P-Channel Enhancement Mode Field Effect Transistor

Product Summary

V_{DS}	-60 V
I_D	-80 A
$R_{DS(ON)}$(at V_{GS}=-10V)	8.5m

100% EAS Tested

100% V_{DS} Tested

General Description

Split gate trench MOSFET technology

Low $R_{DS(on)}$ & FOM

Excellent stability and uniformity

Moisture Sensitivity Level 1

Epoxy Meets UL 94 V-0 Flammability Rating

Halogen Free

means AEC-Q101 qualified

Applications

and 24V Automotive systems

Absolute Maximum Ratings (T_A=25 unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-source Voltage	V_{DS}	[redacted]	

Ordering Information (Example)

PREFERED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJG80GP06BQ	F1	YJG80GP06B	5000	10000	100000	

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	
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=-	-2	-2.7	-4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-10V, I_D=-20A	-	6.1	8.5	
Diode Forward Voltage	V_{SD}	I_S=-20A, V_{GS}=0V	-	-0.9	-1.3	V
Gate resistance	R_G	f=1MHz, Open drain	-	10	-	
Maximum Body-Diode Continuous Current	I_S		-	-	-80	A
Dynamic Parameters						
Input Capacitance	C_{iss}	V_{DS}=-25V, V_{GS}=0V, f=1MHz	-	5500	-	pF
Output Capacitance	C_{oss}		-	1555	-	
Reverse Transfer Capacitance	C_{rss}		-	220	-	
Switching Parameters						
Total Gate Charge	Q_g	V_{GS}=-10V, V_{DS}=-30V, I_D=-20A	-	80.7	-	nC
Gate-Source Charge	Q_{gs}		-	19	-	
Gate-Drain Charge	Q_{gd}		-	18.3	-	
Reverse Recovery Charge	Q_{rr}	I_F=-20A, di/dt=100A/us	-	84	-	nC
Reverse Recovery Time	t_{rr}		-	57.5	-	ns
Turn-on Delay Time	$t_{D(on)}$	V_{GS}=-10V, V_{DD}=-30V, R_{GEN}=1.6 ID=-20A	-	13.2	-	ns
Turn-on Rise Time	t_r		-	27.7	-	
Turn-off Delay Time	$t_{D(off)}$		-	137.8	-	
Turn-off fall Time	t_f		-	59.5	-	

Typical Electrical and Thermal Characteristics Diagrams

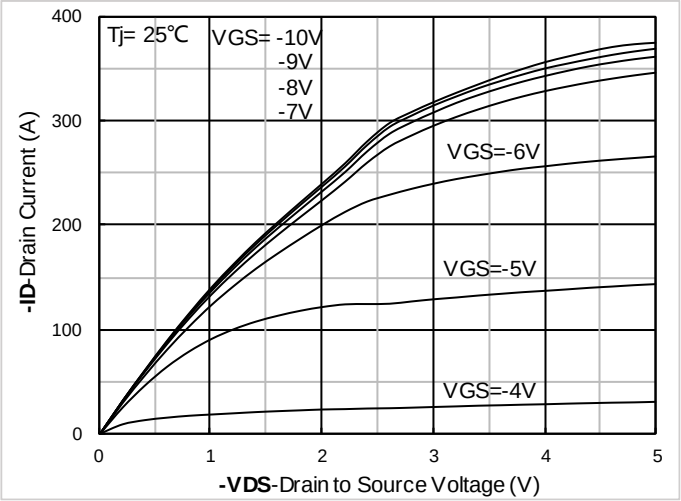


Figure 1. Output Characteristics

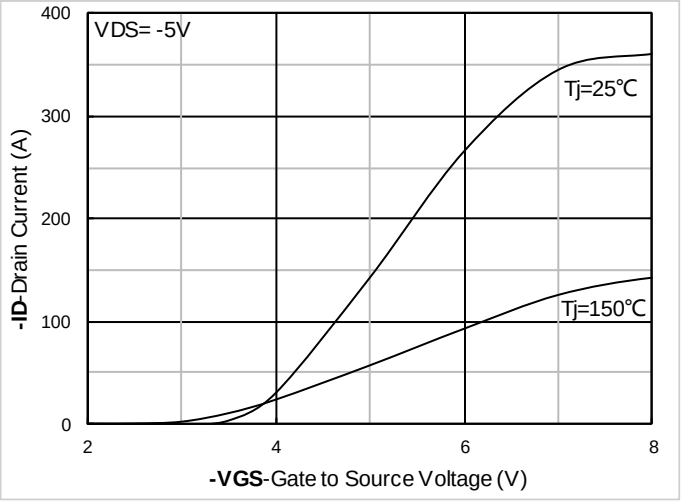


Figure 2. Transfer Characteristics



Figure 3. Capacitance Characteristics

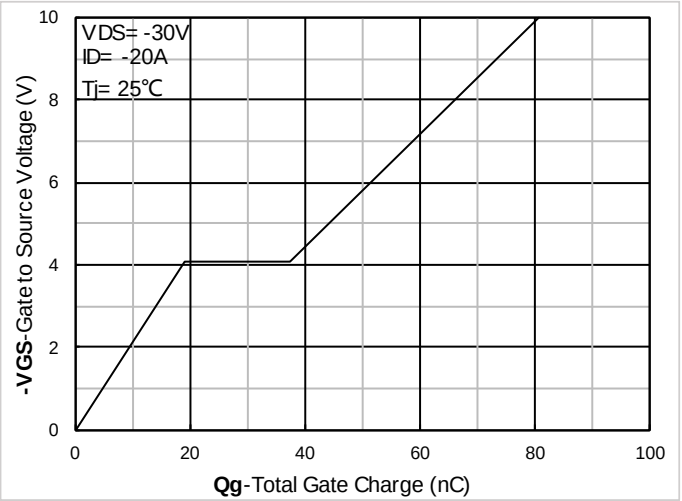


Figure 4. Gate Charge

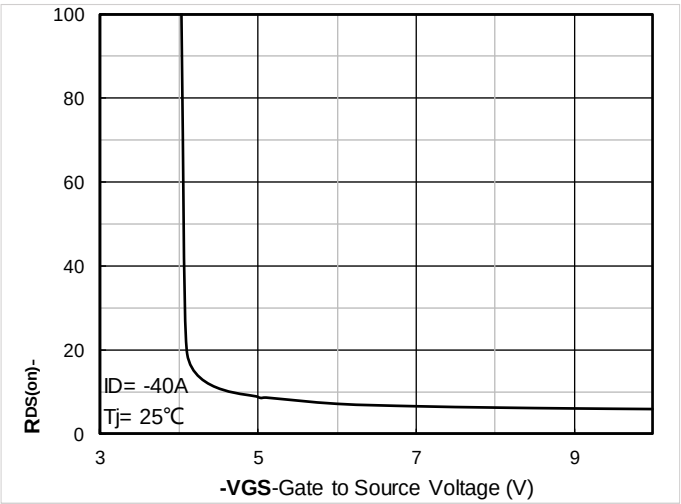


Figure 5. On-Resistance vs Gate to Source Voltage

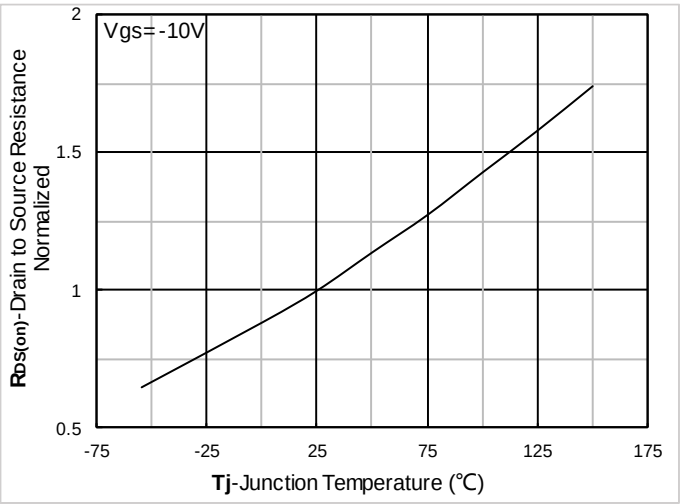


Figure 6. Normalized On-Resistance

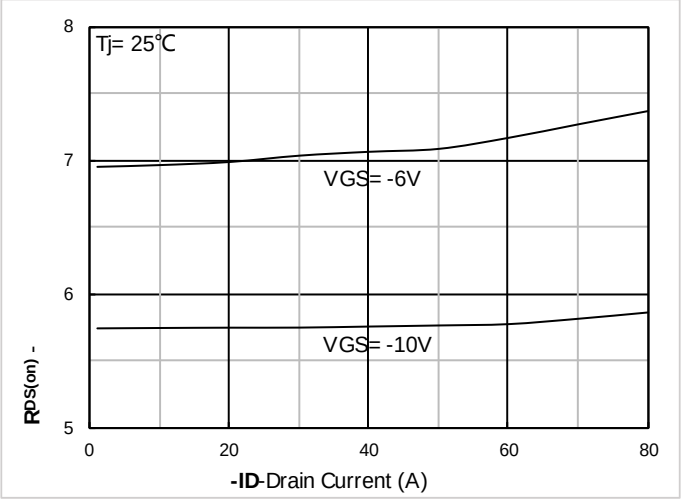


Figure 7. $R_{DS(on)}$ VS Drain Current

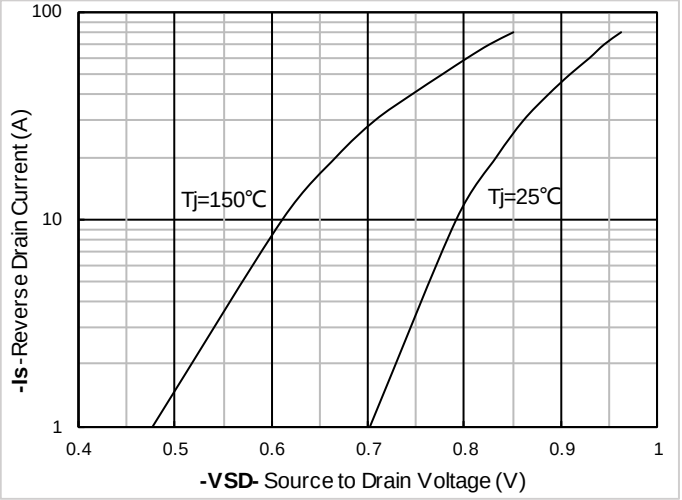


Figure 8. Forward characteristics of reverse diode

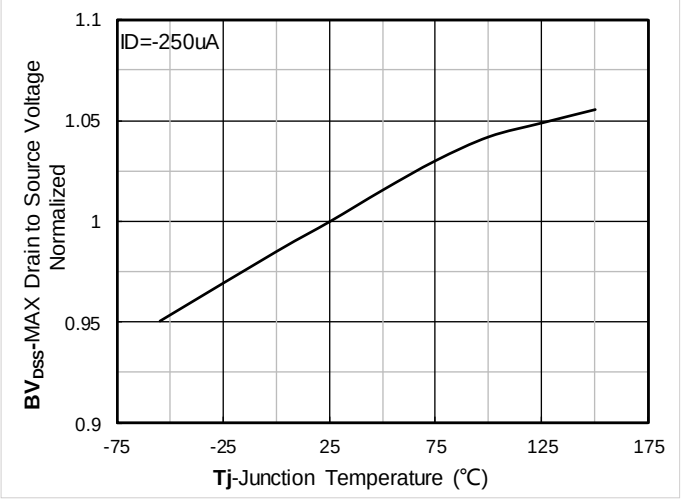


Figure 9. Normalized breakdown voltage

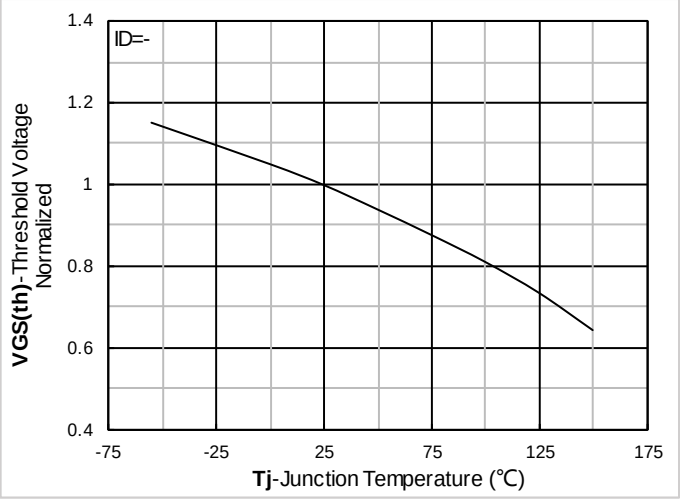


Figure 10. Normalized Threshold voltage

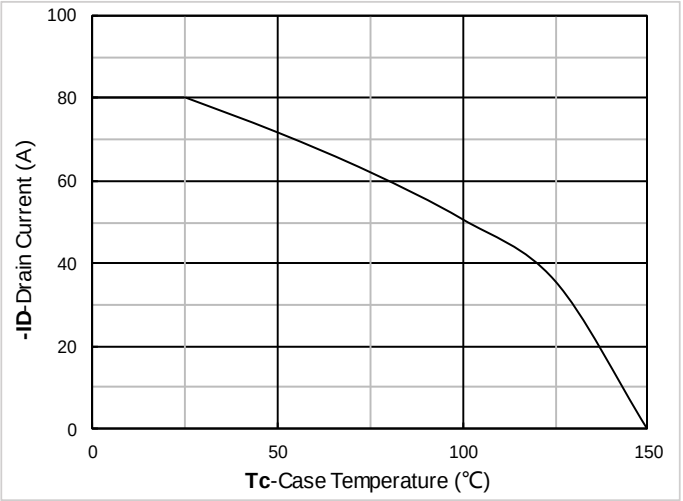


Figure 11. Current dissipation

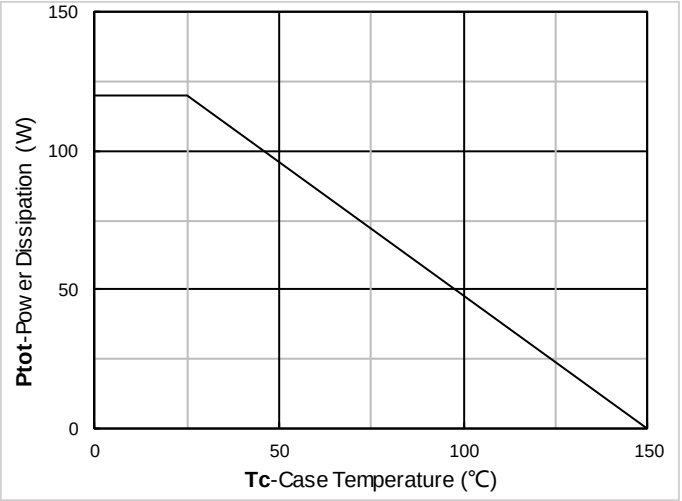
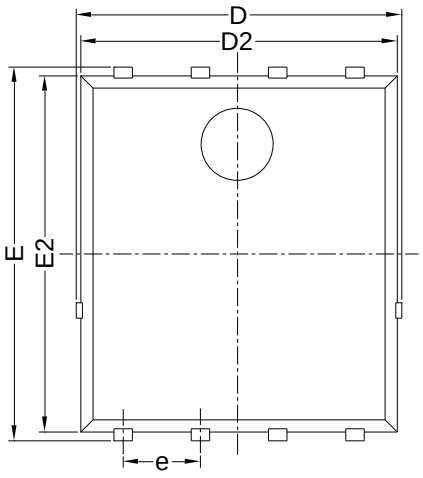
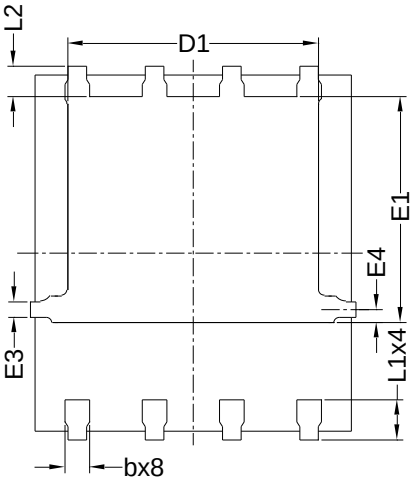


Figure 12. Power dissipation

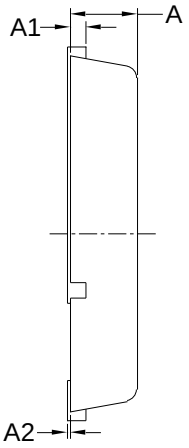
PDFN5060-8L-B-1.1MM Package information



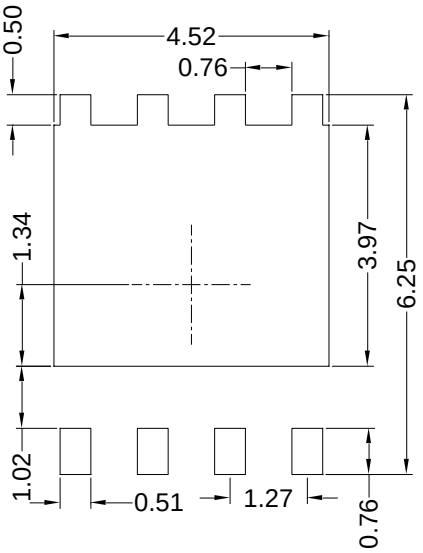
Top View



Bottom View



Side View



Suggested Solder Pad Layout
Top View

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
D	5.15	5.35	5.55
E	5.95	6.15	6.35
A	1.00	1.10	1.20
A1		0.254 BSC	
A2			0.10
D1	3.92	4.12	4.32
E1	3.52	3.72	3.92
D2	5.00	5.20	5.40
E2	5.66	5.86	6.06
E3		0.254 REF	
E4		0.21 REF	
L1	0.56	0.66	0.76
L2		0.50 BSC	
b	0.31	0.41	0.51
e		1.27 BSC	

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

Disclaimer

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