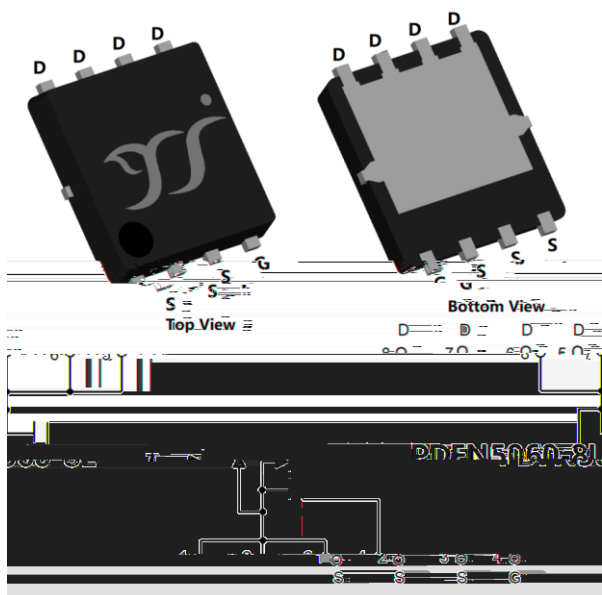


N-Channel Enhancement Mode Field Effect Transistor



Product Summary

- V_{DS} 100V
- I_D 120A
- $R_{DS(ON)}$ (at $V_{GS}=10V$) 4 mohm
- $R_{DS(ON)}$ (at $V_{GS}=4.5V$) 5 mohm
- 100% UIS Tested
- 100% V_{DS} Tested

General Description

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

Applications

- Power switching application
- Uninterruptible power supply
- PD charger
- DC-DC convertor

■ 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	$T_C=25$	I_D	120	A
	$T_C=100$		76	
Pulsed Drain Current ^A		I_{DM}	480	A
Avalanche energy ^B		EAS	529	mJ
Total Power Dissipation ^C	$T_C=25$	P_D	108	W
	$T_C=100$		46	
Junction and Storage Temperature Range		T_J, T_{STG}	-55 +150	

■ Thermal resistance

Parameter		Symbol	Typ	Max	Units
Thermal Resistance Junction-to-Ambient ^D	Steady-State	$R_{\theta JA}$	42	51	/W
Thermal Resistance Junction-to-Case	Steady-State	$R_{\theta JC}$	0.89	1.08	

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJG120G10AR	F1	G120G10AR	5000	10000	100000	13" reel



YJG120G10AR

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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	100	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100V, V_{GS}=0V$	-	-	1	μA
		$V_{DS}=100V, V_{GS}=0V, T_J=150$	-	-	100	
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=20V, V_{DS}=0V$	-	-	100	nA
Gate Threshold Voltage		$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.8	2.5	V
		$V_{GS}=10V, I_D=60A$	-	3.2	4	
Static Drain-Source On-Resistance	$R_{DS(on)}$					m Ω



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Typical Electrical and Thermal Characteristics Diagrams

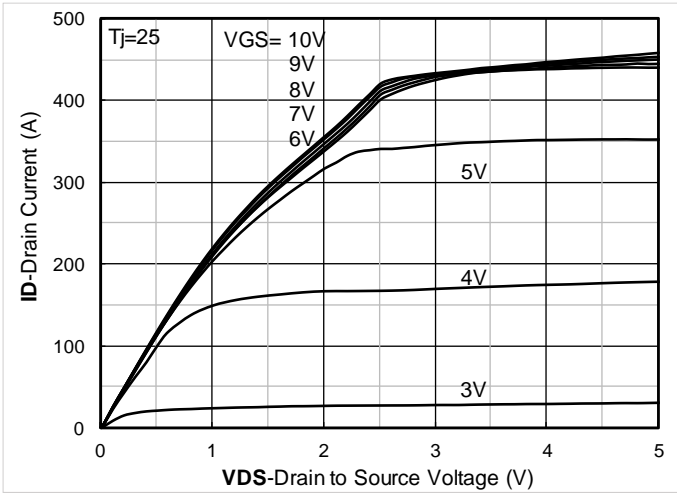


Figure1. Output Characteristics

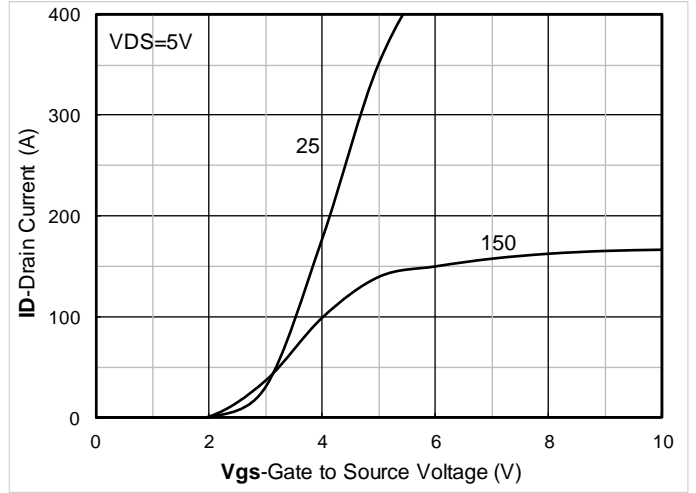


Figure2. Transfer Characteristics

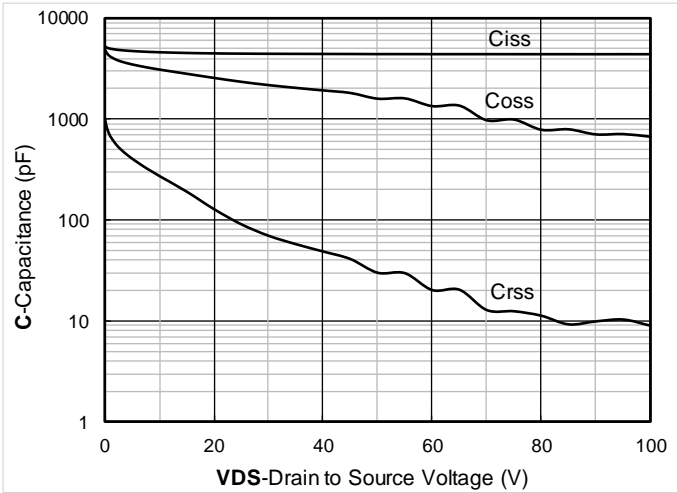


Figure3. Capacitance Characteristics

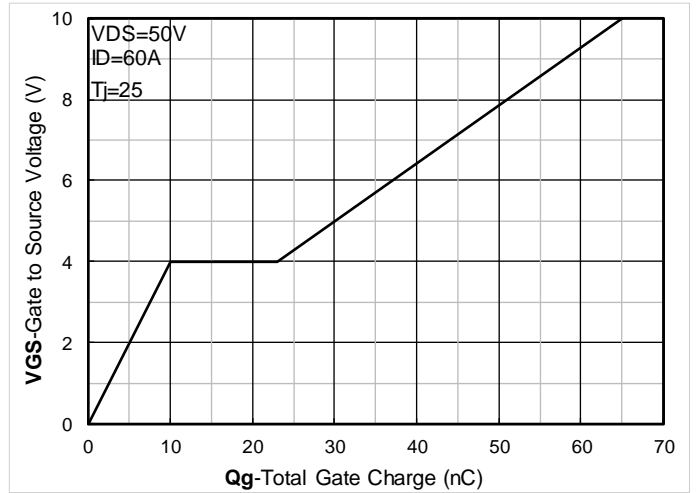


Figure4. Gate Charge

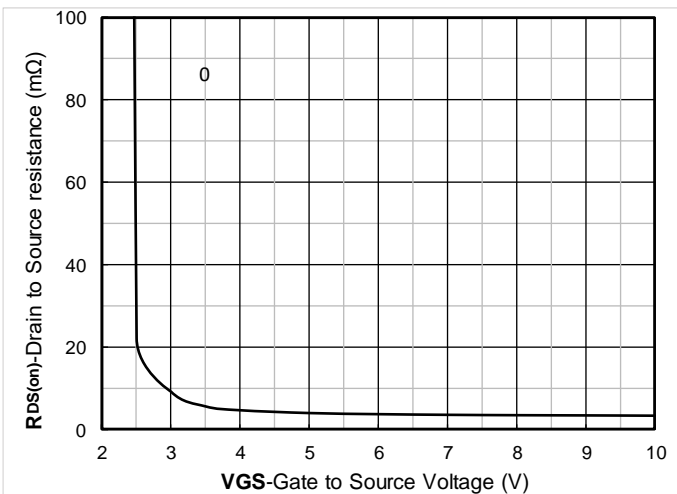


Figure5. On-Resistance vs Gate to Source Voltage

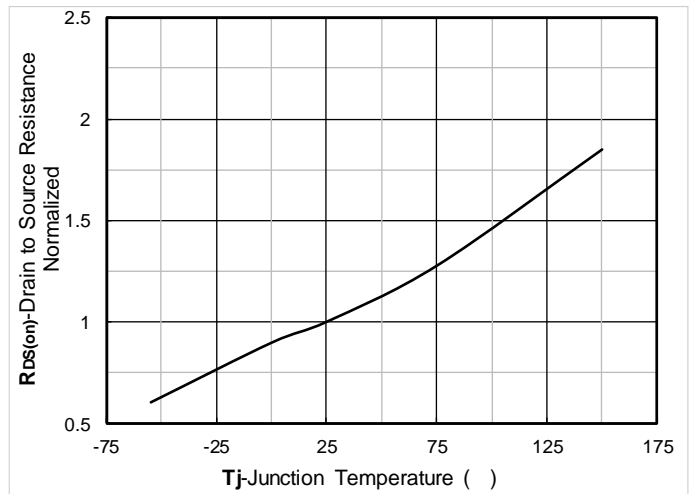


Figure6. Normalized On-Resistance



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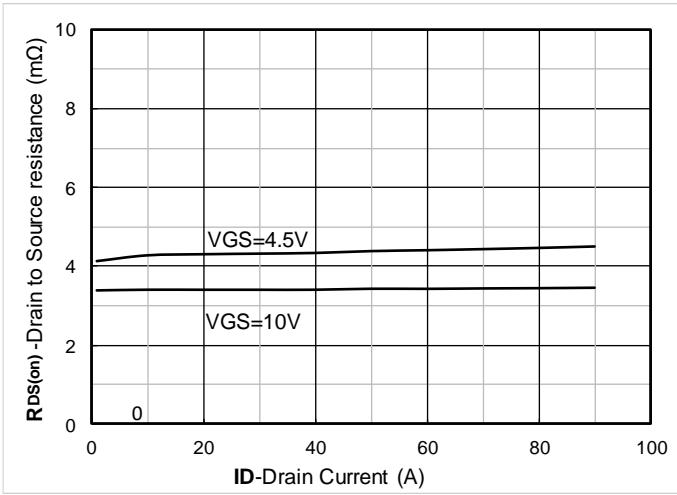


Figure7. RDS(on) VS Drain Current

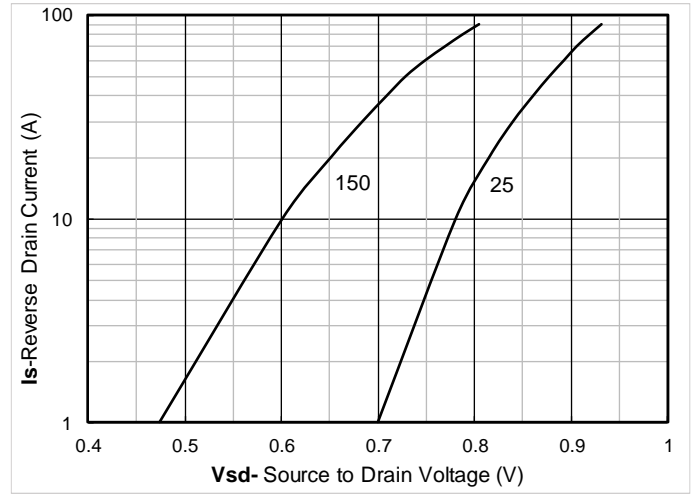


Figure8. Forward characteristics of reverse diode

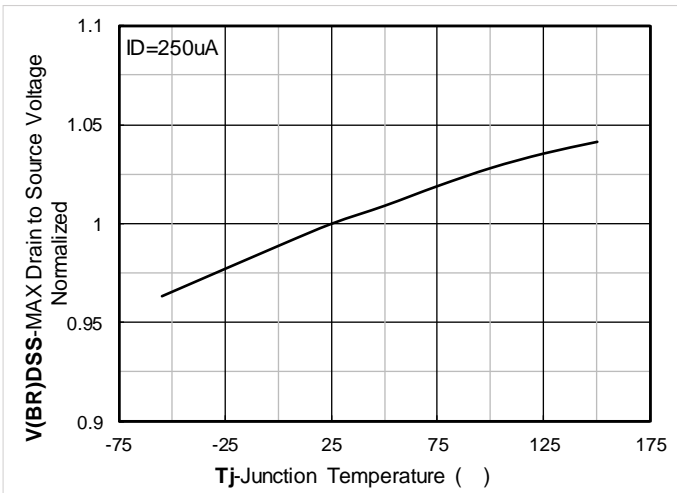


Figure9. Normalized breakdown voltage

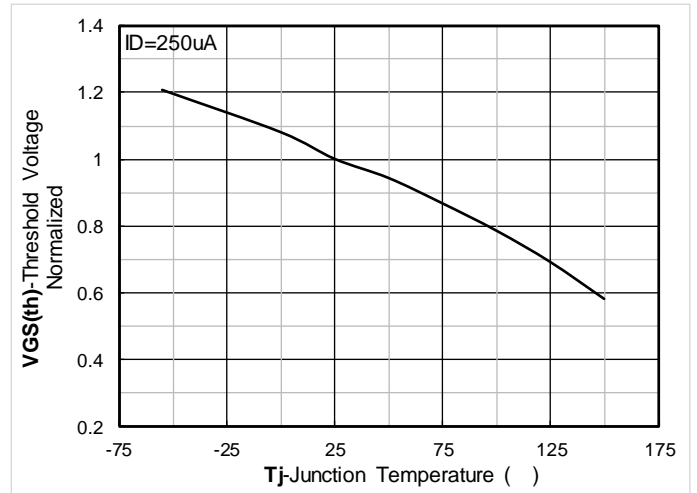


Figure10. Normalized Threshold voltage

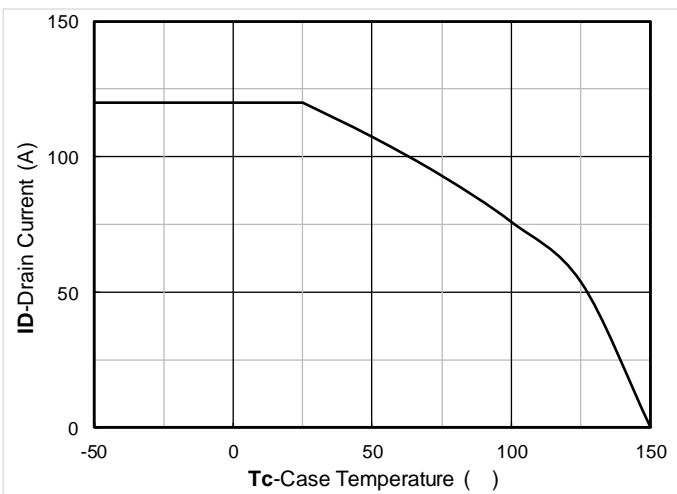


Figure11. Current dissipation

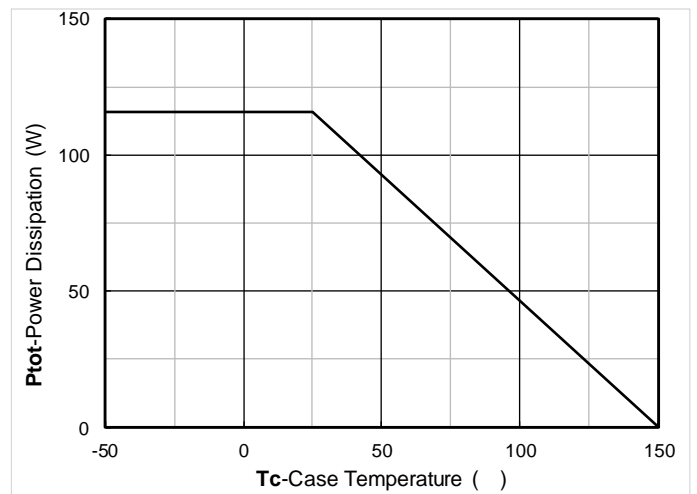


Figure12. Power dissipation



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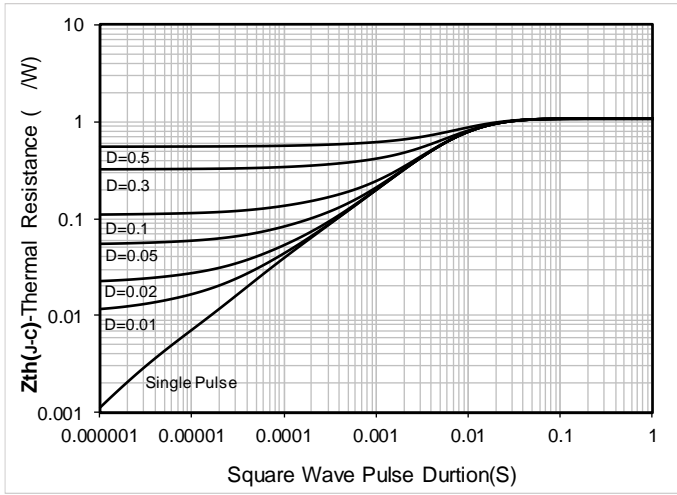


Figure13. Maximum Transient Thermal Impedance

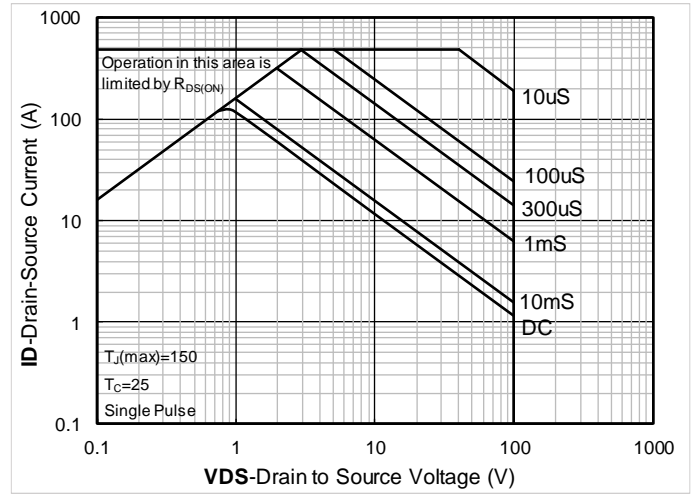
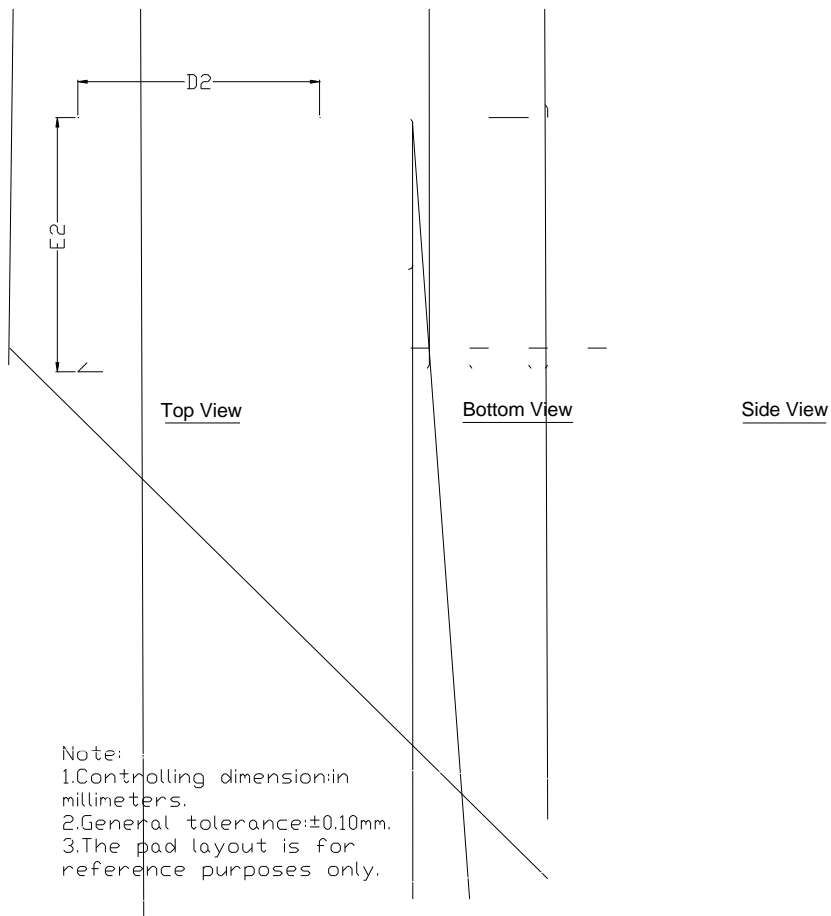


Figure14. Safe Operation Area



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■ PDFN5060-8L-D-0.95MM Package information



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
D	5.15	5.35	5.55
E	5.95	6.05	6.15
A	0.85	0.95	1.00
A1	0.203 BSC		
A2			0.08
D1	4.25	4.35	4.45
E1	3.525	3.625	3.725
D2		5.20	
E2		5.55	
L1	0.45	0.55	0.65
L2	0.68 BSC		
b	0.3	0.4	0.5
e	1.27 BSC		



YJG120G10AR

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