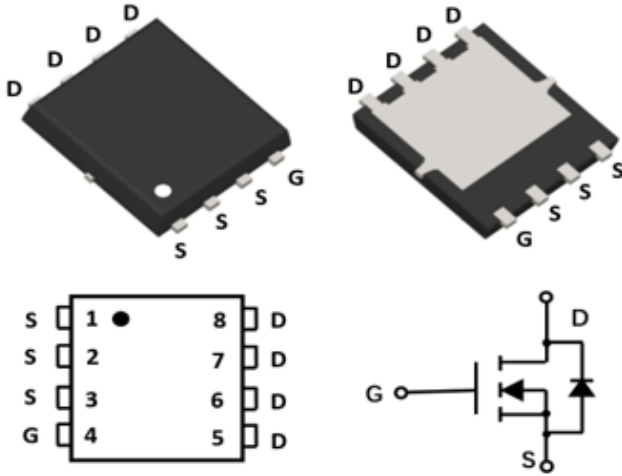




YJG120G10BR

N-Channel Enhancement Mode Field Effect Transistor

PDFN5060



Product Summary

V_{DS}	100V
I_D	120A
$R_{DS(ON)}$ (at $V_{GS}=10V$)	4.2mohm
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 charge
 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	I_D	$T_C=25$	120	A
		$T_C=100$	76	
Pulsed Drain Current ^A	I_{DM}	480	A	
Avalanche energy ^B	EAS	552	mJ	
Total Power Dissipation ^C	P_D	$T_C=25$	108	W
		$T_C=100$	43	
Junction and Storage Temperature Range	T_J, T_{STG}	-55 +150		

Thermal resistance

Parameter	Symbol	Typ	Max	Units
Thermal Resistance Junction-to-Ambient ^D	R	45	55	/W
Thermal Resistance Junction-to-Case				

Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJG120G10BR	F1	G120G10BR	5000	10000	100000	13 reel



YJG120G10BR

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	-	-	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 =250	2	2.8	4	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =60A	-	3.5	4.2	m
		V _{GS} =10V, I _D =20A	-	3.5	4.2	m
Diode Forward Voltage	V _{SD}	I _S =60A, V _{GS} =0V	-	0.9	1.2	V
Gate resistance	R _G	f=1MHz, Open drain	-	0.8	-	
Maximum Body-Diode Continuous Current	I _S		-	-	120	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =50V, V _{GS} =0V, f=1MHZ	-	4400		pF
Output Capacitance	C _{oss}		-	1600		
Reverse Transfer Capacitance	C _{rss}		-	20		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =50V, I _D =60A	-	39	-	nC
Gate-Source Charge	Q _{gs}		-	14	-	
Gate-Drain Charge	Q _{gd}		-	6	-	
Reverse Recovery Charge	Q _{rr}	I _F =60A, di/dt=500A/us	-	180	-	nC
Reverse Recovery Time	t _{rr}		-	40	-	nS
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V, V _{DD} =50V, I _D =60A R _{GEN} =2.2	-	20	-	nS
Turn-on Rise Time	t _r		-	95	-	
Turn-off Delay Time	t _{D(off)}		-	30	-	
Turn-off fall Time	t _f		-	7	-	

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

B. T_J=25 , V_{DD}=50V, V_G=10V, R_G 2mH, I_{AS}=23.5A.

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

D. The value of R is measured with the device mounted on 1in2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25 . The maximum allowed junction temperature of 150 . The value in any given application depends on the user's specific board design.



YJG120G10BR

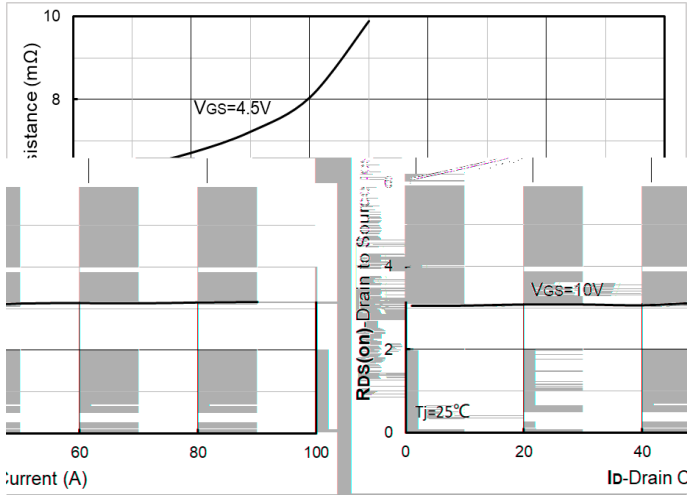


Figure7. RDson VS Drain Current

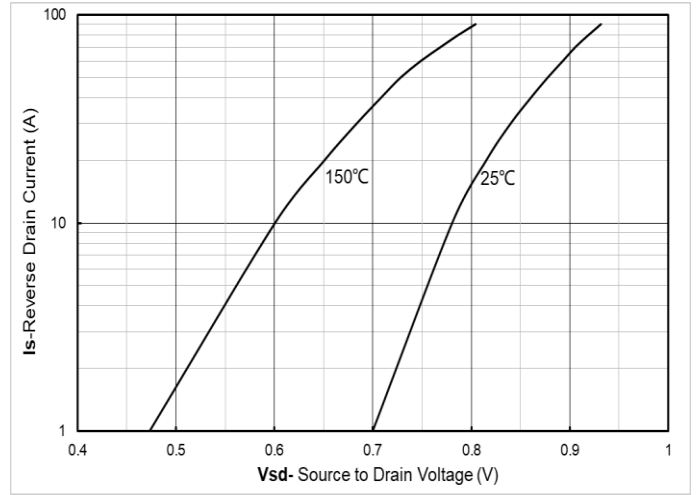


Figure8. Forward characteristics of reverse diode

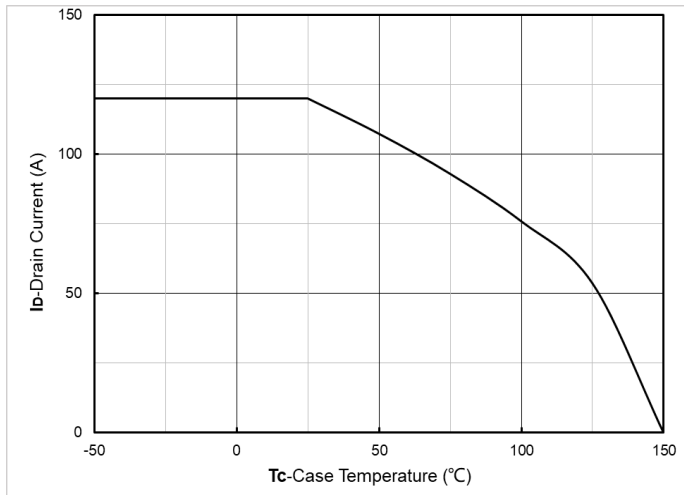


Figure9. Current dissipation

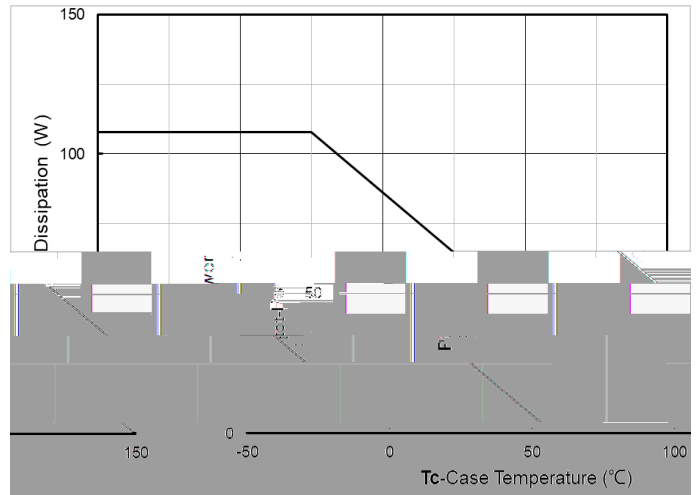


Figure10. Power dissipation

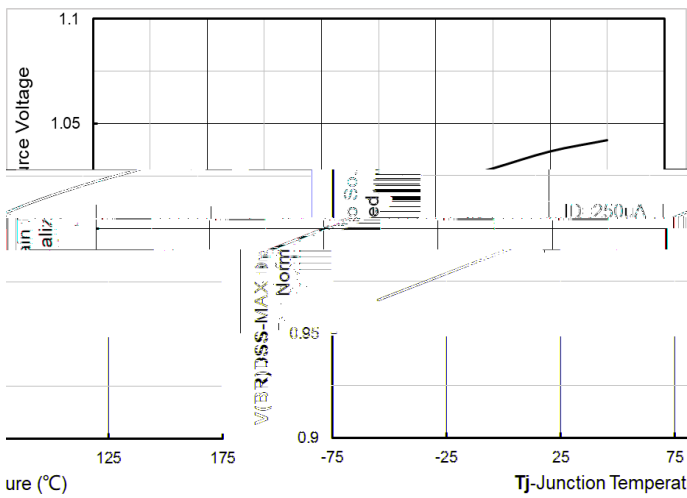


Figure11. Normalized breakdown voltage

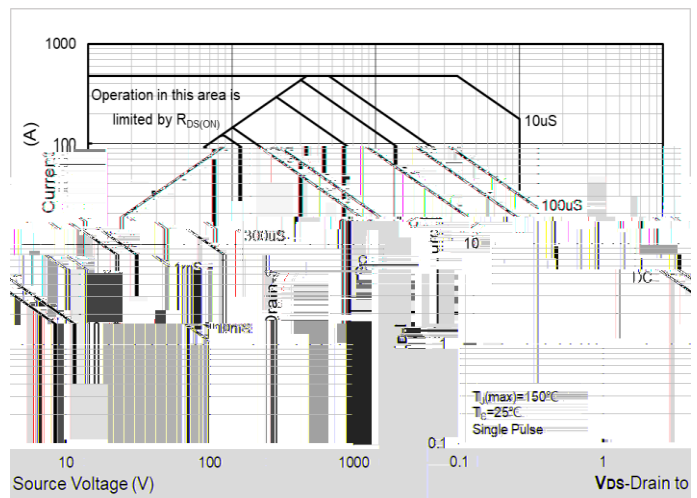


Figure12. Safe Operation Area

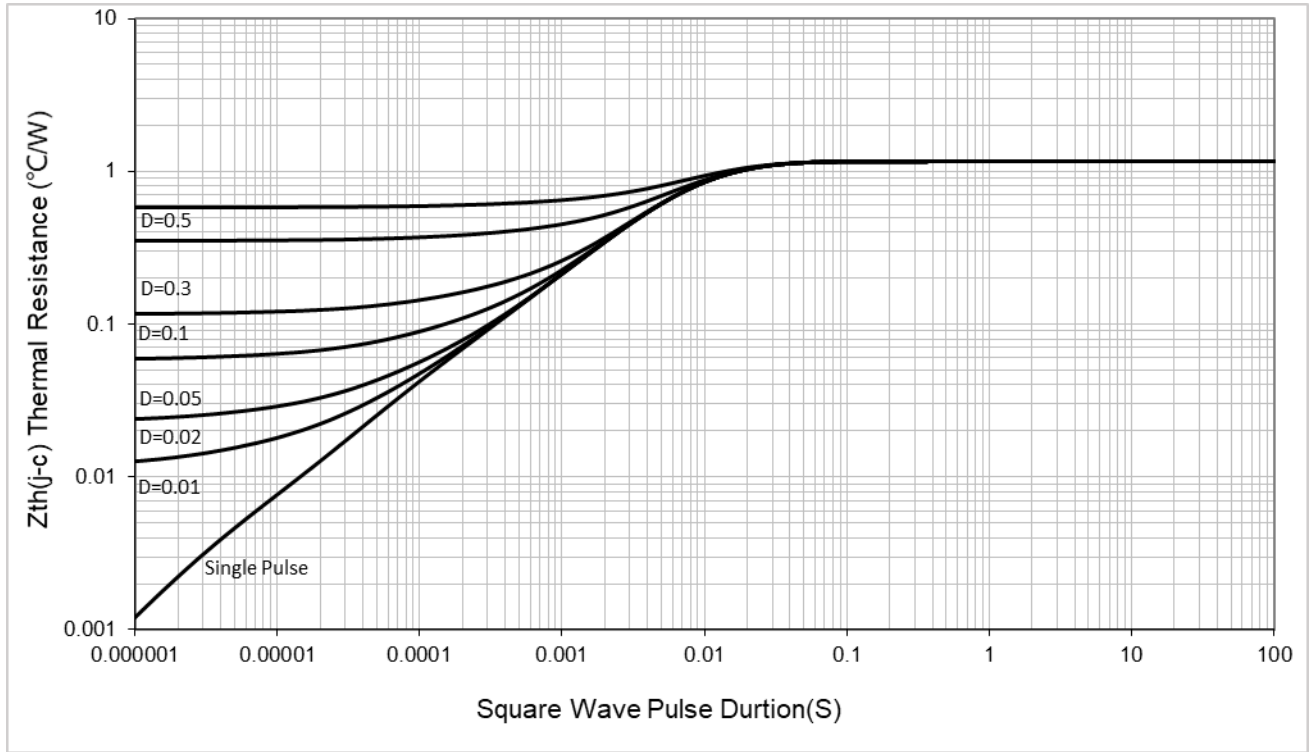
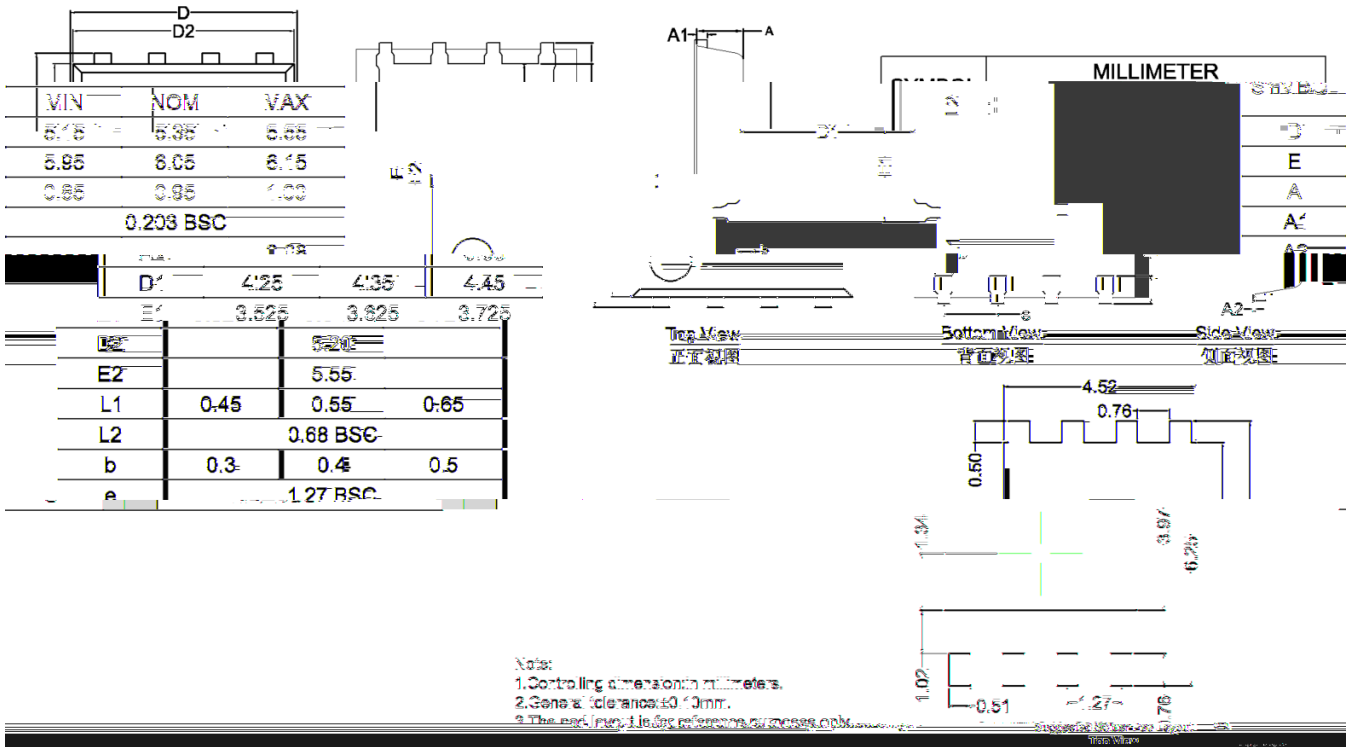


Figure13. Maximum Transient Thermal Impedan



YJG120G10BR

PDFN5060-8L-D-0.95MM Package information





YJG120G10BR

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](http://www.21yangjie.com)