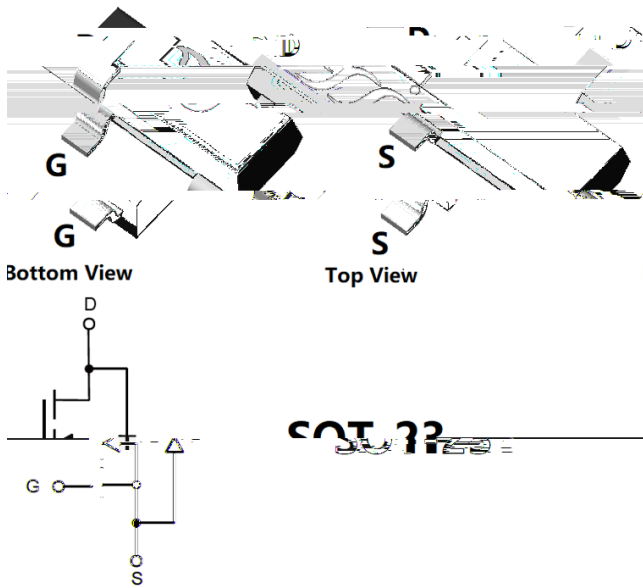




## N-Channel Enhancement Mode Field Effect Transistor



## Product Summary

$V_{DS}$	30V
$I_D$	4A
$R_{DS(ON)}$ (at $V_{GS}=10V$ )	36m
$R_{DS(ON)}$ (at $V_{GS}=4.5V$ )	60m

## General Description

Trench Power MV MOSFET technology  
 High Power and current handling capability  
 Moisture Sensitivity Level 1  
 Epoxy Meets UL 94 V-0 Flammability Rating  
 Halogen Free

## Applications

PWM application  
 Load switch

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

Parameter		Symbol	Limit	Unit
Drain-source Voltage		$V_{DS}$	30	V
Gate-source Voltage		$V_{GS}$	$\pm 20$	V
Drain Current	$T_A=25$	$I_D$	4	A
	$T_A=100$		2.5	
Pulsed Drain Current <sup>A</sup>		$I_{DM}$	20	A
Total Power Dissipation <sup>B</sup>	$T_A=25$	$P_D$	1	W
	$T_A=100$		0.4	
Junction and Storage Temperature Range		$T_J, T_{STG}$	-55 +150	

## Thermal resistance

Parameter		Symbol	Typ	Max	Units
Thermal Resistance Junction-to-Ambient <sup>C</sup>	Steady-State	$R_{JA}$	100	125	/W

## Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJL2304B	F2	2304B.	3000	30000	120000	7" reel



# YJL2304B

RECOMMEND  
YJL2304A  
FOR NEW DESIGN

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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	30	-	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=30V, V_{GS}=0V$	-	-	1	$\mu A$
		$V_{DS}=30V, V_{GS}=0V, T_J=150$	-	-	100	
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.6	2.2	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=4A$	-	28	36	m
		$V_{GS}=4.5V, I_D=3A$	-	46	60	
Diode Forward Voltage	$V_{SD}$	$I_S=4A, V_{GS}=0V$	-	0.9	1.2	V
Gate resistance	$R_G$					



Typical Electrical and Thermal Characteristics Diagrams

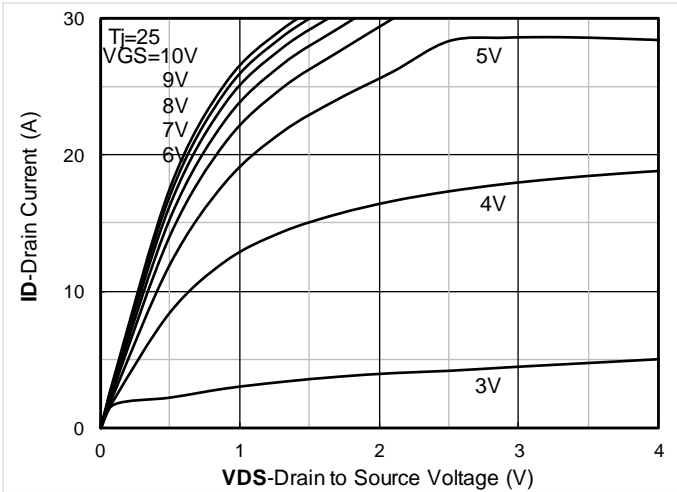


Figure 1. Output Characteristics

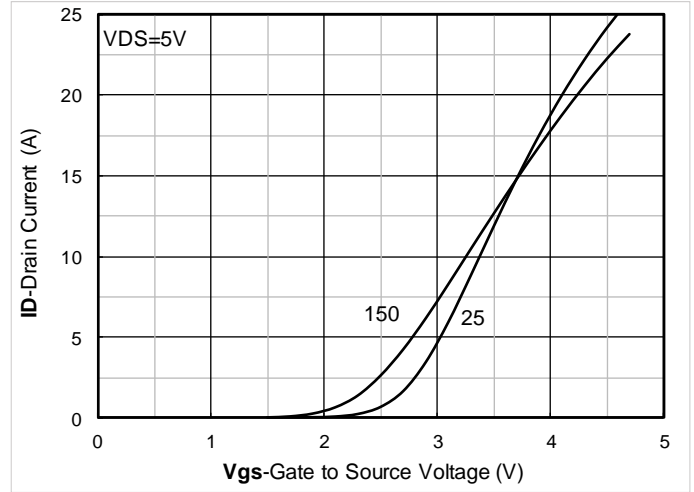


Figure 2. Transfer Characteristics

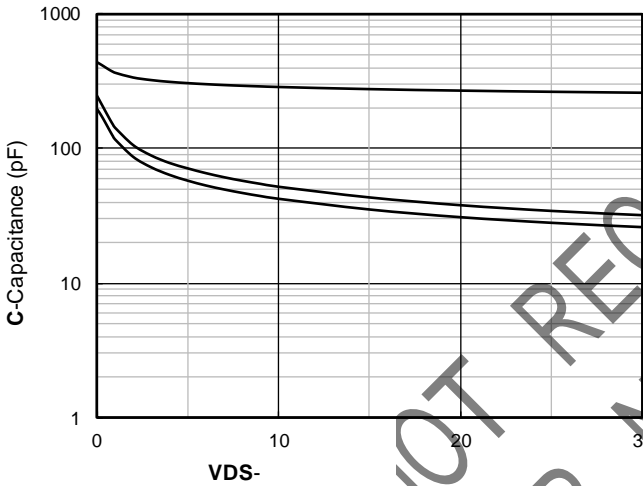


Figure 3. Capacitance Characteristics

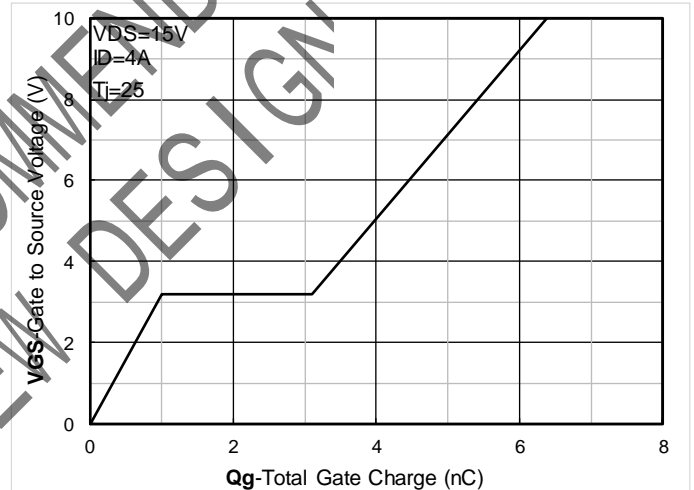


Figure 4. Gate Charge

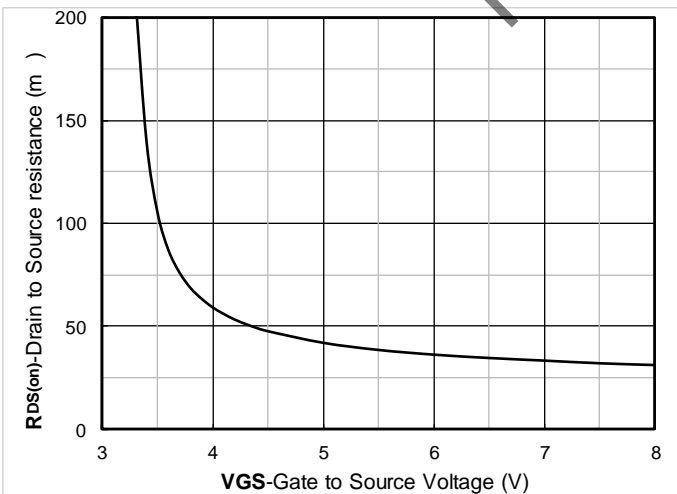


Figure 5. On-Resistance vs Gate to Source Voltage

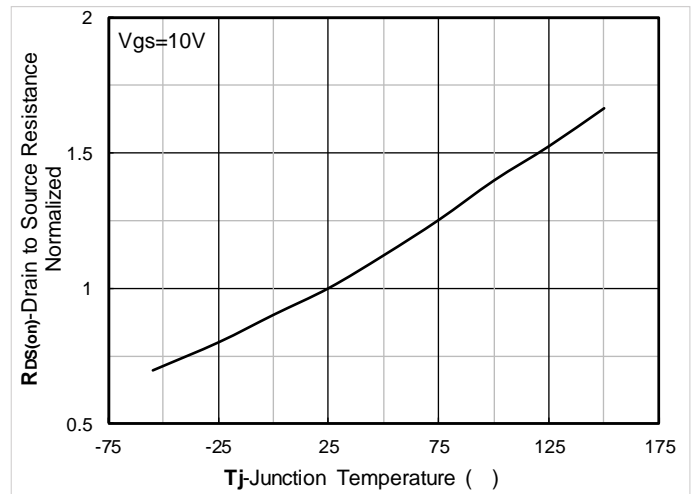


Figure 6. Normalized On-Resistance

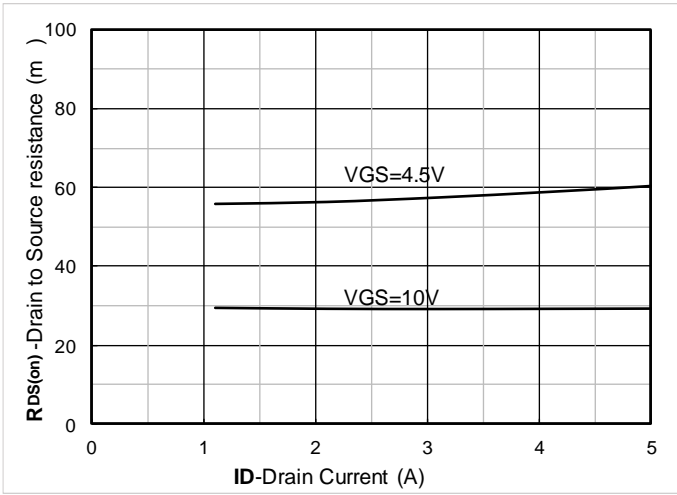


Figure 7. RDS(on) VS Drain Current

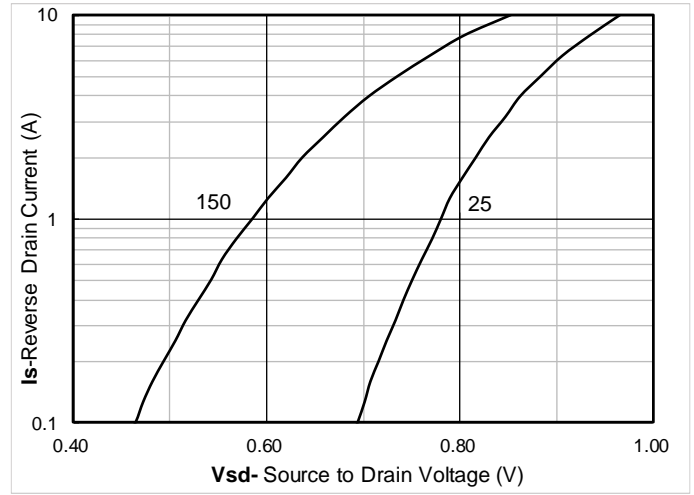


Figure 8. Forward characteristics of reverse diode

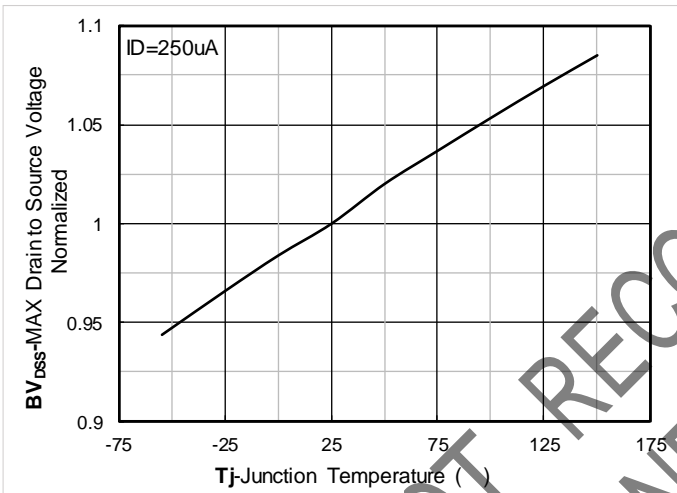


Figure 9. Normalized breakdown voltage

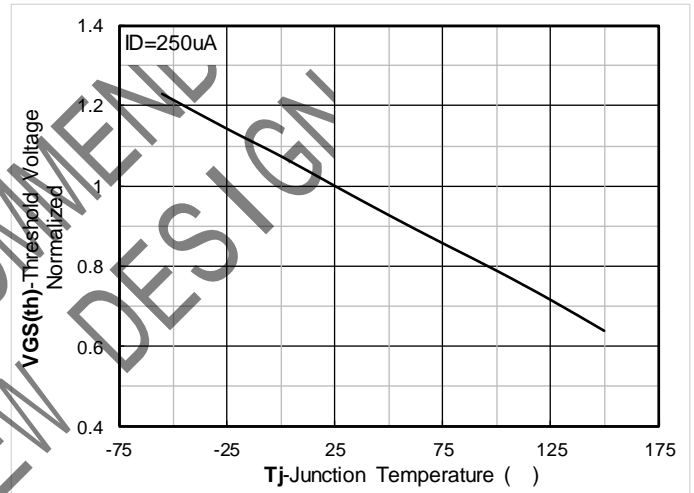


Figure 10. Normalized Threshold voltage

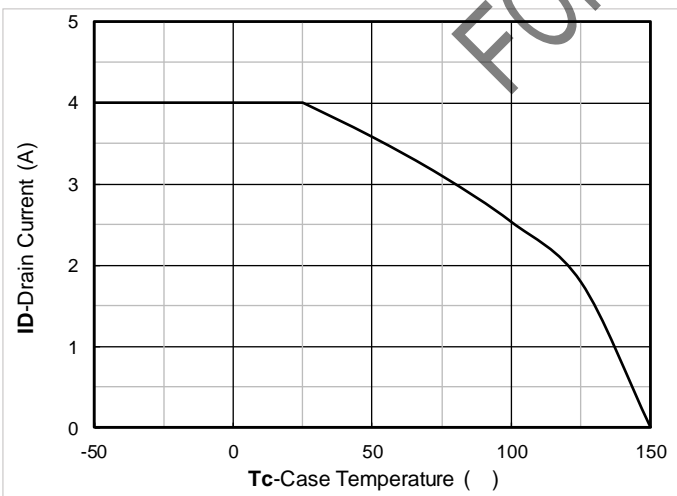


Figure 11. Current dissipation

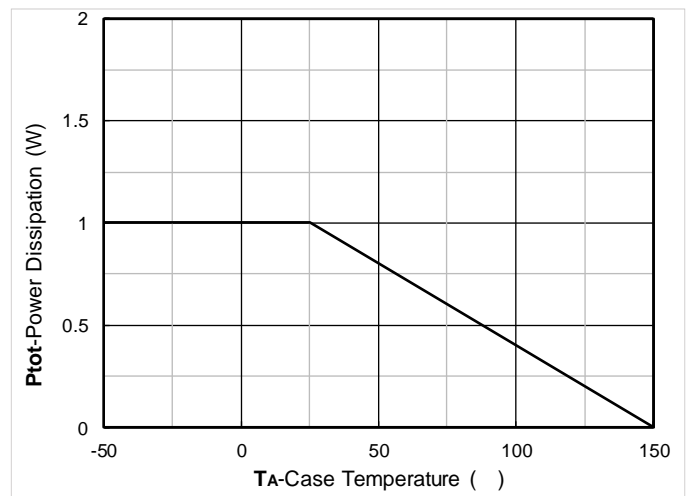


Figure 12. Power dissipation

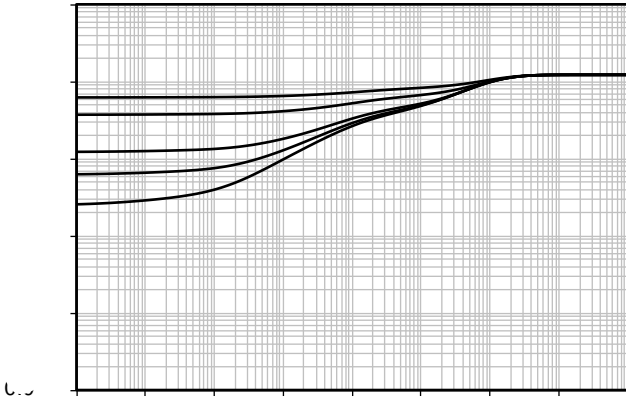


Figure 13. Maximum Transient Thermal Impedance

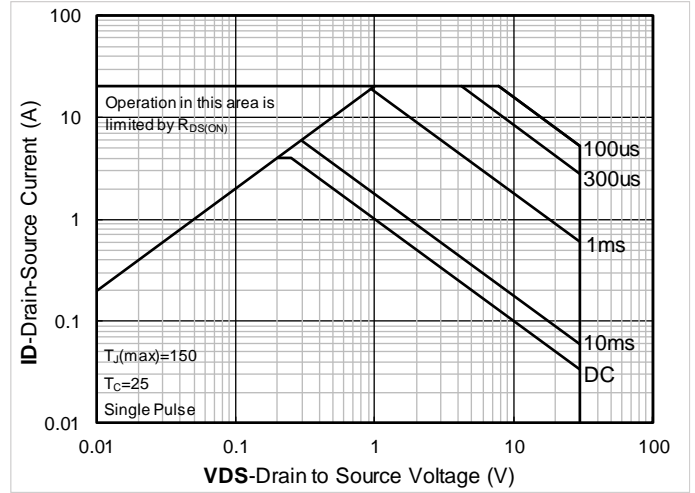


Figure 14. Safe Operation Area

## Test Circuits & Waveforms

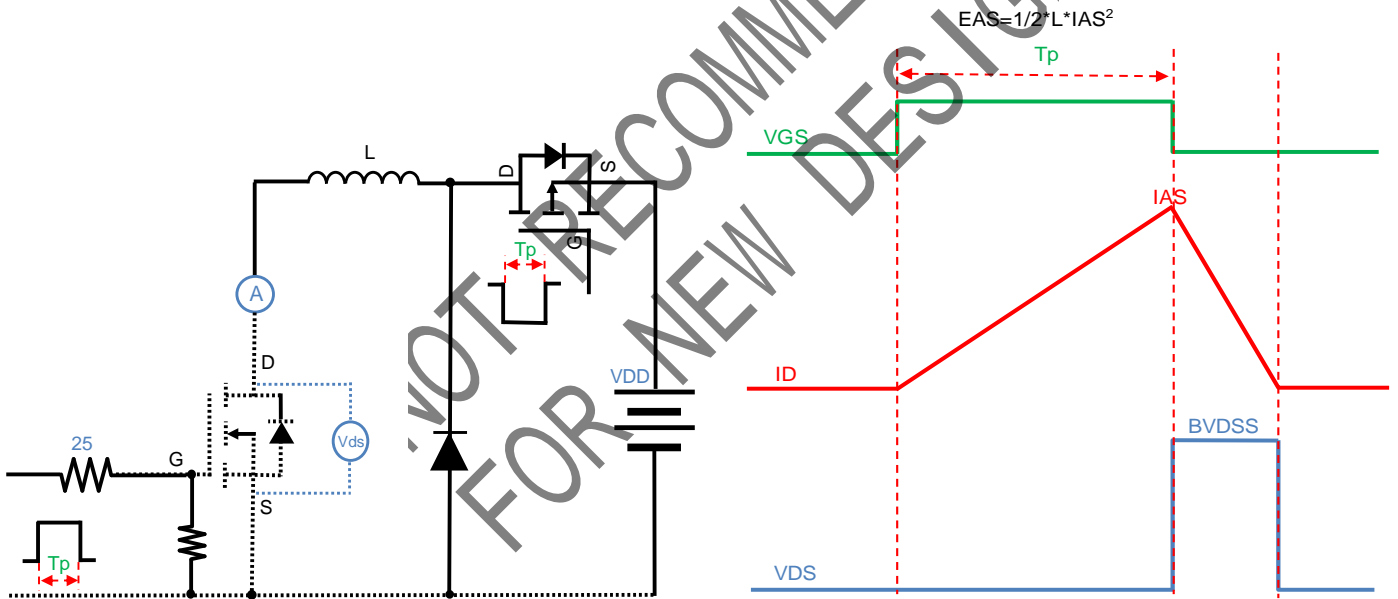


Figure A. Unclamped Inductive Switching (UIS) Test Circuit & Waveform

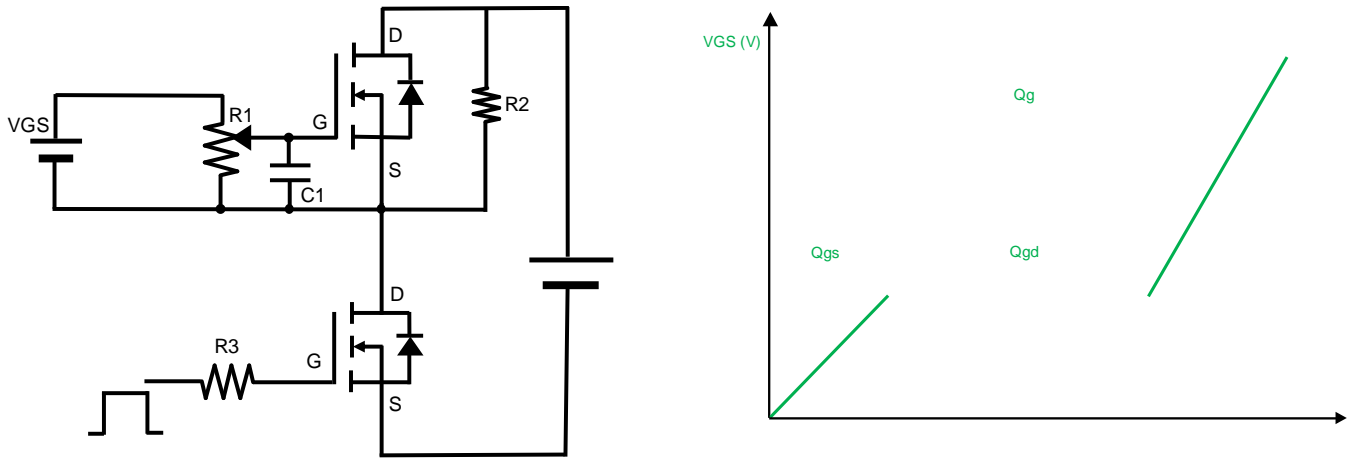


Figure B. Gate Charge Test Circuit & Waveform

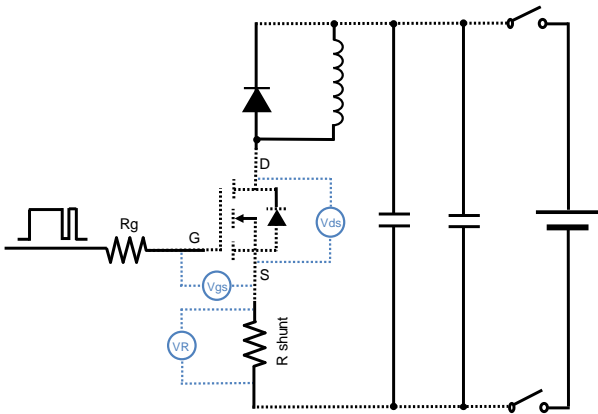


Figure C. Resistive Switching Test Circuit & Waveform

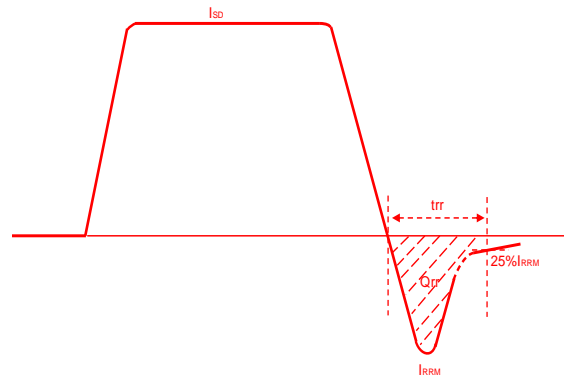
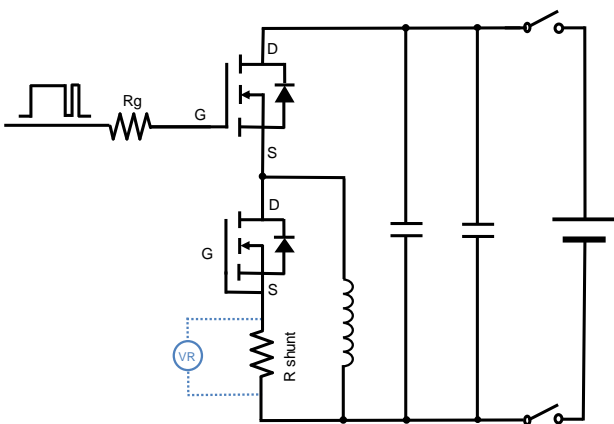


Figure D. Diode Recovery  $TT0 \leq 53\mu s$  e

# YJL2304B

---

RECOMMEND  
YJL2304A  
FOR NEW DESIGN



**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.

NOT RECOMMEND  
FOR NEW DESIGN