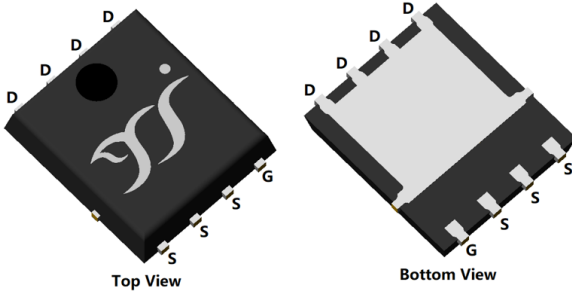
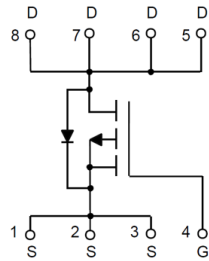


P-Channel Enhancement Mode Field Effect Transistor



PDFN5060-8L



Product Summary

V_{DS}	-100V
I_D	-25A
$R_{DS(ON)}$ (at $V_{GS}=-10V$)	56 mohm
$R_{DS(ON)}$ (at $V_{GS}=-4.5V$)	62 mohm
100% EAS Tested	
100% V_{DS} Tested	

General Description

Split gate trench MOSFET technology
Excellent package for heat dissipation
High density cell design for low $R_{DS(ON)}$
Moisture Sensitivity Level 1
Epoxy Meets UL 94 V-0 Flammability Rating
Halogen Free

Applications

DC-DC Converters
Power management functions

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

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	-100	V
Gate-source Voltage		V_{GS}	20	V
Drain Current	$T_A=25$	I_D	-5	A
	$T_A=100$		-3	
	$T_C=25$		-25	
	$T_C=100$		-16	
Pulsed Drain Current ^A		I_{DM}	-100	A
Avalanche energy ^B		EAS	162	mJ
Total Power Dissipation	$T_A=25$	P_D	2.5	W
	$T_A=100$		1	
	$T_C=25$		88	
	$T_C=100$		35.2	
Junction and Storage Temperature Range		T_J, T_{STG}	-55 +150	

Thermal resistance

Parameter		Symbol	Typ	Max	Units
Thermal Resistance Junction-to-Ambient ^D	t 10S	R	15	20	/W
Thermal Resistance Junction-to-Ambient ^D	Steady-State		40	50	
Thermal Resistance Junction-to-Case	Steady-State	R	1.15	1.42	

Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJG25GP10A	F1	YJG25GP10A	5000	10000	100000	13 reel



YJG25GP10A

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	-100			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-100V, V _{GS} =0V	T _J =25		-1	
			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 =-250	-1.0	-1.8	-2.5	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = -10V, I _D =-15A		42	56	m
		V _{GS} = -4.5V, I _D =-7A		46	62	
Diode Forward Voltage	V _{SD}	I _S =-15A, V _{GS} =0V			-1.3	V
Maximum Body-Diode Continuous Current	I _S				-25	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =-50V, V _{GS} =0V, f=1MHZ		2100		pF
Output Capacitance	C _{oss}			236		
Reverse Transfer Capacitance	C _{rss}			48		
Switching Parameters						
Total Gate Charge	Q _{g(-10V)}	V _{GS} =-10V, V _{DS} =-50V, I _D =-5A		40		nC
Total Gate Charge	Q _{g(-4.5V)}			19.4		
Gate-Source Charge	Q _{gs}			7.8		
Gate-Drain Charge	Q _{gd}			8.6		
Reverse Recovery Charge	Q _{rr}	I _F =-5A, di/dt=100A/us		280		
Reverse Recovery Time	t _{rr}			104		
Turn-on Delay Time	t _{D(on)}	V _{GS} =-10V, V _{DD} =-50V, I _{DS} =-5A R _{GEN} =6		13		ns
Turn-on Rise Time	t _r			39		
Turn-off Delay Time	t _{D(off)}			100.1		
Turn-off fall Time	t _f			105.3		

A. Repetitive rating; pulse width limited by max. junction temperature.

B. V_{DD}=50V, R_G 0.5mH.

C. Pd is based on max. junction temperature, using junction-case thermal resistance.

D. Power dissipation P application depends on the user's specific board design -4 board with 2oz. Copper, in a still air environment with TA =25 C. The C. The value in any given

■ Typical Performance Characteristics

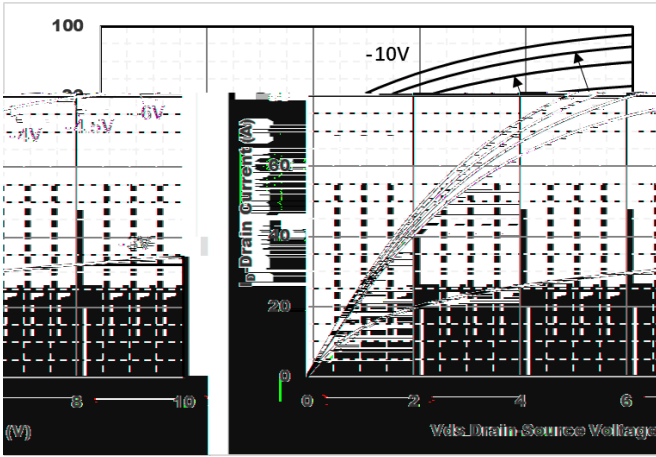


Figure1. Output Characteristics

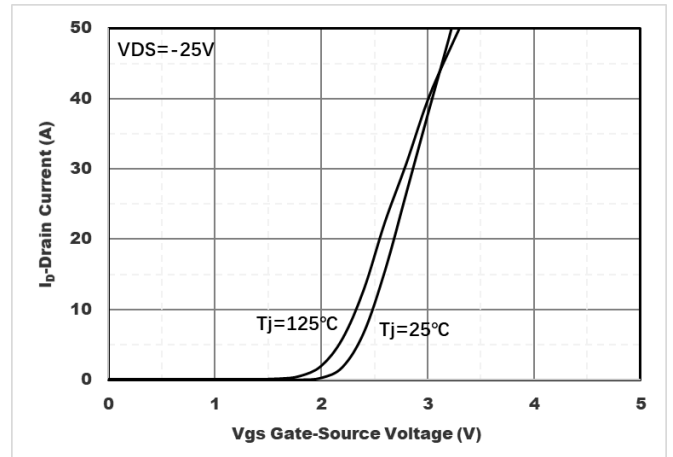


Figure2. Transfer Characteristics

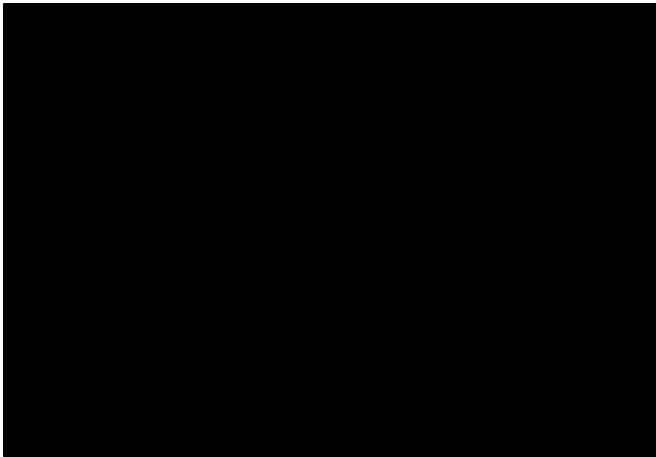


Figure3. Capacitance Characteristics

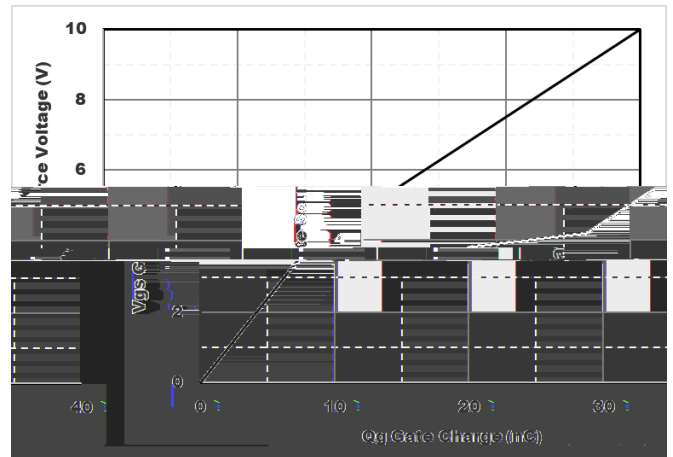


Figure4. Gate Charge

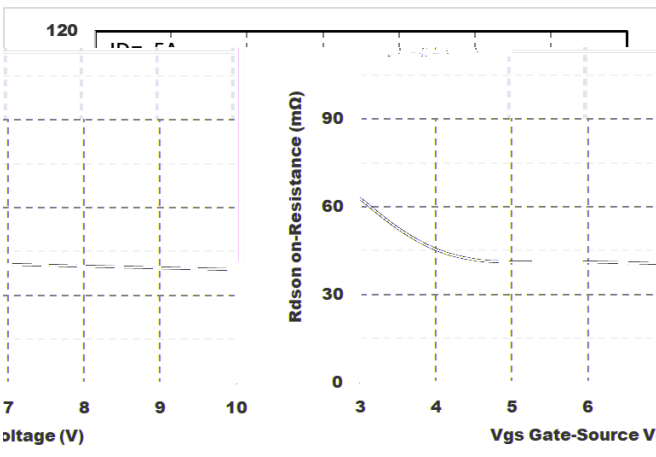


Figure5. : On-Resistance vs. Gate to Source Voltage

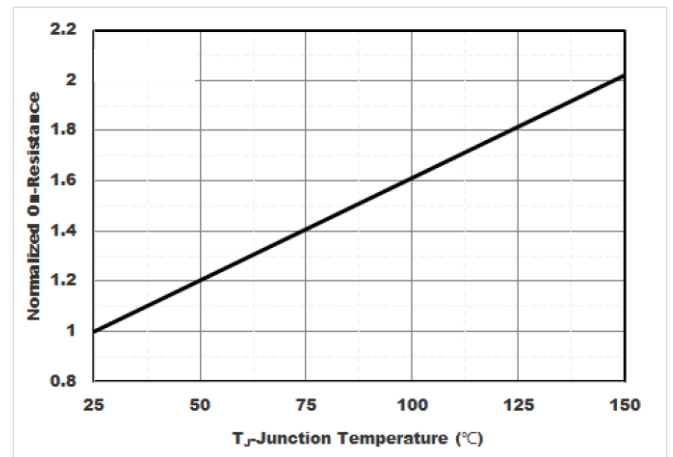


Figure6. Normalized On-Resistance



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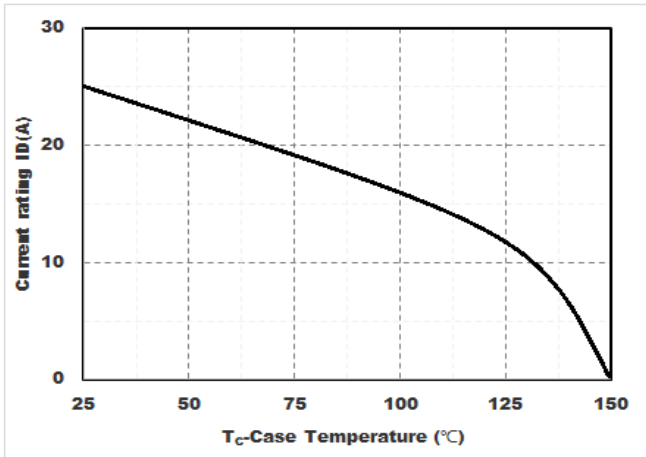


Figure7. Drain current

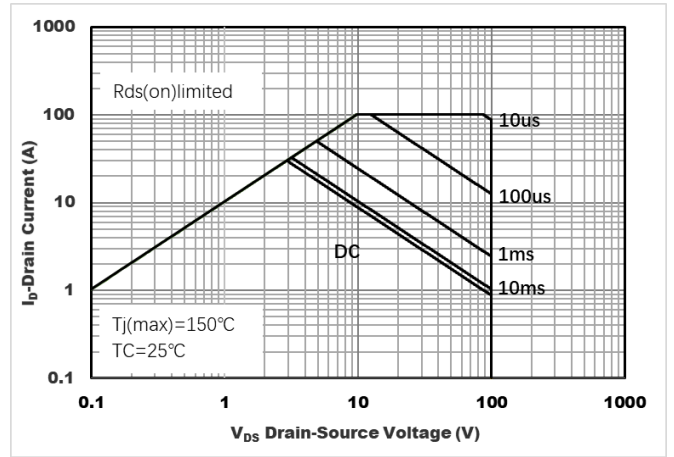


Figure8.Safe Operation Area

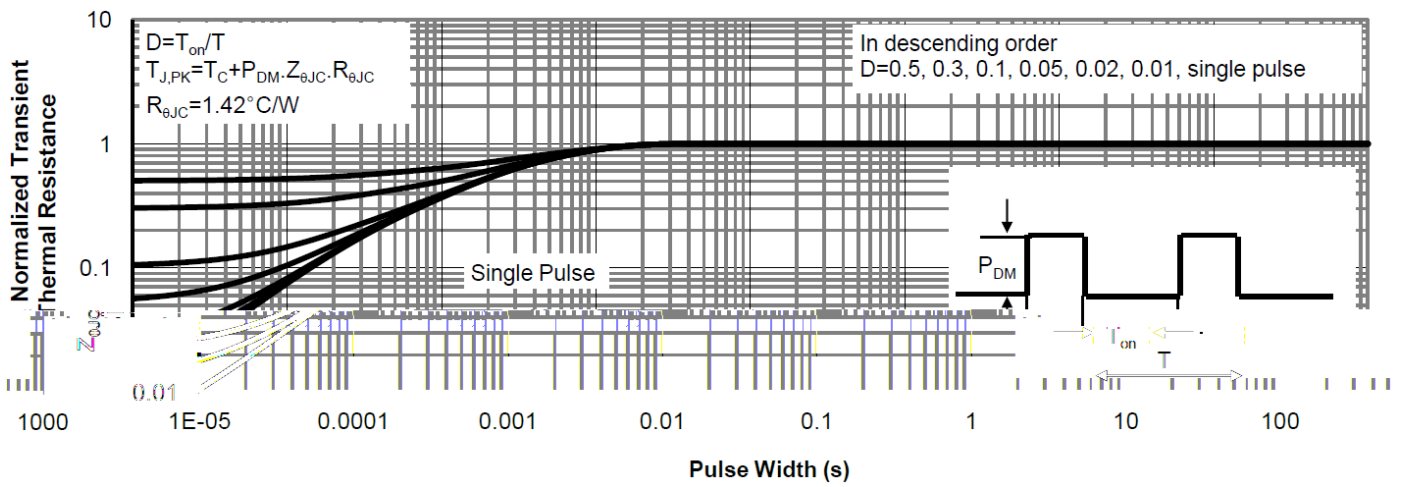
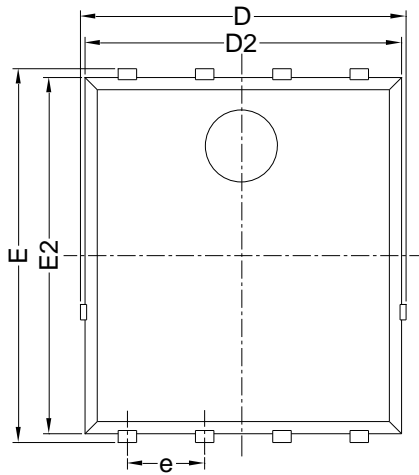


Figure9.Normalized Maximum Transient thermal impedance

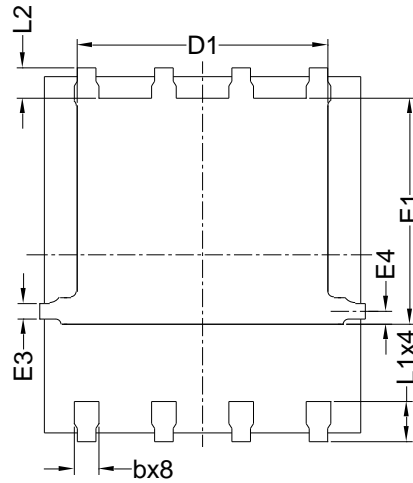


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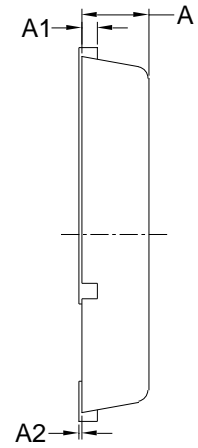
PDFN5060-8L-B-1.1MM Package information



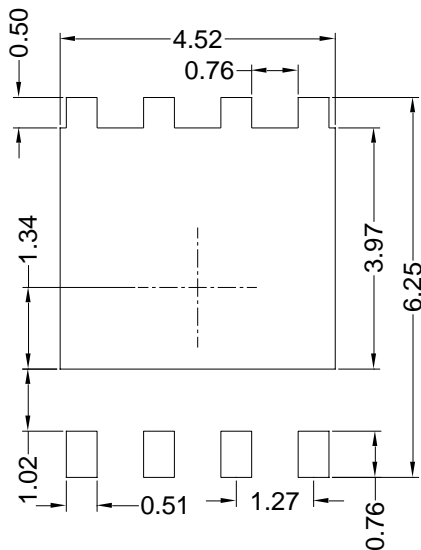
Top View



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: ± 0.10 mm.
3. The pad layout is for reference purposes only.



YJG25GP10A

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