



# YJL3139KAT

## P-Channel Enhancement Mode Field Effect Transistor

### Product Summary

$V_{DS}$	-20 V
$I_D$	-0.5 A
$R_{DS(ON)}$ ( at $V_{GS}=-4.5V$ )	<850 m
$R_{DS(ON)}$ ( at $V_{GS}=-2.5V$ )	<1200 m
$R_{DS(ON)}$ ( at $V_{GS}=-1.8V$ )	<2000 m

### General Description

Trench Power LV MOSFET technology  
Extremely low switching loss  
Excellent stability and uniformity  
Low R<sub>DS(ON)</sub> and high K<sub>d</sub>  
Epoxy Meets UL 94 V-0 Flammability Rating  
Halogen Free

### Applications

PWM application  
On-off and pulse width modulation

### Absolute Maximum Ratings ( $T_A=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Limit	Unit	
Drain-source Voltage	$V_{DS}$	-20	V	
Gate-source Voltage	$V_{GS}$	$\pm 10$	V	
Drain Current	$I_D$	$T_A=25$	-0.5	A
		$T_A=100$	-0.3	
Pulsed Drain Current <sup>A</sup>	$I_{DM}$	-2.5	A	
Total Power Dissipation <sup>B</sup>	$P_D$	$T_A=25$	0.28	W
		$T_A=100$	0.1	
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55~+150		



**Electrical Characteristics** ( $T_J=25^{\circ}\text{C}$  unless otherwise noted)





## Typical Electrical and Thermal Characteristics Diagrams

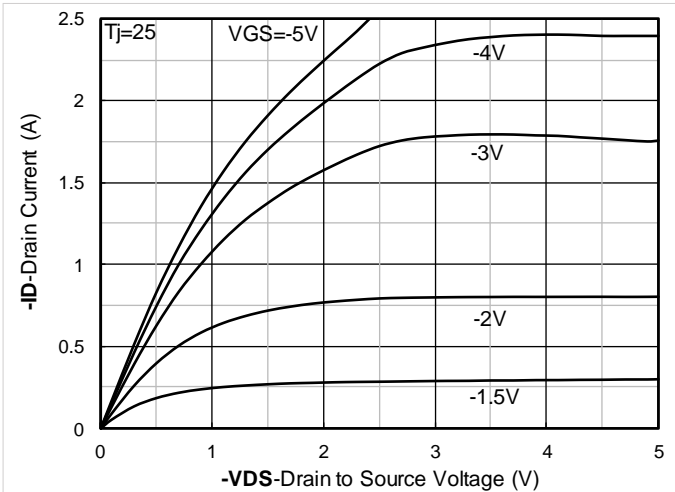


Figure 1. Output Characteristics

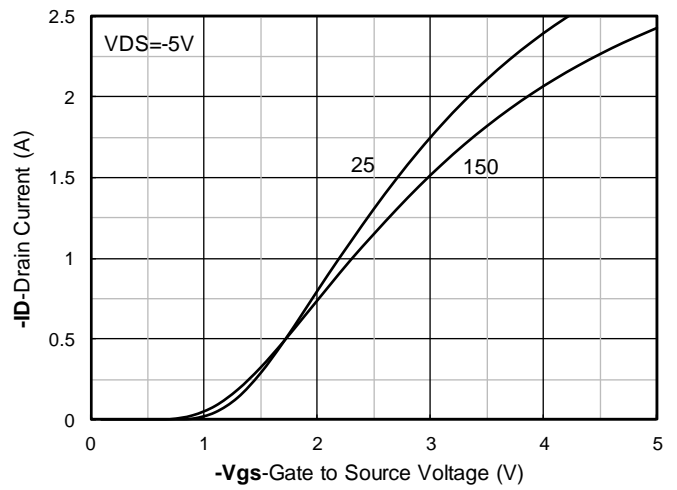


Figure 2. Transfer Characteristics

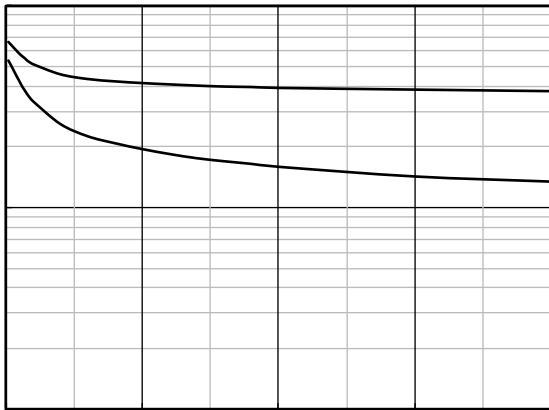


Figure 3. Capacitance Characteristics

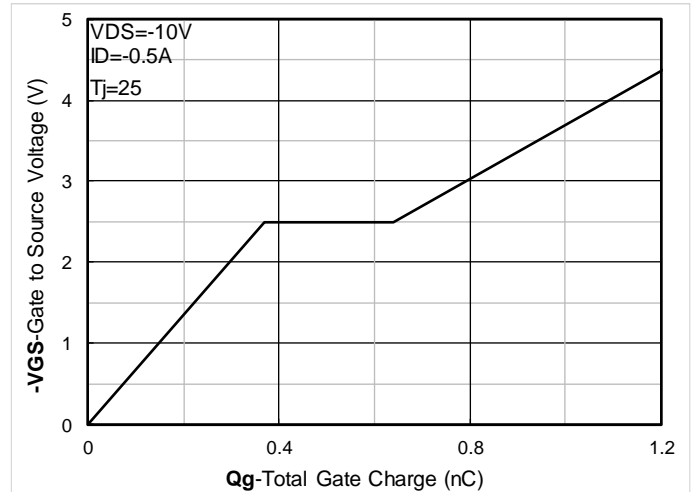


Figure 4. Gate Charge

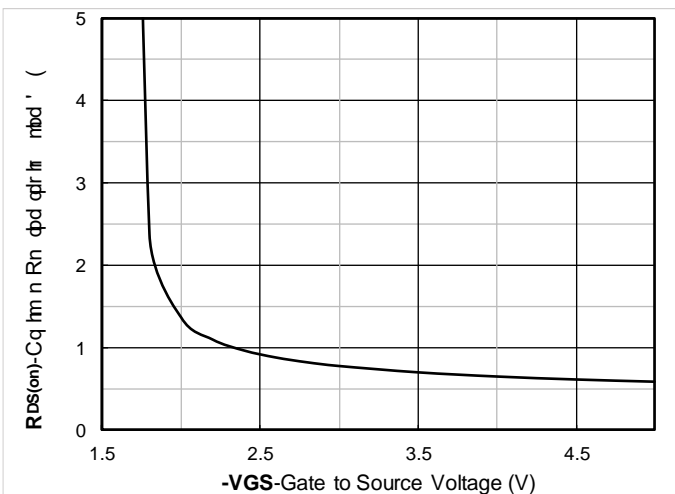


Figure 5. On-Resistance vs Gate to Source Voltage

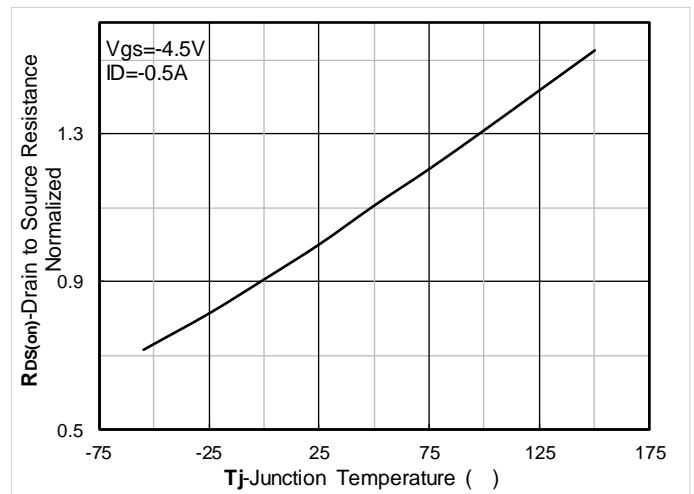


Figure 6. Normalized On-Resistance



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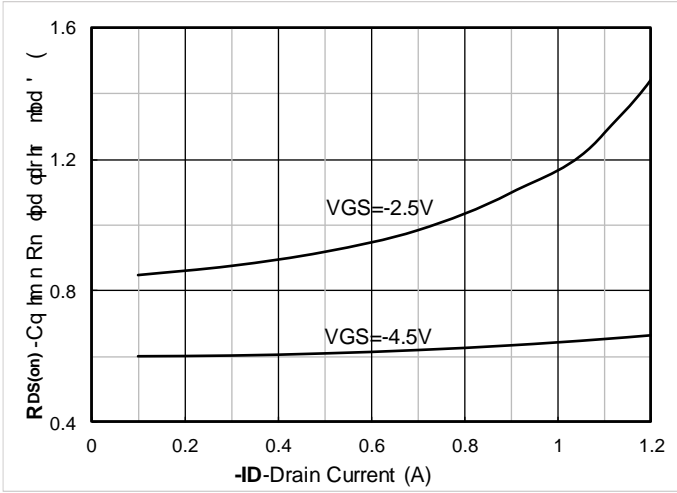


Figure 7. RDS(on) VS Drain Current

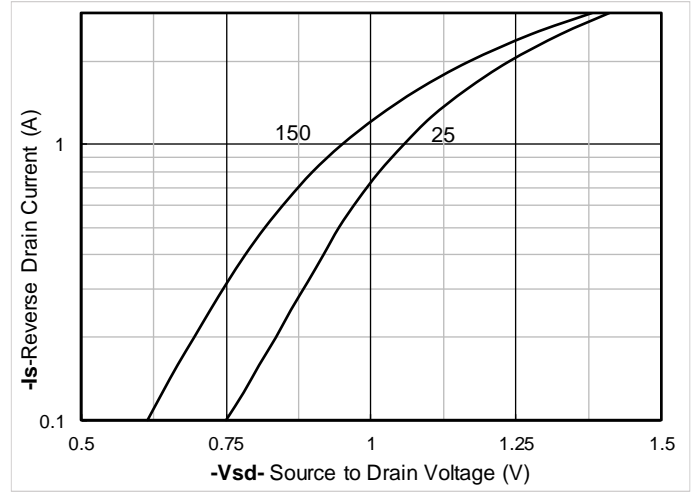


Figure 8. Forward characteristics of reverse diode

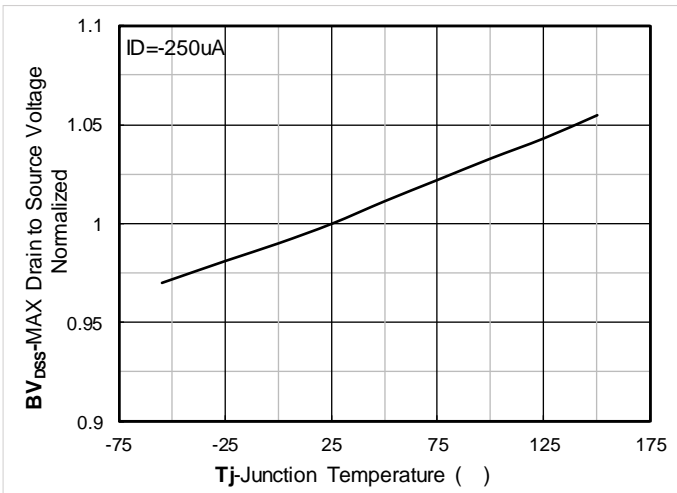


Figure 9. Normalized breakdown voltage

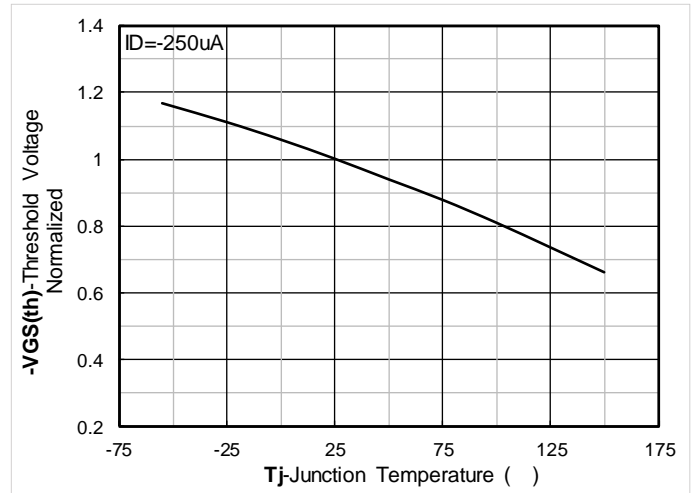


Figure 10. Normalized Threshold voltage

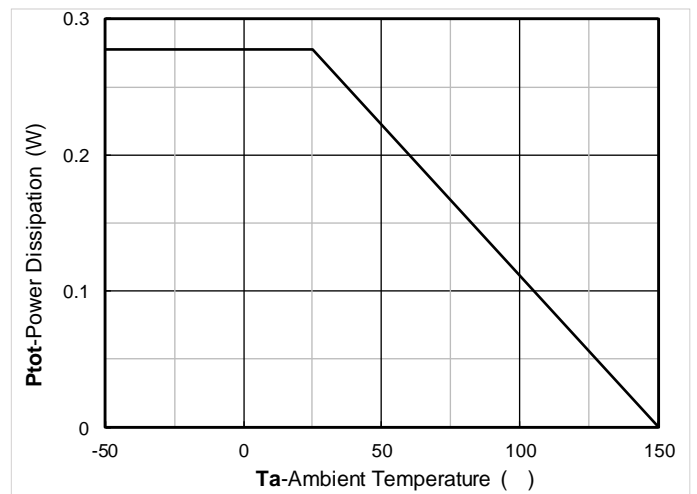


Figure 11. Current dissipation

Figure 12. Power dissipation



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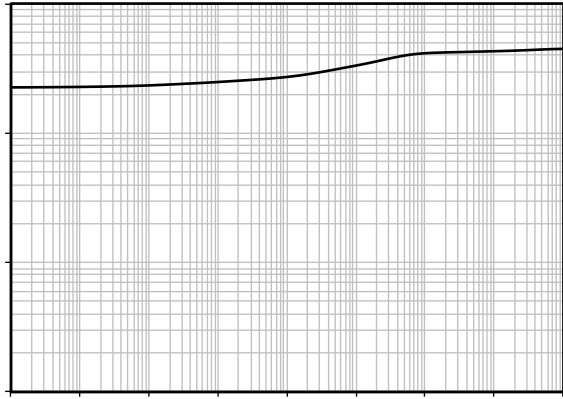


Figure 13. Maximum Transient Thermal Impedance

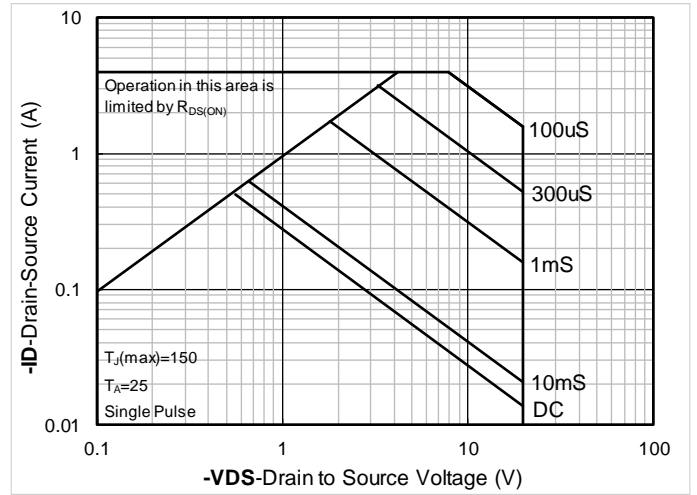
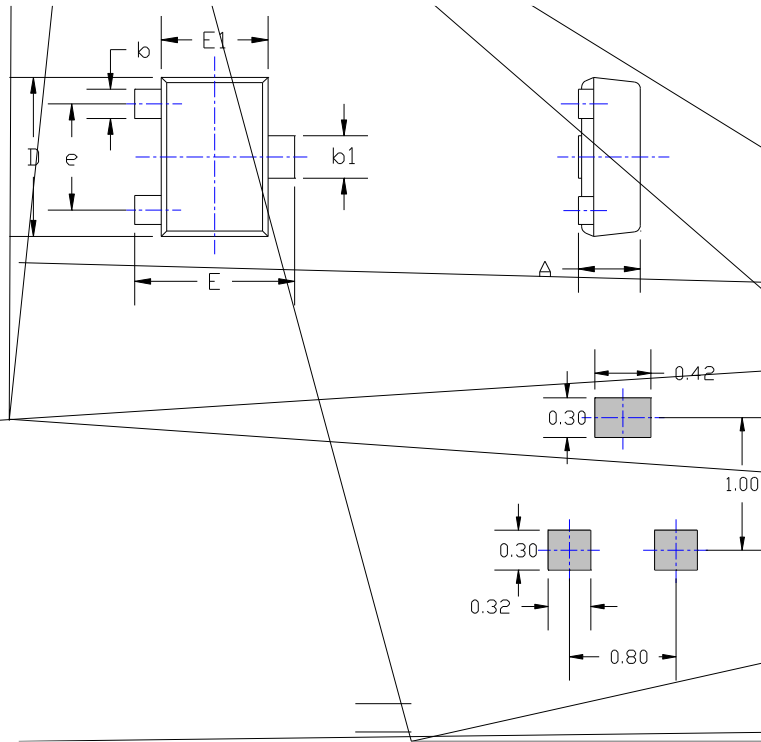


Figure 14. Safe Operation Area



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## SOT-723 Package information



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.017	0.022	0.430	0.550
A1	0.000	0.002	0.000	0.050
b	0.007	0.011	0.170	0.270
b1	0.011	0.015	0.270	
c	0.003			
D	0.045	0.049	1.150	1.250
E	0.045	0.049	1.150	1.250
E1	0.030	0.033	0.750	0.850
e	0.031TYP.		0.800TYP.	
θ	7°REF.		7°REF.	

NOTE:  
1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.  
2. TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.  
3. THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.



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