



YJN180G10HJ

N-Channel Enhancement Mode Field Effect Transistor

Product Summary

V_{DS}	100V
I_D	180A
$R_{DS(ON)}$ (at $V_{GS}=10V$)	4.3m
100% EAS Tested	
100%	



YJN180G10HJ

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	100	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =100V, V _{GS} =0V	-	-	1	
		V _{DS} =100V, V _{GS} =0V, T _J =150°C	-	-	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	2	3	4	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =90A	-	3.3	4.3	
		V _{GS} =10V, I _D =20A	-	3.3	4.3	
Diode Forward Voltage	V _{SD}	I _S =90A, V _{GS} =0V	-	1	1.2	V
Gate resistance	R _G	f=1MHz, Open drain	-	1.3	-	
Maximum Body-Diode Continuous Current	I _S		-	-	180	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =50V, V _{GS} =0V, f=1MHz	-	9100	-	pF
Output Capacitance	C _{oss}		-	1200	-	
Reverse Transfer Capacitance	C _{rss}		-	400	-	
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =50V, I _D =90A	-	138	-	nC
Gate-Source Charge	Q _{gs}		-	47	-	
Gate-Drain Charge	Q _{gd}		-	32	-	
Reverse Recovery Charge	Q _{rr}	I _F =90A, di/dt=100A/us	-	226	-	nC
Reverse Recovery Time	t _{rr}		-	82	-	ns
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V, V _{DD} =50V, I _D =90A R _{GEN} =2.2	-	29	-	ns
Turn-on Rise Time	t _r		-	60	-	
Turn-off Delay Time	t _{D(off)}		-	45	-	
Turn-off fall Time	t _f		-	17	-	

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

B. T_J=25°C, V_{DD}=100V, V_G=10V, R_G 5mH, I_{AS}=24.5A.

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

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



YJN180G10HJ

Typical Electrical and Thermal Characteristics Diagrams

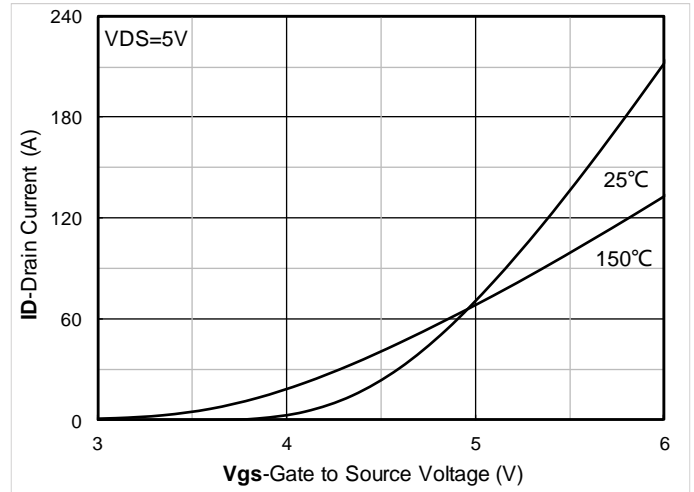


Figure 2. Transfer Characteristics

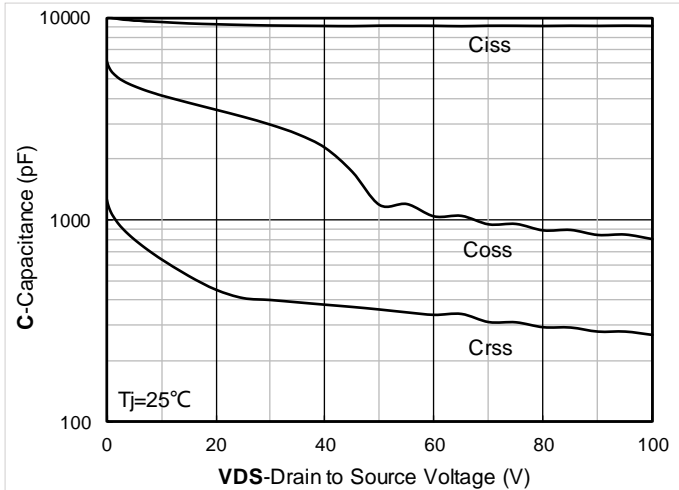


Figure 3. Capacitance Characteristics

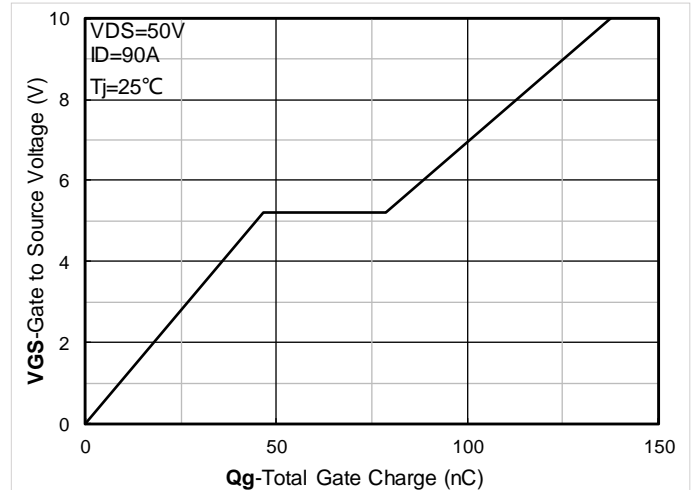


Figure 4. Gate Charge

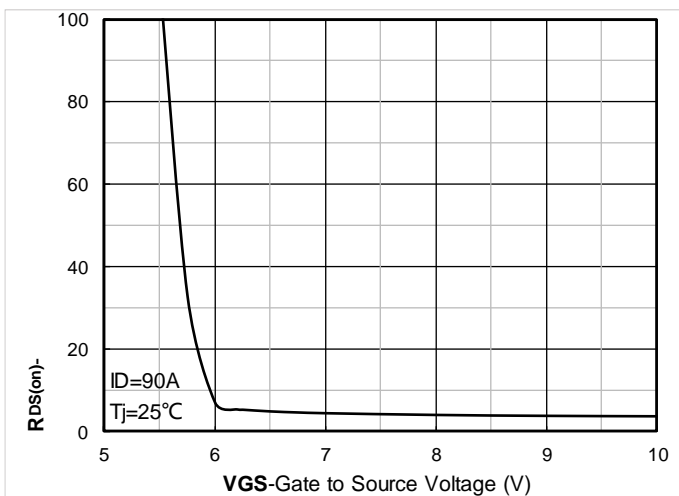


Figure 5. On-Resistance vs Gate to Source Voltage

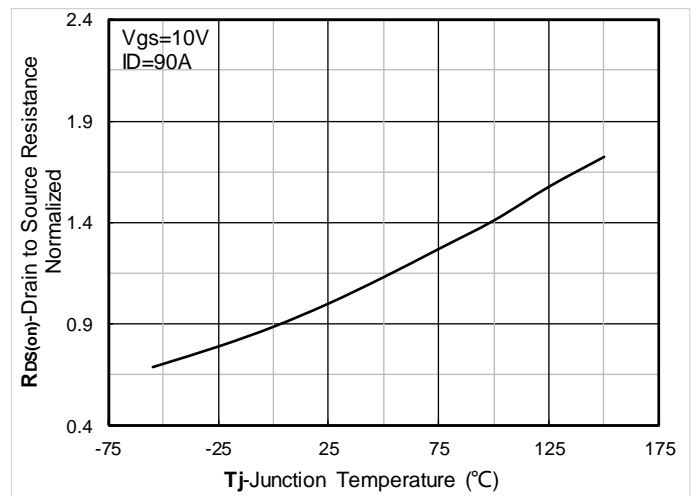


Figure 6. Normalized On-Resistance



YJN180G10HJ

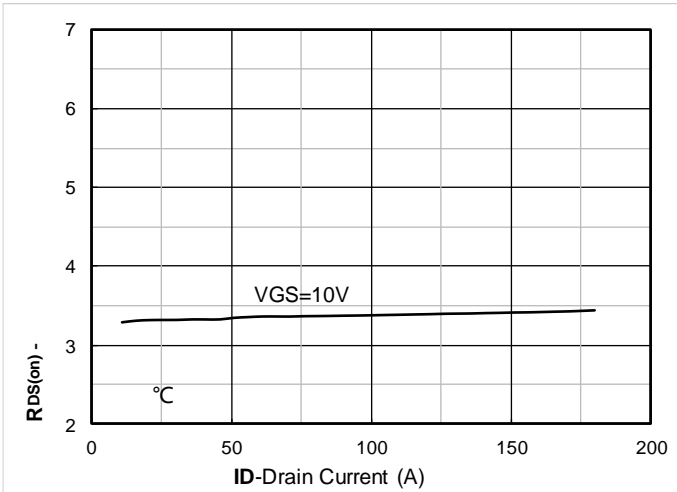


Figure 7. $R_{DS(on)}$ VS Drain Current

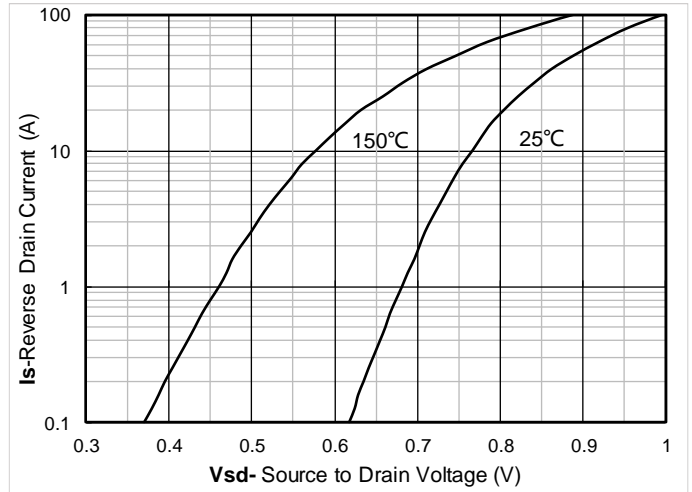


Figure 8. Forward characteristics of reverse diode

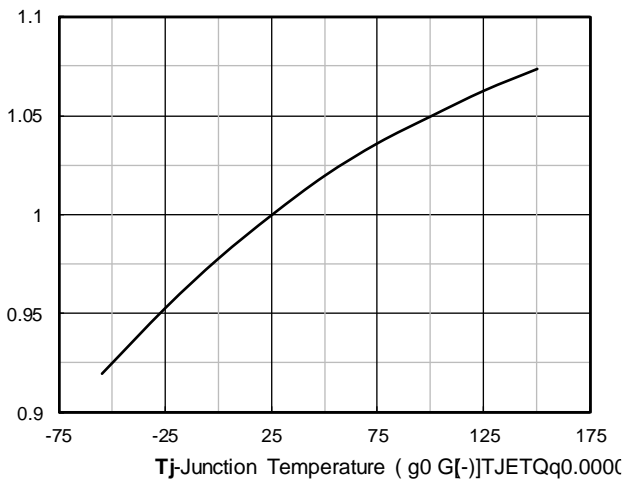


Figure 9. Normalized breakdown voltage

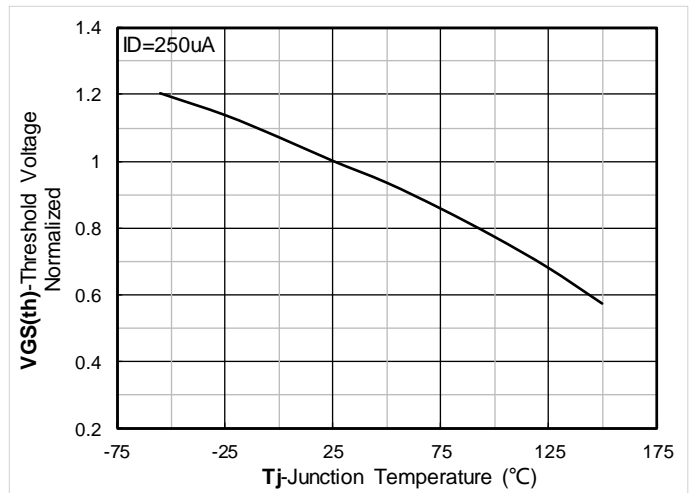


Figure 10. Normalized Threshold voltage

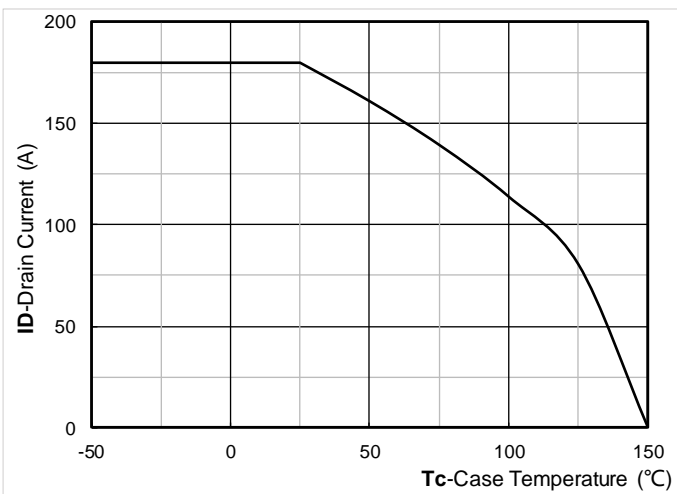


Figure 11. Current dissipation

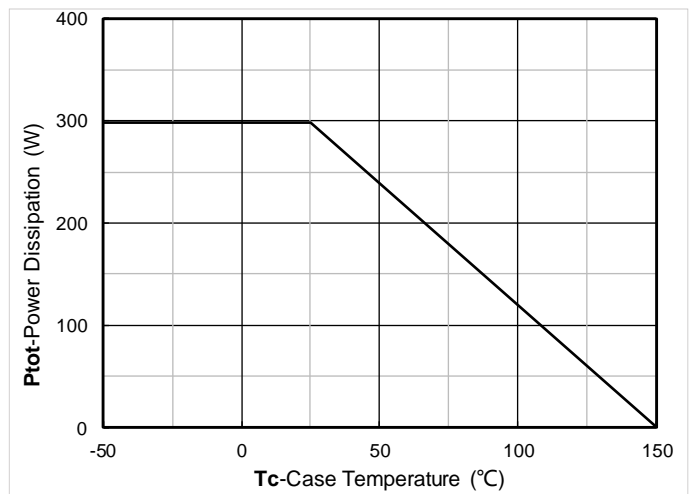


Figure 12. Power dissipation

YJN180G10HJ

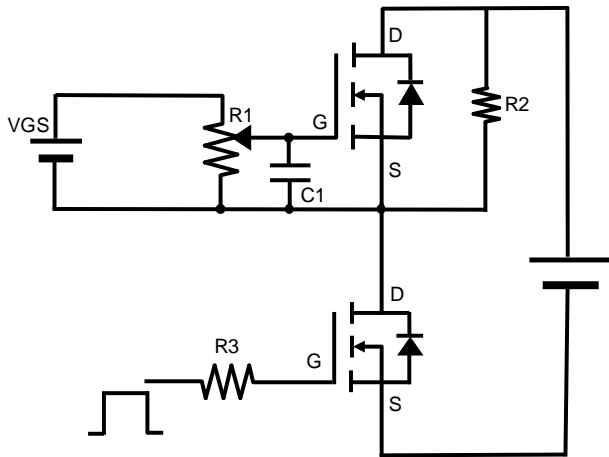


Figure B. Gate Charge Test Circuit & Waveform

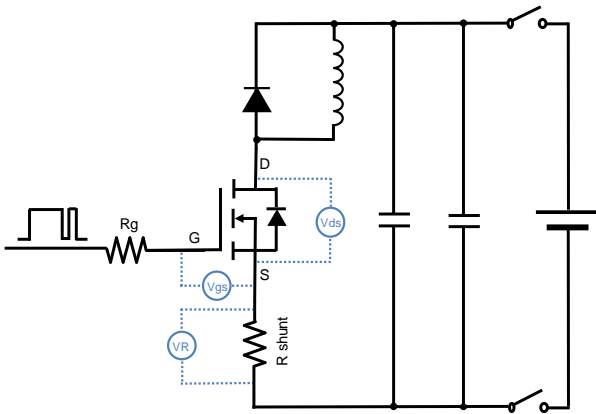


Figure C. Resistive Switching Test Circuit & Waveform

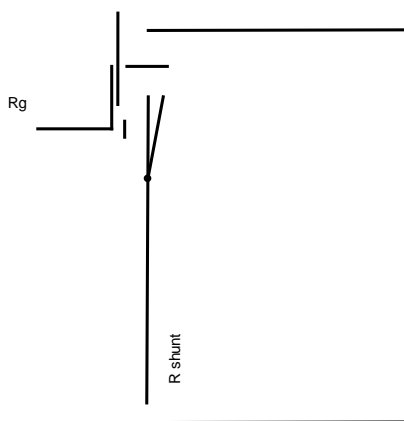


Figure D. Diode Recovery Test Circuit & Waveform



TO-247AB Package information

TO-247AB		
Dim	Min	Max
A		



YJN180G10HJ

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>