



YJQ50N04B

N-Channel Enhancement Mode Field Effect Transistor

Product Summary

V_{DS}	40V
I_D	50A
$R_{DS(ON)}$ (at $V_{GS}=10V$)	4.5m
$R_{DS(ON)}$ (at $V_{GS}=4.5V$)	6m
100% EAS Tested	

General Description

Trench Power LV MOSFET technology
Excellent package for heat dissipation
High density cell design for low $R_{DS(ON)}$

Applications

High current load applications
Load switching
Hard switched and high frequency circuits
Uninterruptible power supply

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

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	40	V
Gate-source Voltage		V_{GS}	± 20	V
Drain Current	$T_A=25^\circ C$	I_D	12	A
	$T_A=100^\circ C$		7.5	
	$T_C=25^\circ C$		50	
	$T_C=100^\circ C$		31	
Avalanche energy ^B		I_{DM}	200	A



YJQ50N04B

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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
-----------	--------	------------	-----	-----	-----	-------



Typical Electrical and Thermal Characteristics Diagrams

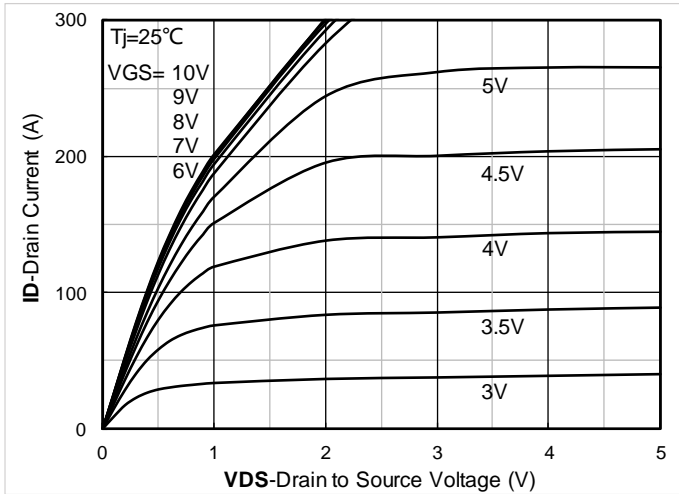


Figure 1. Output Characteristics

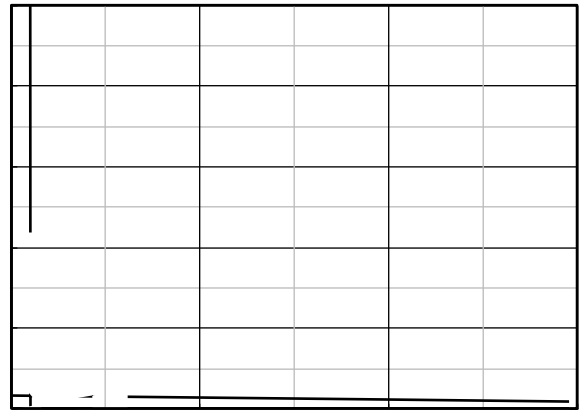


Figure 2. Transfer CharacteristiTm/F5 9.96 Tf1 0 0 2



YJQ50N04B

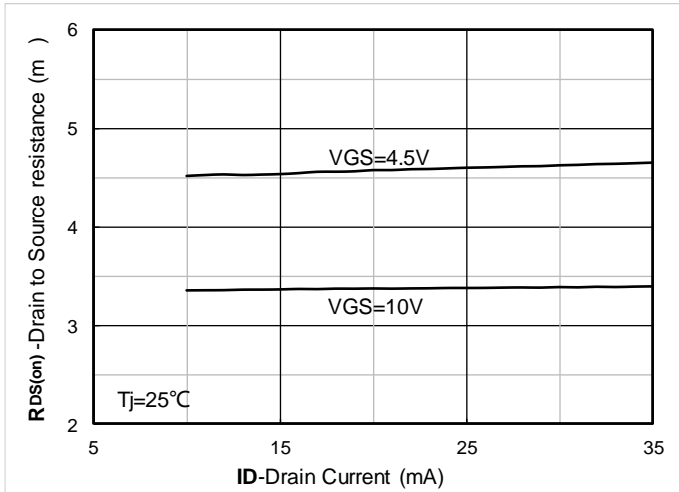


Figure 7. $R_{DS(on)}$ VS Drain Current

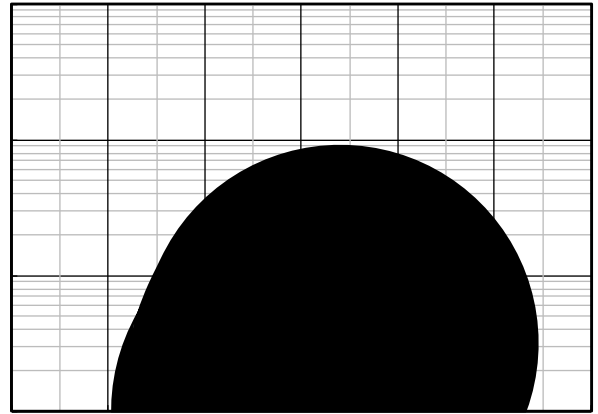


Figure 8. Forward characteristics of reverse diode

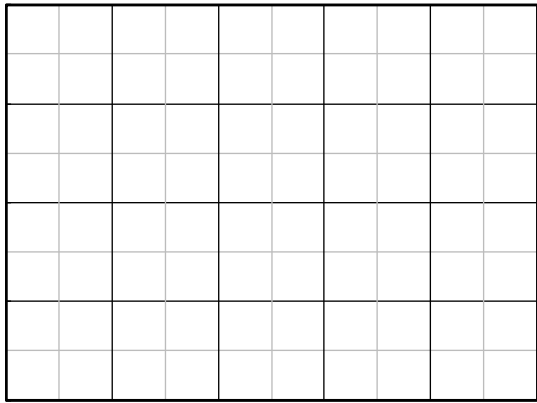


Figure 9. Normalized breakdown voltage

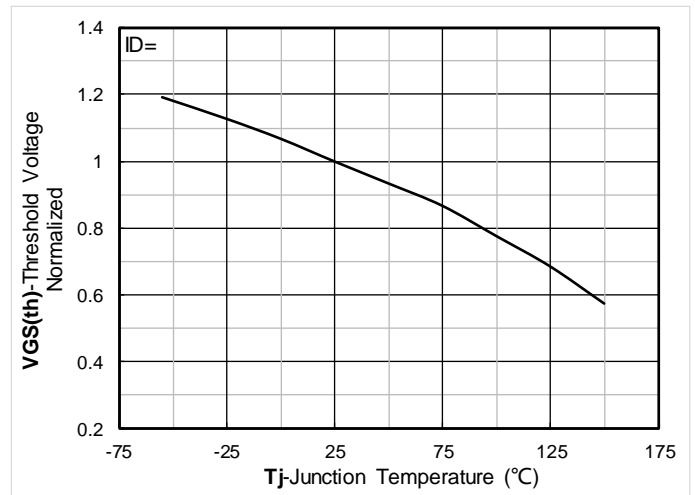


Figure 10. Normalized Threshold voltage

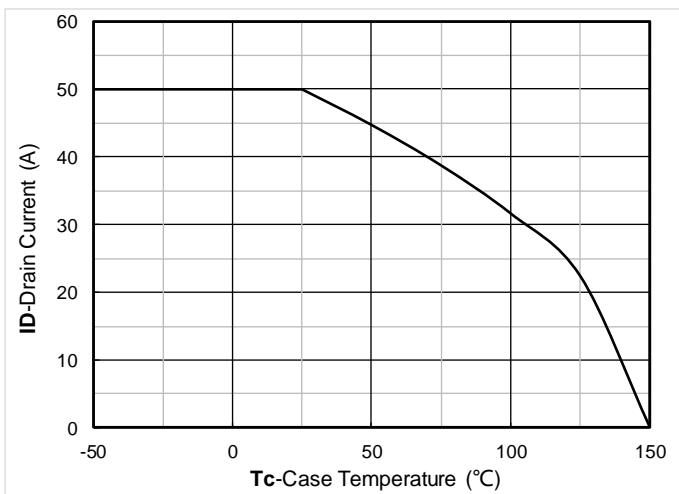
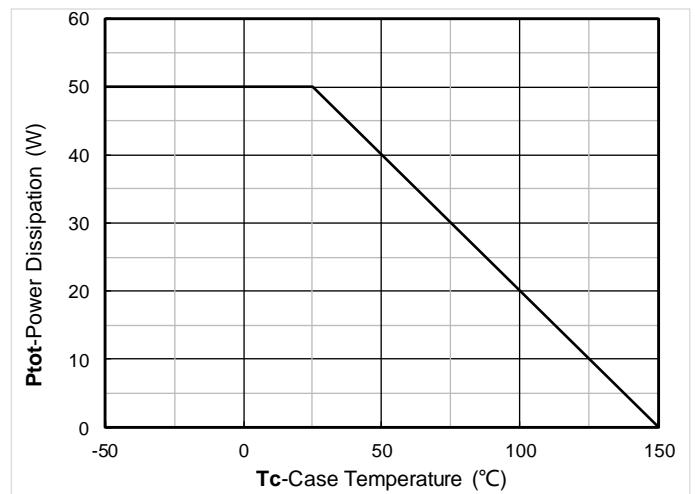


Figure 11. Current dissipation





YJQ50N04B

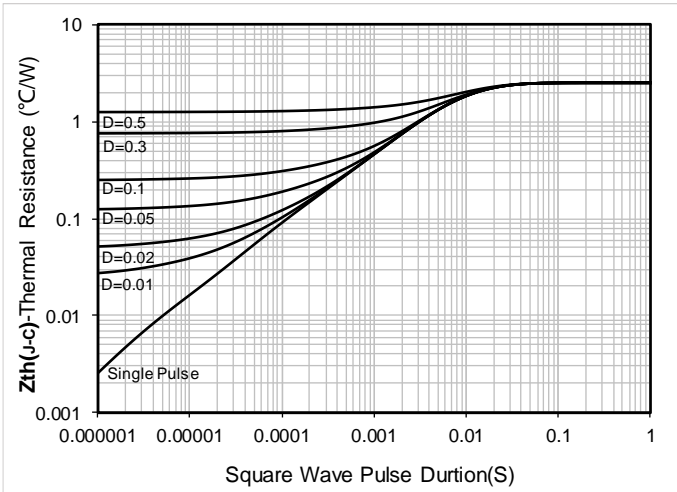


Figure 13. Maximum Transient Thermal Impedance

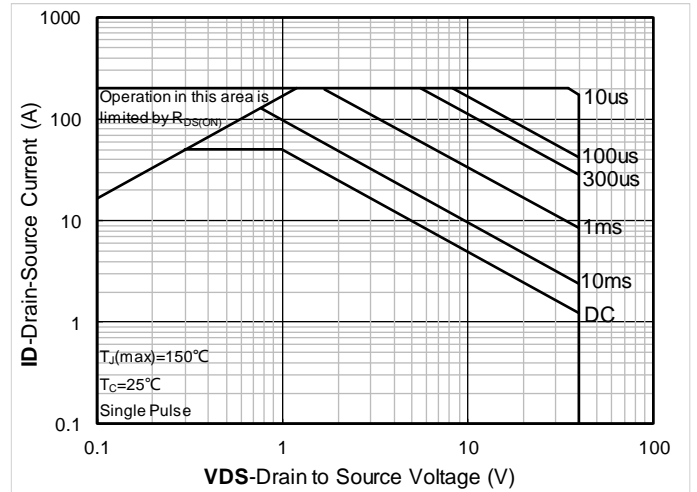


Figure 14. Safe Operation Area

Test Circuits & Waveforms

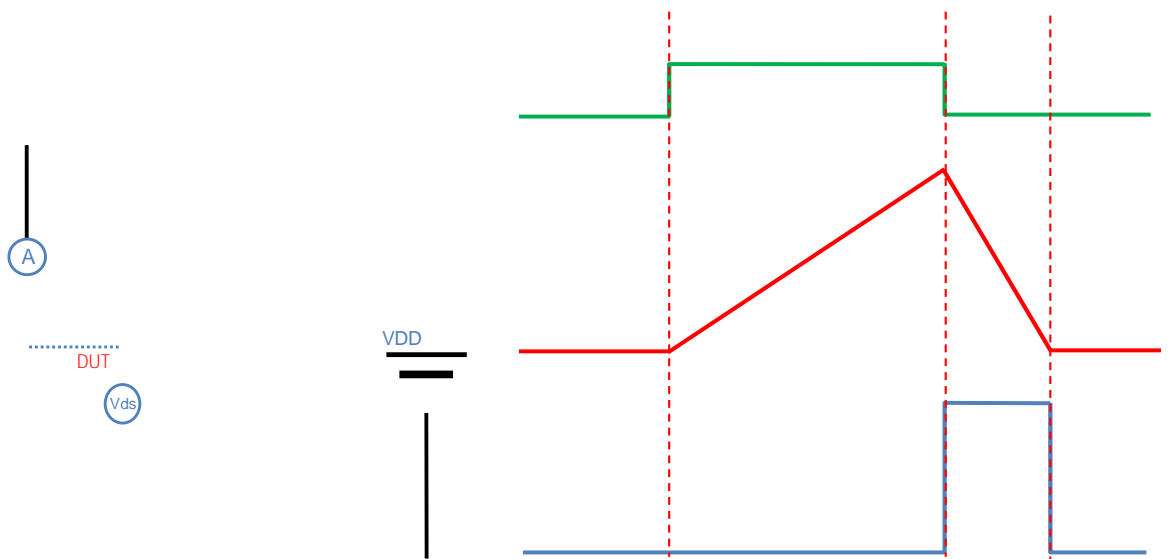


Figure A. Unclamped Inductive Switching (UIS) Test Circuit & Waveform

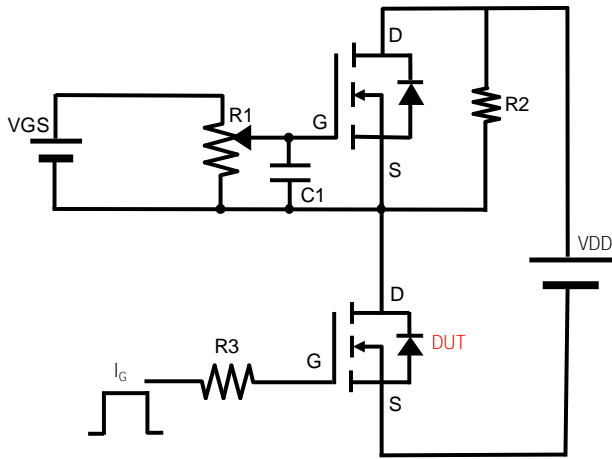


Figure B. Gate Charge Test Circuit & Waveform

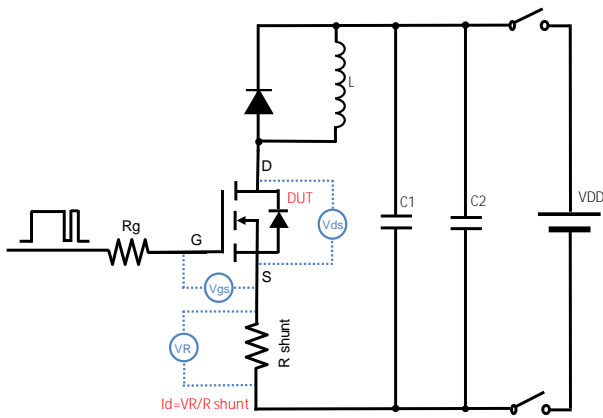


Figure C. Resistive Switching Test Circuit & Waveform

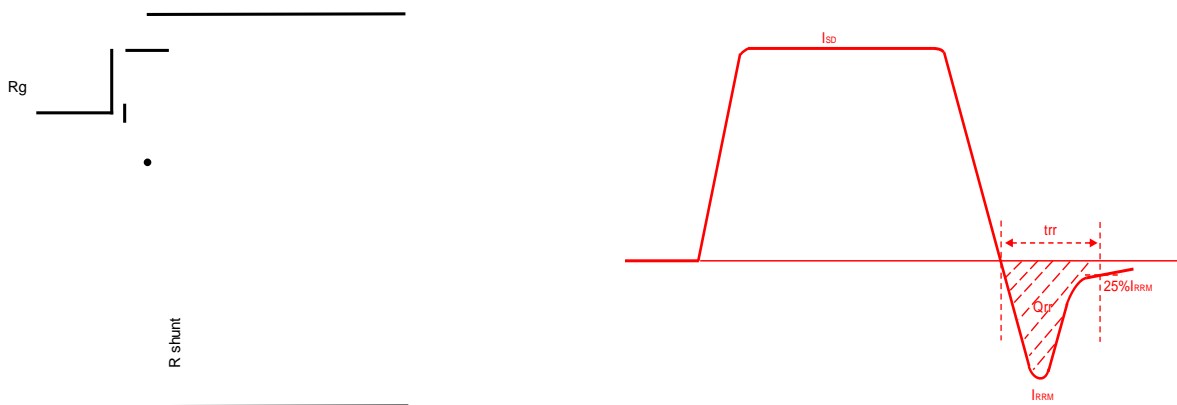
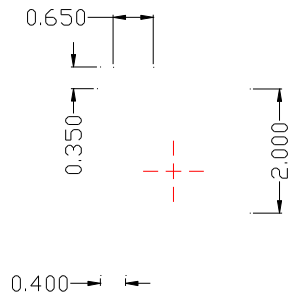
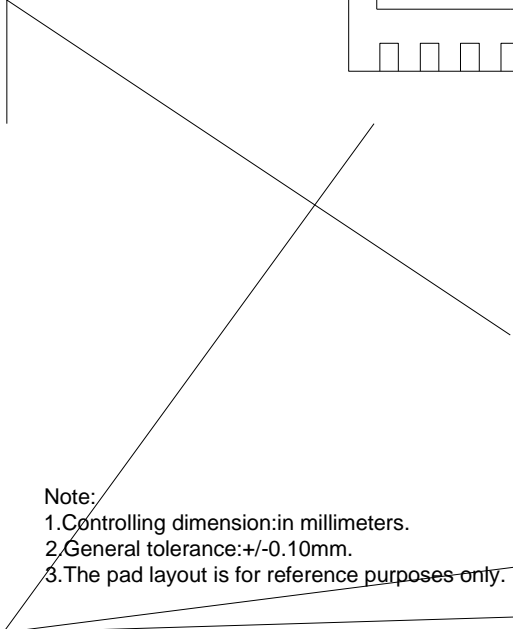
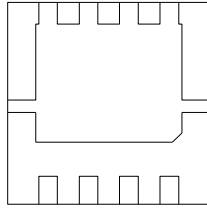


Figure D. Diode Recovery Test Circuit & Waveform



DFN3333-8L Package information



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

Suggested Solder Pad Layout
Top View



YJQ50N04B

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> , or consult your nearest Yangjie's sales office for further assistance.