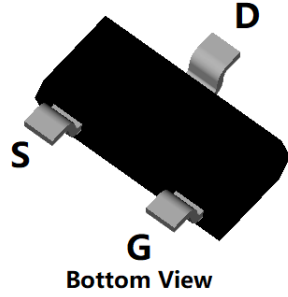
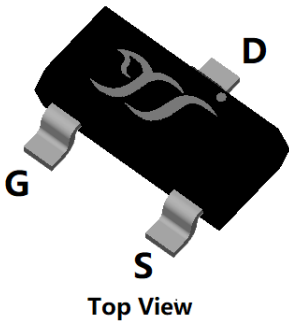
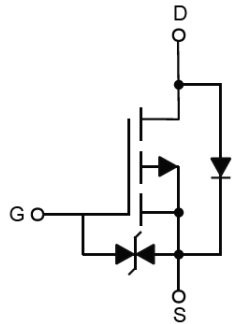


## P-Channel Enhancement Mode Field Effect Transistor



**SOT-23**



### Product Summary

$V_{DS}$	-20V
$I_D$	-0.5A
$R_{DS(ON)}$ ( at $V_{GS}=-4.5V$ )	850 mohm
$R_{DS(ON)}$ ( at $V_{GS}=-2.5V$ )	1200 mohm
$R_{DS(ON)}$ ( at $V_{GS}=-1.8V$ )	2000 mohm
ESD Protected Up to 2.0KV (HBM)	

### General Description

Trench Power LV MOSFET technology  
High Density Cell Design for Low  $R_{DS(ON)}$   
High Speed switching

### Applications

Interfacing, Logic switch  
Load switch  
Power management

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

Parameter	Symbol	Maximum	Unit
Drain-source Voltage	$V_{DS}$	-20	V
Gate-source Voltage	$V_{GS}$	$\pm 12$	V
Drain Current	$I_D$	$T_A=25$ Steady State	-0.5
		$T_A=70$ Steady State	-0.4
Pulsed Drain Current <sup>A</sup>	$I_{DM}$	-2.6	A
Total Power Dissipation @ $T_A=25$ Steady State	$P_D$	0.35	W
Thermal Resistance Junction-to-Ambient @ Steady State <sup>B</sup>	$R_{JA}$	357	/ W
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 +150	

### Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJL3139KA	F2	39KA.	3000	30000	120000	7" reel



# YJL3139KA

## 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> =-250μA	-20			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-20V, V <sub>GS</sub> =0V, T <sub>C</sub> =25			-1	μA
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = ± 10V, V <sub>DS</sub> =0V		± 1.5	± 10	μA
		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> =-250μA	-0.35	-0.62	-1.2	V
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> = -4.5V, I <sub>D</sub> =-0.5A		580	850	m
		V <sub>GS</sub> = -2.5V, I <sub>D</sub> =-0.3A		855	1200	
		V <sub>GS</sub> = -1.8V, I <sub>D</sub> =-0.2A		1350	2000	
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-0.5A, V <sub>GS</sub> =0V		-0.8	-1.2	V
Maximum Body-Diode Continuous Current	I <sub>S</sub>				-0.5	A
<b>Dynamic Parameters</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =0V, f=1MHZ		71		pF
Output Capacitance	C <sub>oss</sub>			20		



■ Typical Performance Characteristics

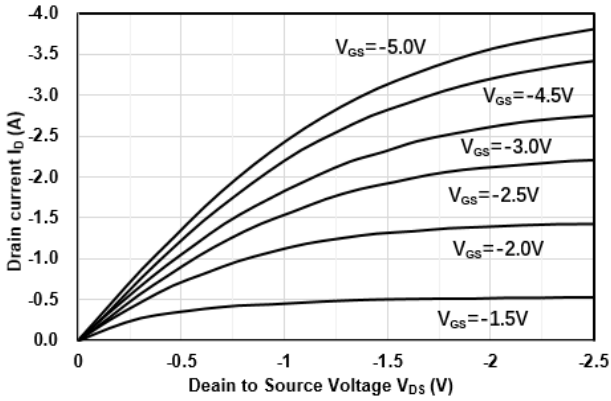


Figure1. Output Characteristics

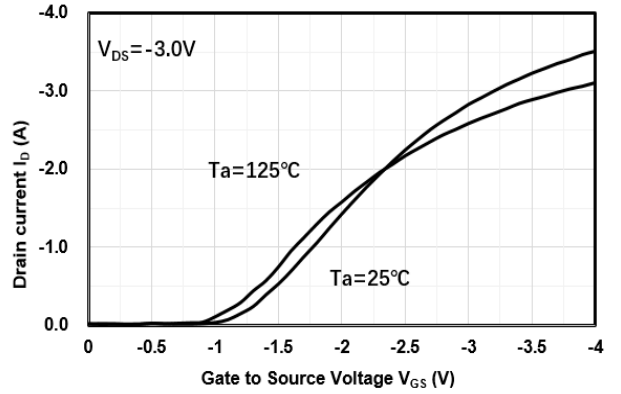


Figure2. Transfer Characteristics

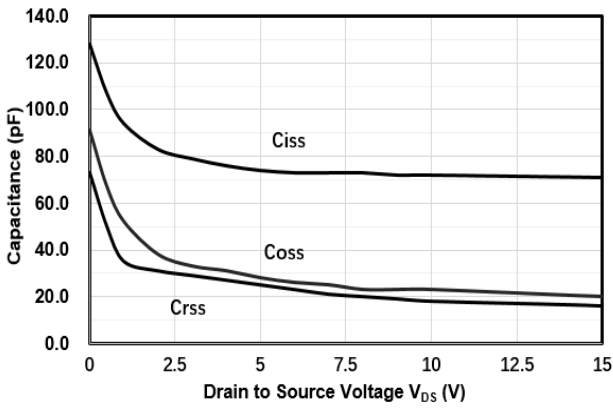


Figure3. Capacitance Characteristics

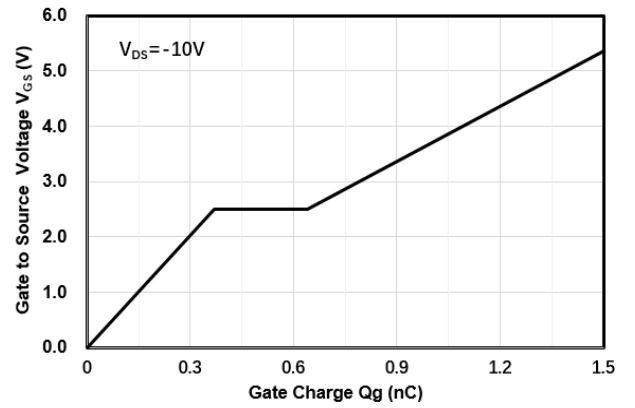


Figure4. Gate Charge

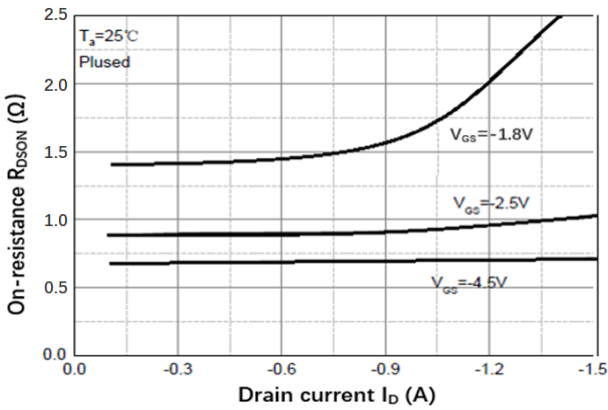


Figure5. Drain-Source on Resistance

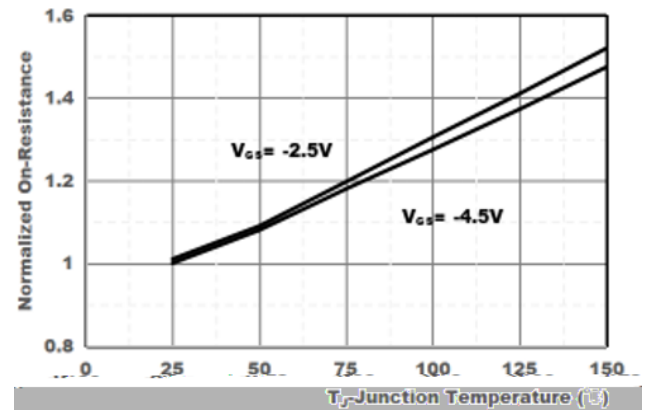


Figure6. Drain-Source on Resistance



# YJL3139KA

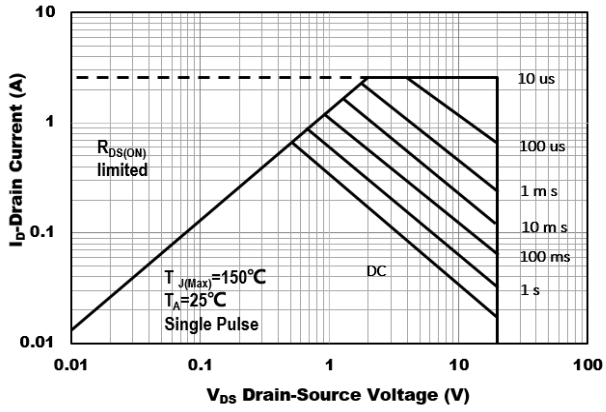


Figure7. Safe Operation Area

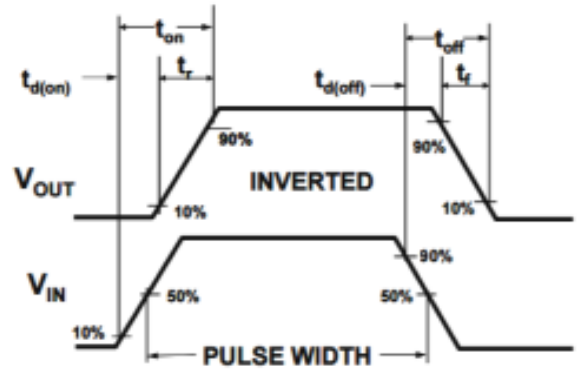
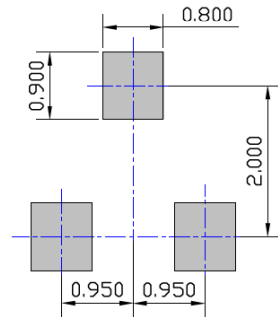
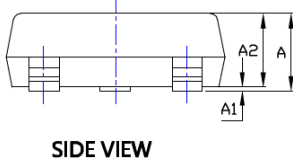
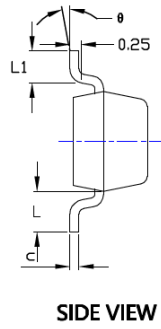
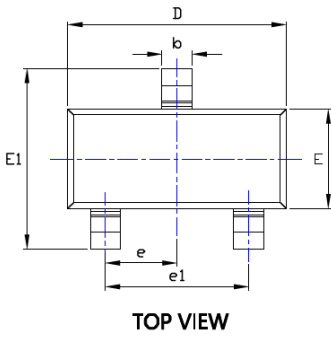


Figure8. Switching wave



# YJL3139KA

## SOT-23 Package information



UNIT: mm

SYMBOL	DIMENSIONS			
	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
θ	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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