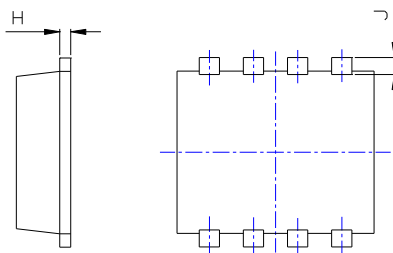
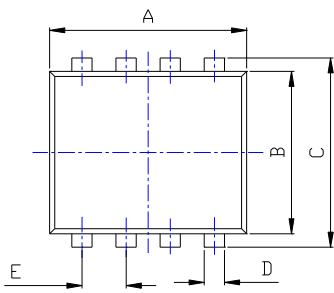


Figure 14. Safe Operation Area



YJU4606A

PDFN3030-8L Package information



DIMENSIONS				
SYMBOL	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.108	0.120	2.750	3.050
B	0.089	0.100	2.250	2.550
C	0.104	0.116	2.650	2.950
D	0.008	0.016	0.200	0.400
E	0.026TYP		0.650TYP	
F	0.028	0.035	0.700	0.900
G	0.000	0.004	0.000	0.100
H	0.004	0.012	0.100	0.300
J	0.007	0.015	0.190	0.390

NOTE:

- 1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
- 2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
- 3.THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.



Dis

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