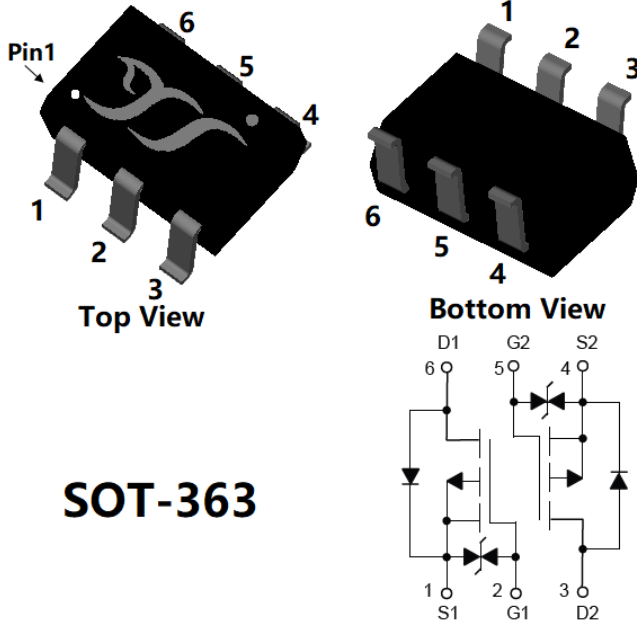


## P-Channel Enhancement Mode Field Effect Transistor



### 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 ( $T_A=25^\circ C$ unless otherwise noted)

Parameter	Symbol	Maximum	Unit
Drain-source Voltage	$V_{DS}$	-20	V
Gate-source Voltage	$V_{GS}$	$\pm 12$	V
Drain Current	$I_D$	$T_A=25^\circ C$ Steady State	-0.5
		$T_A=70^\circ C$ Steady State	-0.4
Pulsed Drain Current <sup>A</sup>	$I_{DM}$	-2.6	A
Total Power Dissipation @ $T_A=25^\circ C$ Steady State	$P_D$	0.15	W
Thermal Resistance Junction-to-Ambient @ Steady State <sup>B</sup>	$R_{JA}$	833	$^\circ C/W$
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55~+150	$^\circ C$

### Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJL3139KADW	F2	39KA	3000	30000	120000	7" reel



# YJL3139KADW

## Electrical Characteristics (T<sub>J</sub>=25°C 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°C			-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		
Reverse Transfer Capacitance	C <sub>rss</sub>			15		
<b>Switching Parameters</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 U\$		1.24		
Gate Source Charge	Q <sub>gs</sub>			0.37		



### Typical Performance Characteristics

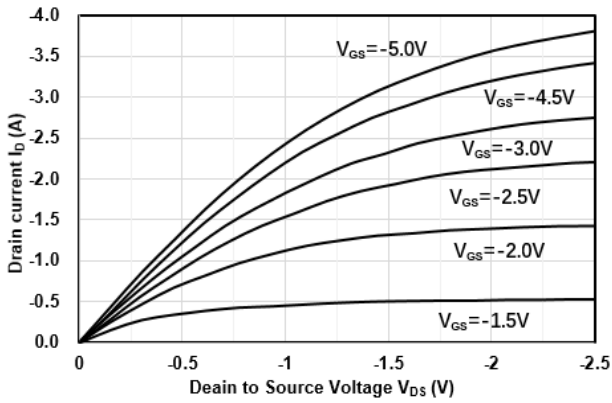


Figure1. Output Characteristics

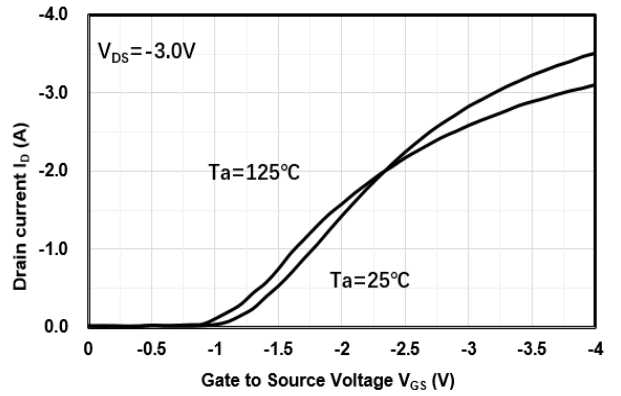


Figure2. Transfer Characteristics

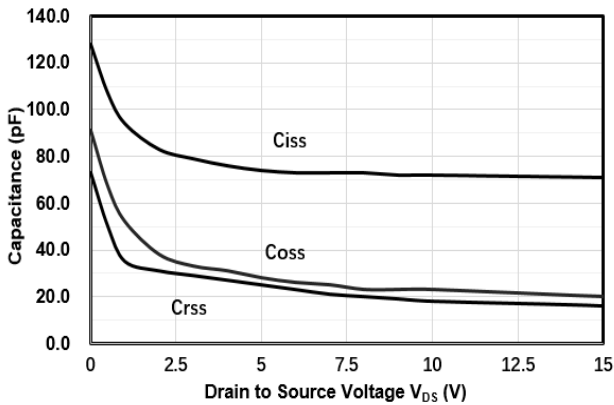


Figure3. Capacitance Characteristics

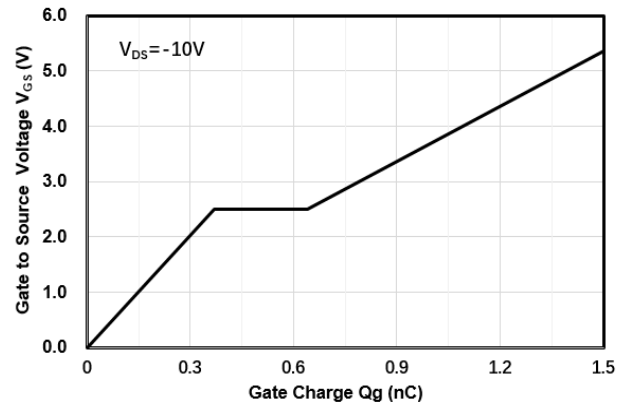


Figure4. Gate Charge

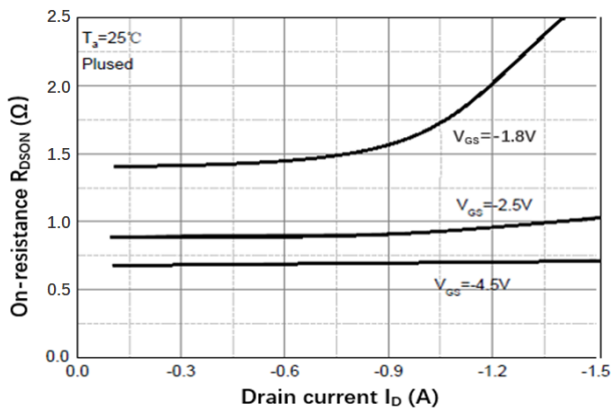


Figure5. Drain-Source on Resistance

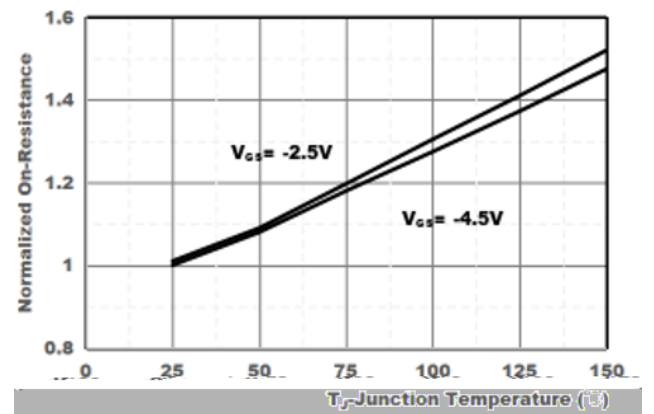


Figure6. Drain-Source on Resistance



# YJL3139KADW

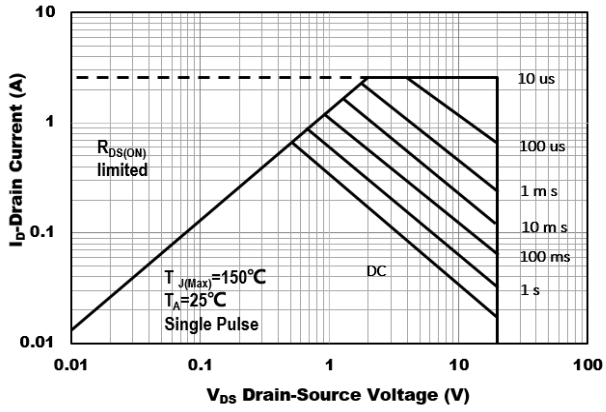


Figure7. Safe Operation Area

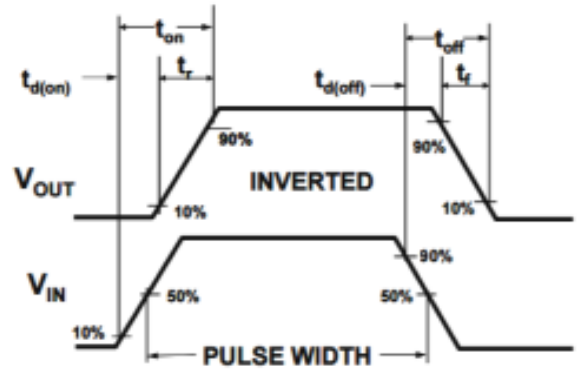
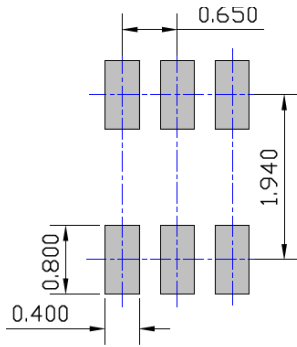
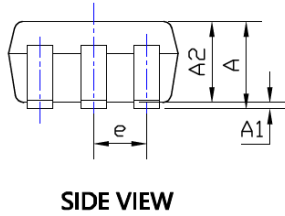
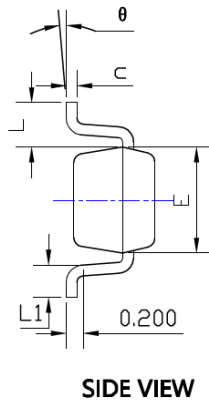
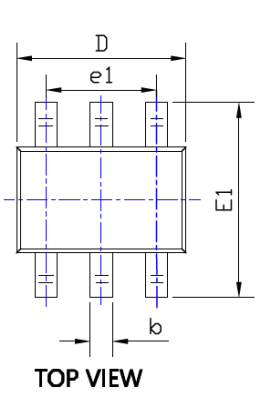


Figure8. Switching wave



# YJL3139KADW

## SOT-363 Package information



UNIT: mm

SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.043	0.900	1.100
A1	0.000	0.004	0.000	0.100
A2	0.035	0.039	0.900	1.000
b	0.006	0.014	0.150	0.350
c	0.004	0.010	0.100	0.250
D	0.071	0.087	1.800	2.200
E	0.045	0.053	1.150	1.350
E1	0.085	0.096	2.150	2.450
e	0.026TYP		0.650TYP	
e1	0.047	0.055	1.200	1.400
L	0.021REF		0.525REF	
L1	0.010	0.018	0.260	0.460
theta	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.



## 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](http://www.21yangjie.com) , or consult your nearest Yangjie's sales office for further assistance.