



## P-Channel Enhancement Mode Field Effect Transistor

### Product Summary

$V_{DS}$	-40V
$I_D$	-3A
$R_{DS(ON)}$ ( at $V_{GS}=-10V$ )	80m
$R_{DS(ON)}$ ( at $V_{GS}=-4.5V$ )	110m

### General Description

Trench Power LV MOSFET technology  
High Speed switching  
Halogen Free



# YJL03P04A

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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=-$	-40	-	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-40V, V_{GS}=0V$	-	-	-1	
		$V_{DS}=-40V, V_{GS}=0V, T_J=150$	-	-	-100	
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-$	-1	-1.5	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-3A$	-	61	80	
		$V_{GS}=-4.5V, I_D=-2A$	-	81	110	
Diode Forward Voltage	$V_{SD}$	$I_S=-3A, V_{GS}=0V$	-	-0.85	-1.2	V
Gate resistance	$R_G$	$f=1MHz$	-	20	-	
Maximum Body-Diode Continuous Current	$I_S$		-	-	-3	A
<b>Dynamic Parameters</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=-20V, V_{GS}=0V, f=1MHz$	-	400	-	pF
Output Capacitance	$C_{oss}$		-	50	-	
Reverse Transfer Capacitance	$C_{rss}$		-	40	-	
<b>Switching Parameters</b>						
Total Gate Charge	$Q_g$	$V_{GS}=-10V, V_{DS}=-20V, I_D=-3A$	-	8.5	-	nC
Gate-Source Charge	$Q_{gs}$		-	1	-	
Gate-Drain Charge	$Q_{gd}$		-	2	-	
Reverse Recovery Charge	$Q_{rr}$	$I_F=-3A, di/dt=100A/us$	-	31	-	nC
Reverse Recovery Time	$t_{rr}$		-	34	-	ns

Turn-on Delay Time

## Typical Electrical and Thermal Characteristics Diagrams

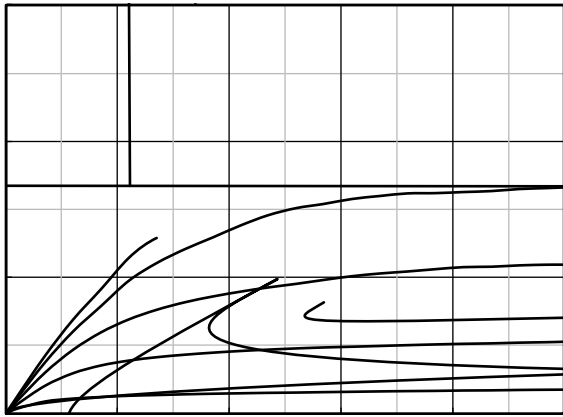


Figure 1. Output Characteristics

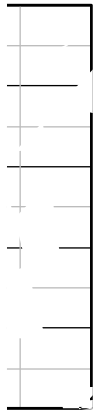


Figure 2. Transfer Characteristics

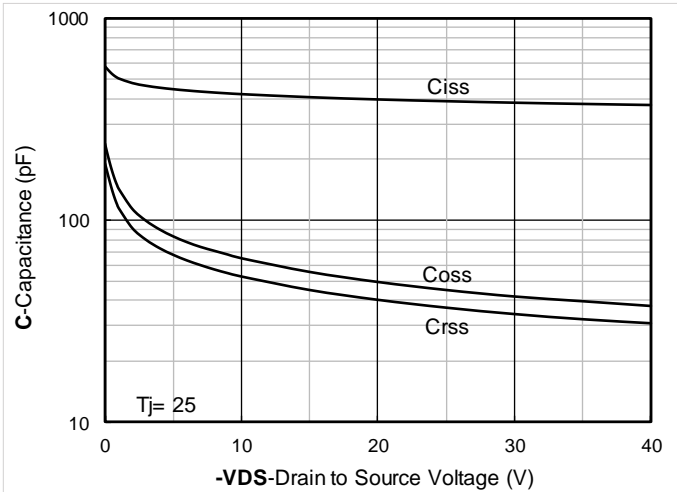


Figure 3. Capacitance Characteristics

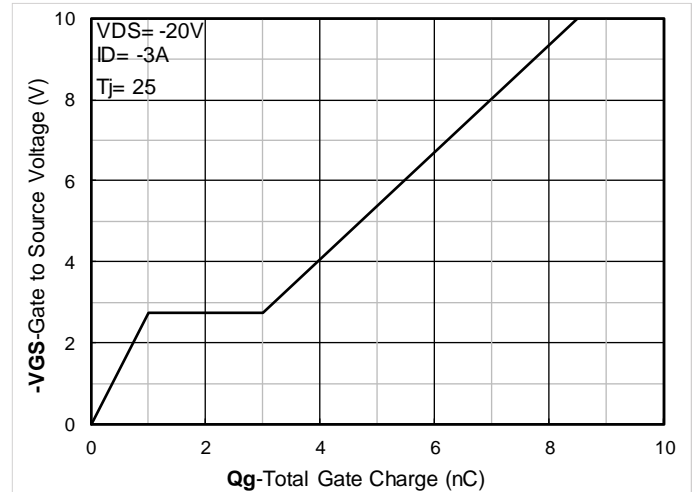


Figure 4. Gate Charge

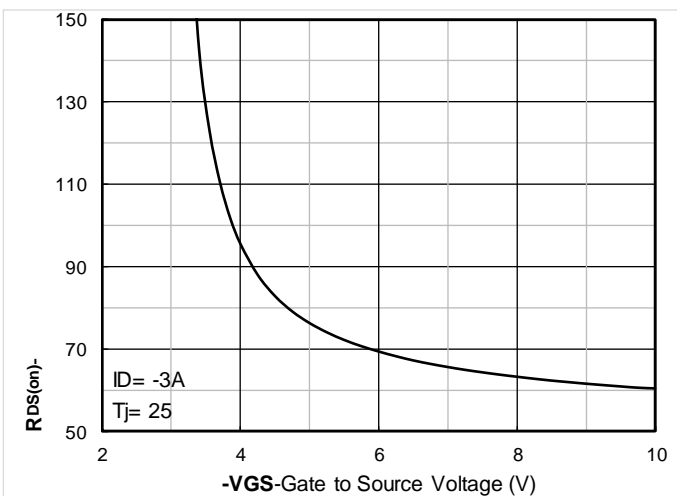


Figure 5. On-Resistance vs Gate to Source Voltage

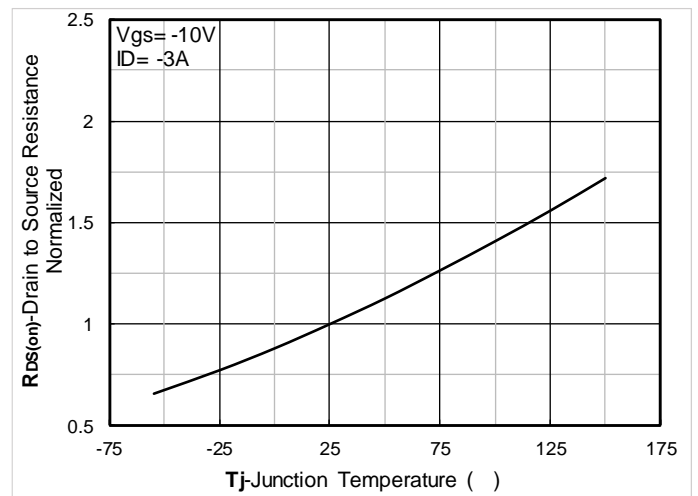


Figure 6. Normalized On-Resistance



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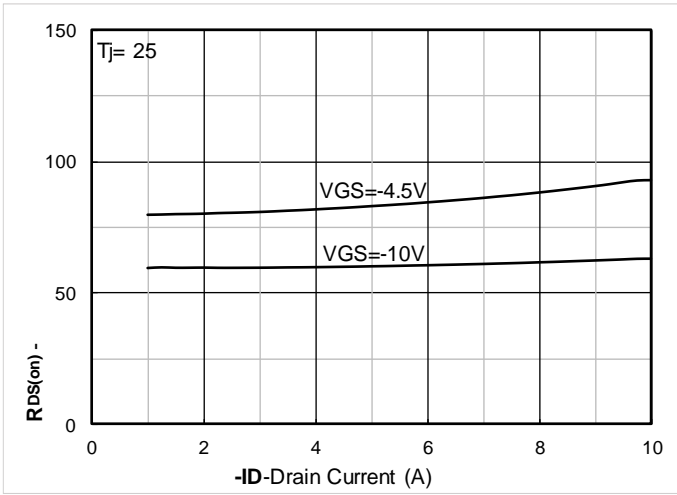


Figure 7. RDS(on) VS Drain Current

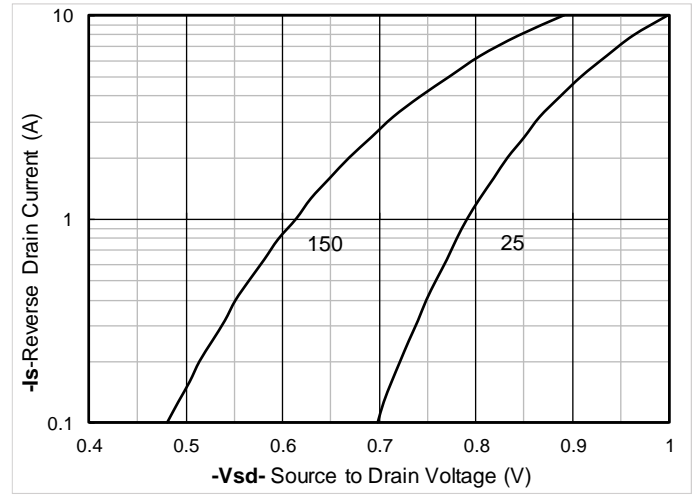


Figure 8. Forward characteristics of reverse diode

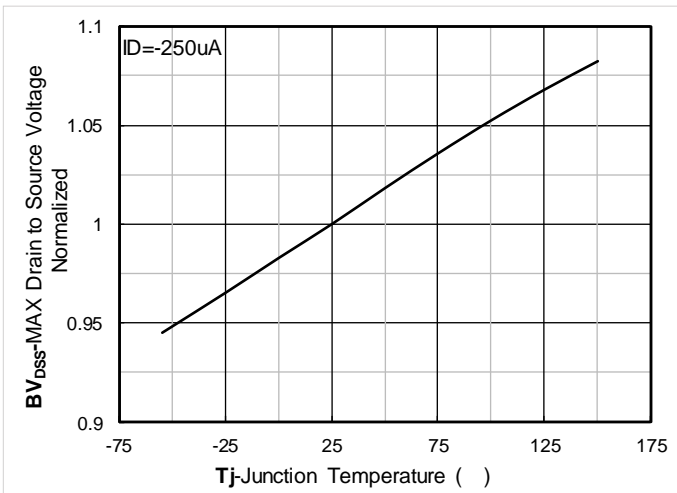


Figure 9. Normalized breakdown voltage

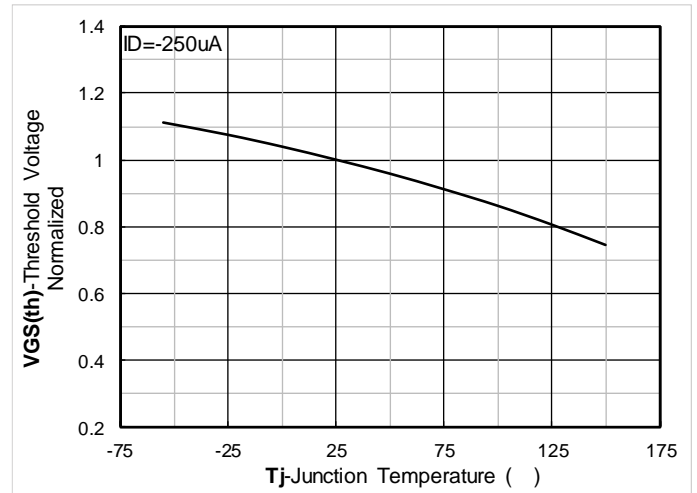


Figure 10. Normalized Threshold voltage

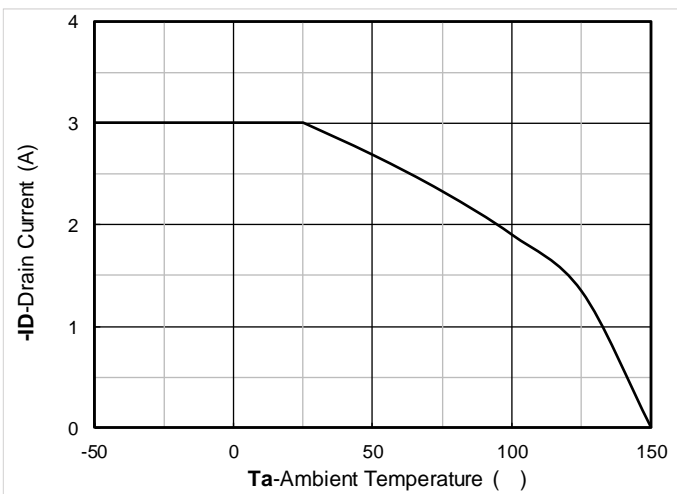


Figure 11. Current dissipation

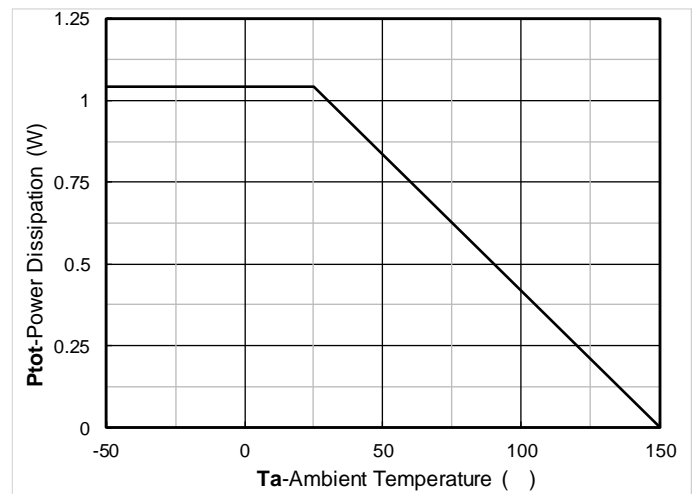


Figure 12. Power dissipation



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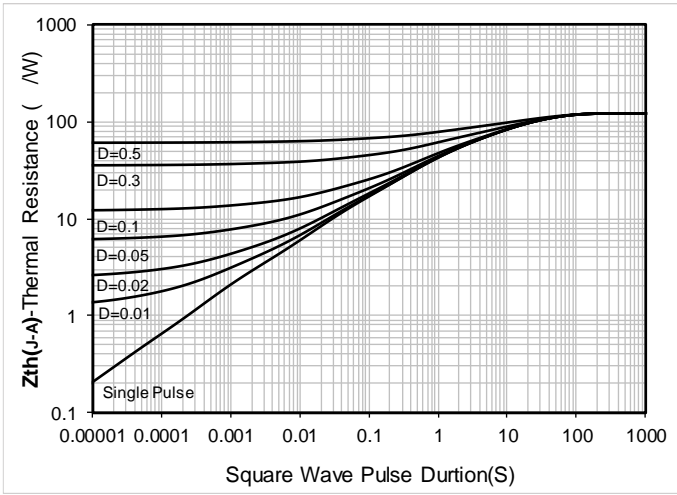


Figure 13. Maximum Transient Thermal Impedance

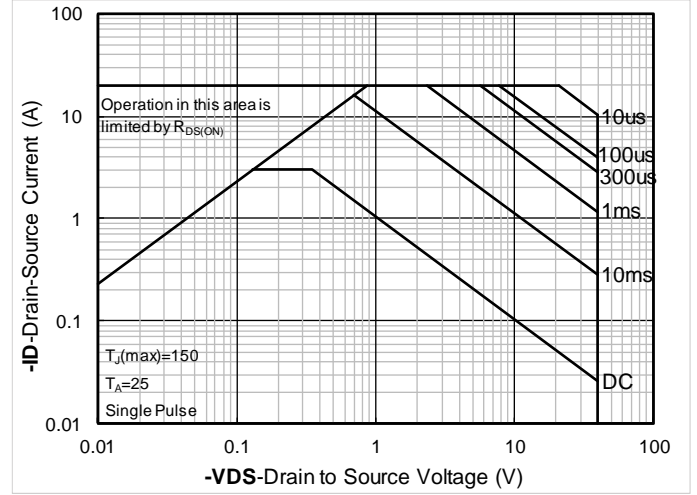


Figure 14. Safe Operation Area





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