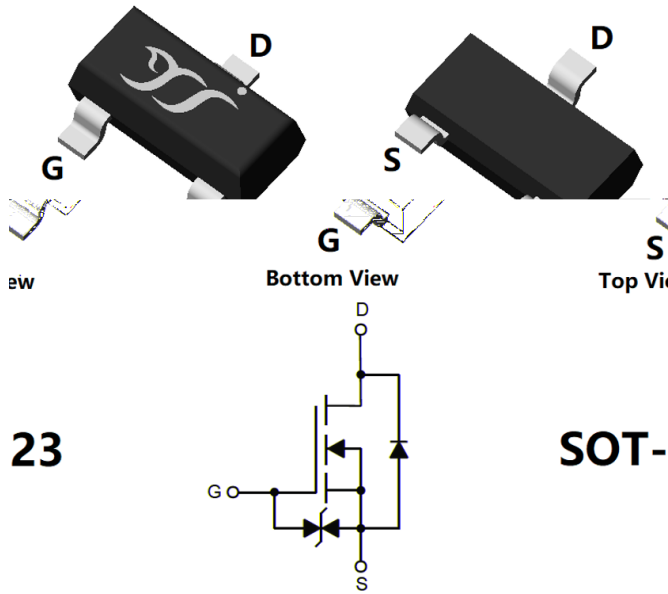


## N-Channel Enhancement Mode Field Effect Transistor



23

SOT-

### Product Summary

$V_{DS}$	20 V
$I_D$	0.9 A
$R_{DS(ON)}$ (at $V_{GS}=4.5V$ )	300 mohm
$R_{DS(ON)}$ (at $V_{GS}=2.5V$ )	400 mohm
$R_{DS(ON)}$ (at $V_{GS}=1.8V$ )	700 mohm
ESD Protected Up to 2.0KV (HBM)	

### General Description

Trench Power LV MOSFET technology  
High Power and current handling capability

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	$V_{DS}$	20	V
Gate-source Voltage	$V_{GS}$	12	V
Drain Current	$I_D$	$T_A=25$ @ Steady State	0.9
		$T_A=70$ @ Steady State	0.7
Pulsed Drain Current <sup>A</sup>	$I_{DM}$	3.5	A
Total Power Dissipation @ $T_A=25$	$P_D$	0.35	W
Thermal Resistance Junction-to-Ambient @ Steady State	$R_{JA}$	357	/W
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 +150	

### Ordering Information

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJL3134KA	F2	34KA.	3000	30000	120000	reel



# YJL3134KA

## Electrical Characteristics (T<sub>J</sub>=25 unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> =250	20			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =20V, V <sub>GS</sub> =0V			1	
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = 10V, V <sub>DS</sub> =0V		2.5	10	
		V <sub>GS</sub> = 8V, V <sub>DS</sub> =0V		500	2000	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> =250	0.35	0.75	1.1	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = 4.5V, I <sub>D</sub> =0.9A		220	300	
		V <sub>GS</sub> = 2.5V, I <sub>D</sub> =0.45A		290	400	
		V <sub>GS</sub> = 1.8V, I <sub>D</sub> =0.2A		420	700	
Diode Forward Voltage <sup>C</sup>	V <sub>SD</sub>	I <sub>S</sub> =0.9A, V <sub>GS</sub> =0V		0.9	1.2	V
Maximum Body-Diode Continuous Current	I <sub>S</sub>				0.9	A
Gate Resistance	R <sub>g</sub>	=1 MHz, Open drain		50		
<b>Dynamic Parameters<sup>B</sup></b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =0V, f=1MHZ		33		pF
Output Capacitance	C <sub>oss</sub>			20		
Reverse Transfer Capacitance	C <sub>rss</sub>			10		
<b>Switching Parameters<sup>B</sup></b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =4.5V, V <sub>DS</sub> =10V, I <sub>D</sub> =0.5A		0.8		nC
Gate Source Charge	Q <sub>gs</sub>			0.3		
Gate Drain Charge	Q <sub>gd</sub>			0.15		
Reverse Recovery Charge	Q <sub>rr</sub>	I <sub>F</sub> =0.5A, di/dt=20A/us		0.4		
Reverse Recovery Time	t <sub>rr</sub>			14.4		
Turn-on Delay Time	t <sub>D(on)</sub>	V <sub>G</sub> =4.5V, V <sub>DD</sub> =10V, R <sub>G</sub> =10Ω, I <sub>D</sub> =500mA		4		ns
Turn-on Rise Time	t <sub>r</sub>			18.8		
Turn-off Delay Time	t <sub>D(off)</sub>			10		
Turn-off Fall Time	t <sub>f</sub>			23		

A. Repetitive Rating: Pulse width limited by maximum junction temperature.

B. These parameters have no way to verify.

C.



■ Typical Performance Characteristics

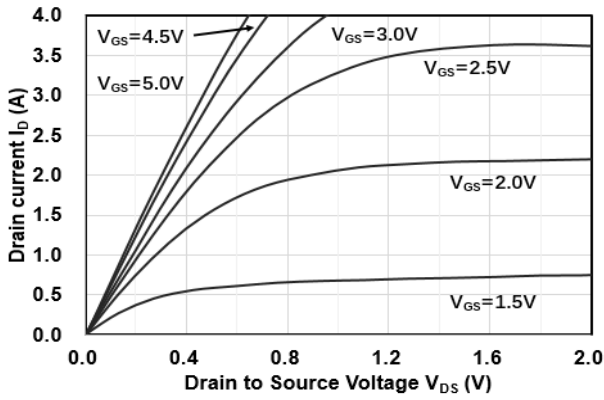


Figure1. Output Characteristics

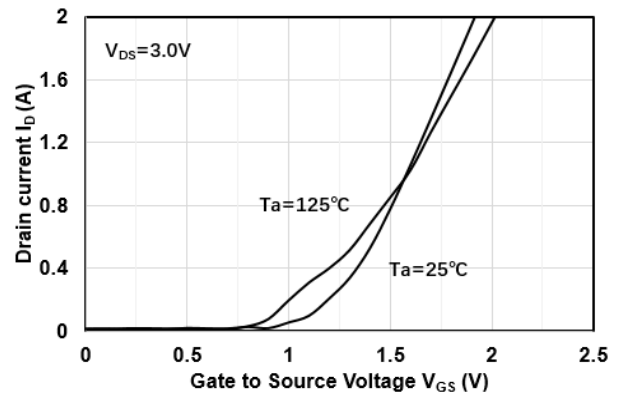


Figure2. Transfer Characteristics

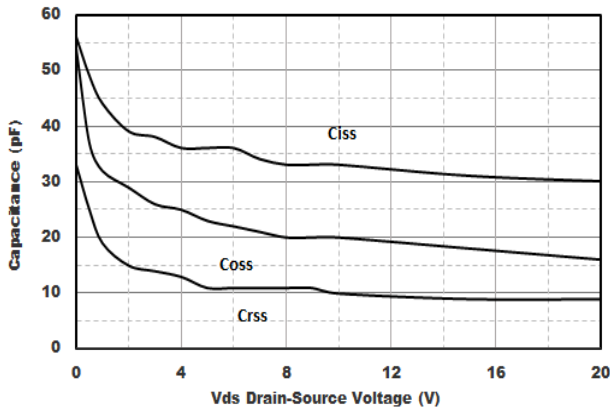


Figure3. Capacitance Characteristics

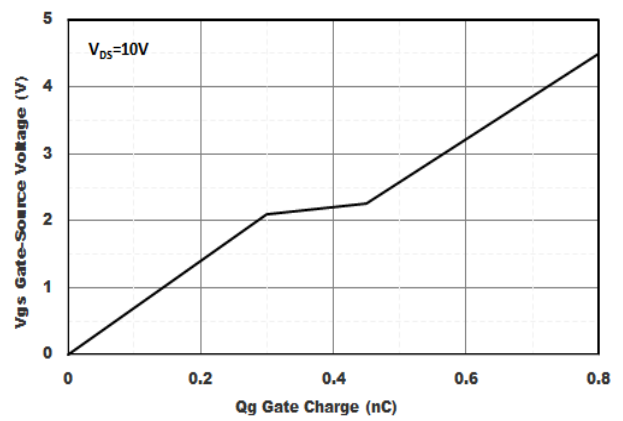


Figure4. Gate Charge

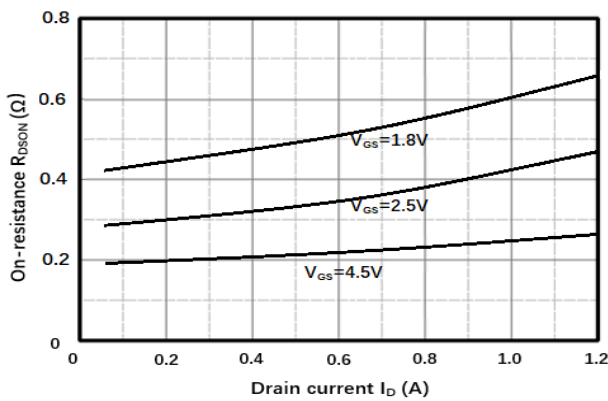


Figure5. Drain-Source on Resistance

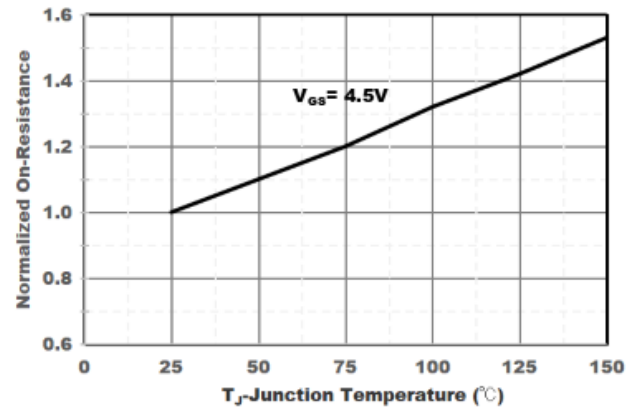


Figure6. Drain-Source on Resistance



# YJL3134KA

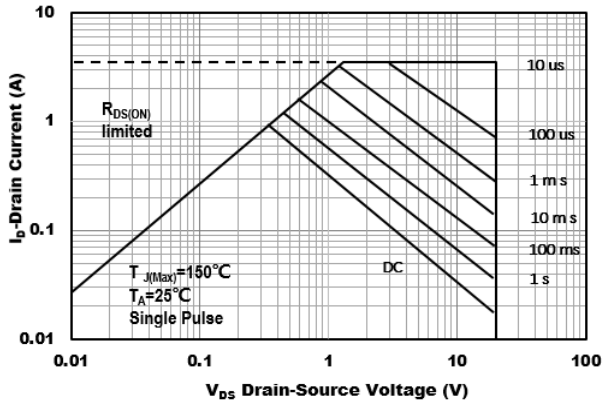


Figure7. Safe Operation Area

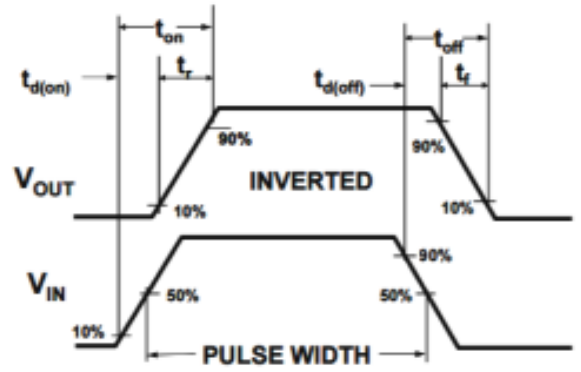
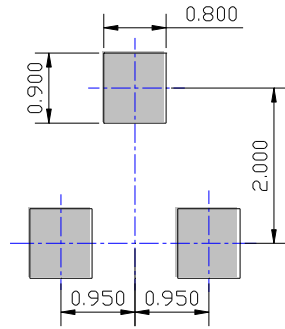
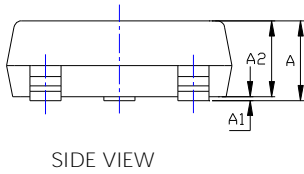
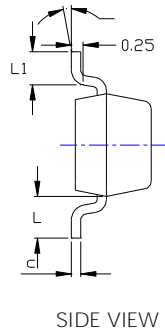
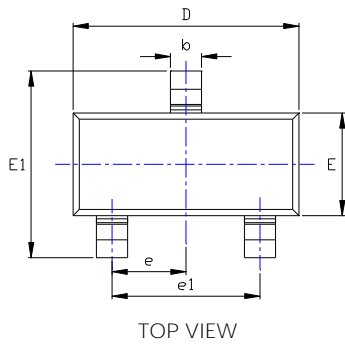


Figure8. Switching wave



# YJL3134KA

## SOT-23 Package information



UNIT mm

DIMENSIONS				
SYMBOL	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.045	0.900	1.150
A1	0.000	0.004	0.000	0.100
A2	0.035	0.041	0.900	1.050
b	0.012	0.020	0.300	0.500
c	0.004	0.008	0.100	0.200
D	0.110	0.118	2.800	3.000
E	0.047	0.055	1.200	1.400
E1	0.089	0.100	2.250	2.550
e	0.037TYP		0.950TYP	
e1	0.071	0.079	1.800	2.000
L	0.022REF		0.550REF	
L1	0.012	0.200	0.300	0.500
	0°	8°	0°	8°

**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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