



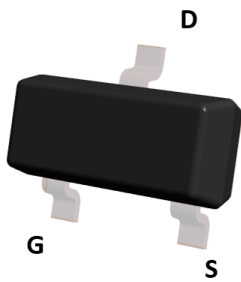
**HESTORE.HU**

elektronikai alkatrész áruház

**EN:** This Datasheet is presented by the manufacturer.

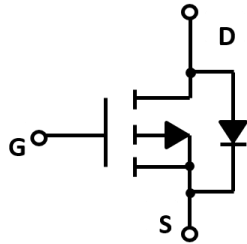
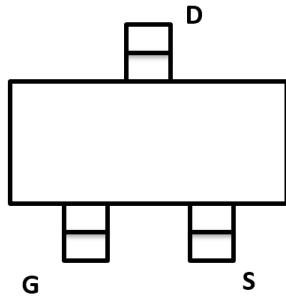
Please visit our website for pricing and availability at [www.hestore.hu](http://www.hestore.hu).

## P-Channel Enhancement Mode Field Effect Transistor



Top View

**SOT-23**



### Product Summary

- $V_{DS}$  -20V
- $I_D$  -3.4A
- $R_{DS(ON)}$ ( at  $V_{GS}=-4.5V$ ) <64 mohm
- $R_{DS(ON)}$ ( at  $V_{GS}=-2.5V$ ) <80 mohm
- $R_{DS(ON)}$ ( at  $V_{GS}=-1.8V$ ) <95 mohm

### General Description

- Trench Power LV MOSFET technology
- High Power and Current handling capability
- Low Gate Charge

### Applications

- PWM applications
- Power management
- Load switch

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

Parameter	Symbol	Maximum	Unit
Drain-source Voltage	$V_{DS}$	-20	V
Gate-source Voltage	$V_{GS}$	$\pm 10$	V
Drain Current	$I_D$	$T_A=25^\circ\text{C}$	-3.4
		$T_A=70^\circ\text{C}$	-2.7
Pulsed Drain Current <sup>A</sup>	$I_{DM}$	-14	A
Total Power Dissipation @ $T_A=25^\circ\text{C}$	$P_D$	1	W
Thermal Resistance Junction-to-Ambient <sup>B</sup>	$R_{\theta JA}$	125	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55~+150	$^\circ\text{C}$

### ■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJL2301C	F2	S1.	3000	30000	120000	7" reel



# YJL2301C

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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-20			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-20V, V_{GS}=0V, T_C=25^\circ\text{C}$			-1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 10V, V_{DS}=0V$			$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.4	-0.62	-1.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-3.4A$		49	64	m $\Omega$
		$V_{GS}=-2.5V, I_D=-3A$		59	80	
		$V_{GS}=-1.8V, I_D=-2.5A$		79	95	
Diode Forward Voltage	$V_{SD}$	$I_S=-3.4A, V_{GS}=0V$		-0.8	-1.2	V
Maximum Body-Diode Continuous Current	$I_S$				-3.4	A
<b>Dynamic Parameters</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=-10V, V_{GS}=0V, f=1\text{MHz}$		478		pF
Output Capacitance	$C_{oss}$			81		
Reverse Transfer Capacitance	$C_{rss}$			51		
<b>Switching Parameters</b>						
Total Gate Charge	$Q_g$	$V_{GS}=-4.5V, V_{DS}=-10V, I_D=-3.4A$		4.3		nC
Gate Source Charge	$Q_{gs}$			0.8		
Gate Drain Charge	$Q_{gd}$			1.1		
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=-4.5V, V_{DD}=-10V, I_D=-1A, R_{GEN}=2.5\Omega$		12		ns
Turn-on Rise Time	$t_r$			54		
Turn-off Delay Time	$t_{D(off)}$			15		
Turn-off Fall Time	$t_f$			9		

A. Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty cycle  $\leq 2\%$ .

B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

## ■ Typical Performance Characteristics

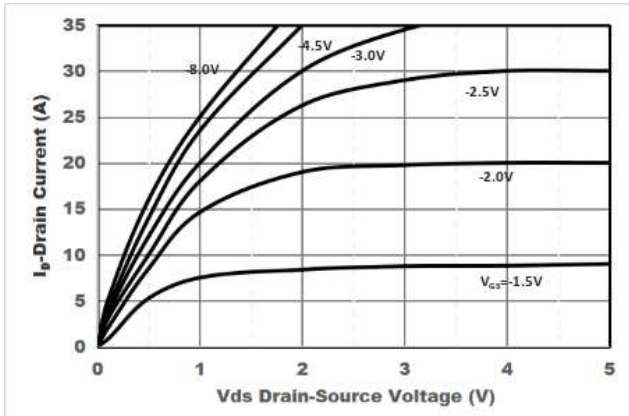


Figure1. Output Characteristics

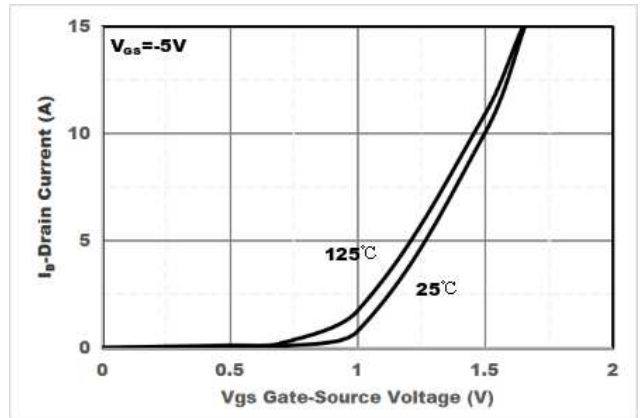


Figure2. Transfer Characteristics

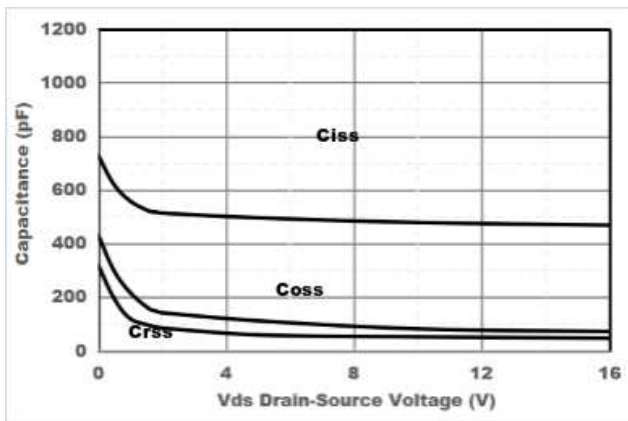


Figure3. Capacitance Characteristics

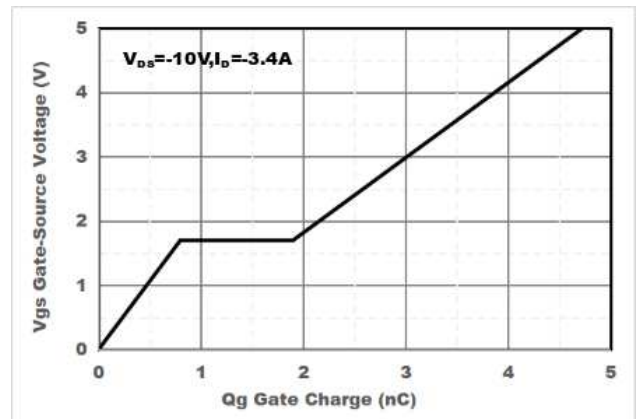


Figure4. Gate Charge

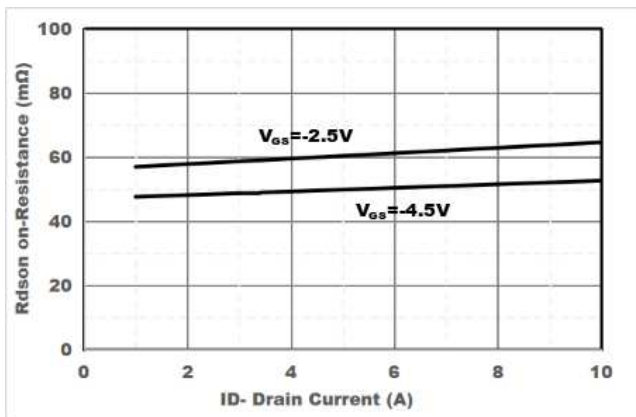


Figure5. Drain-Source on Resistance

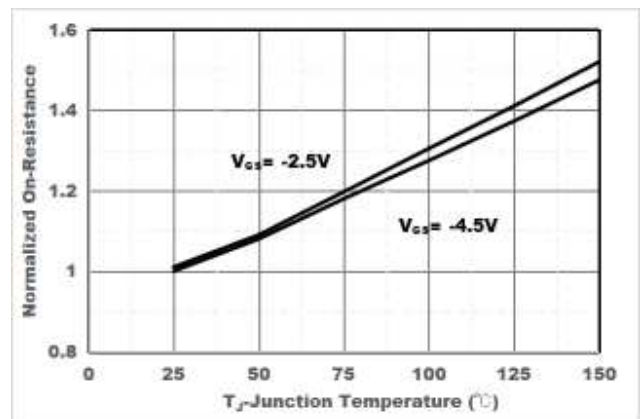


Figure6. Drain-Source on Resistance

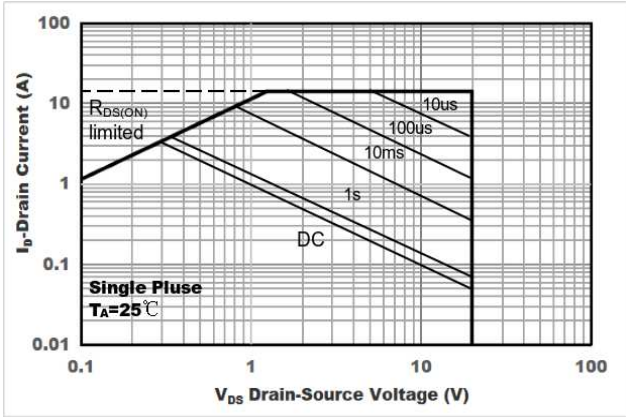


Figure7. Safe Operation Area

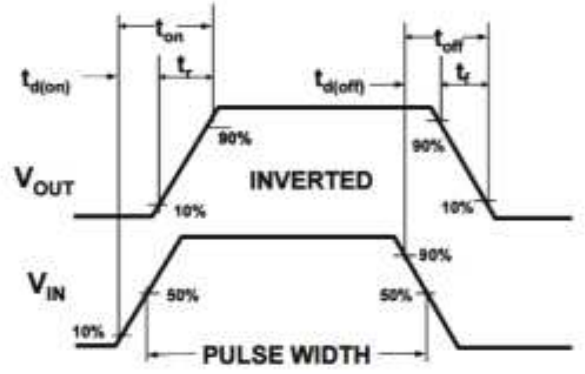
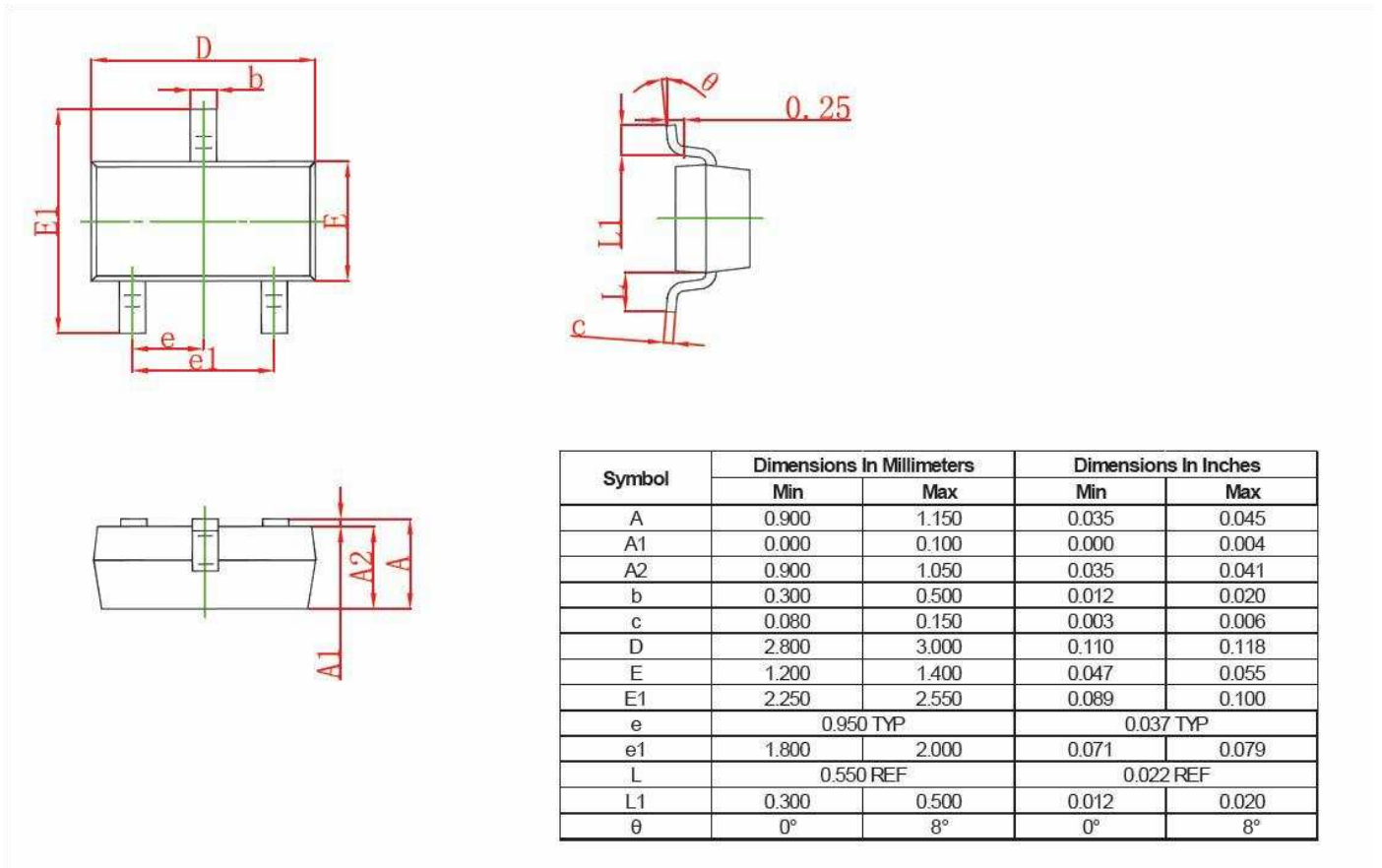
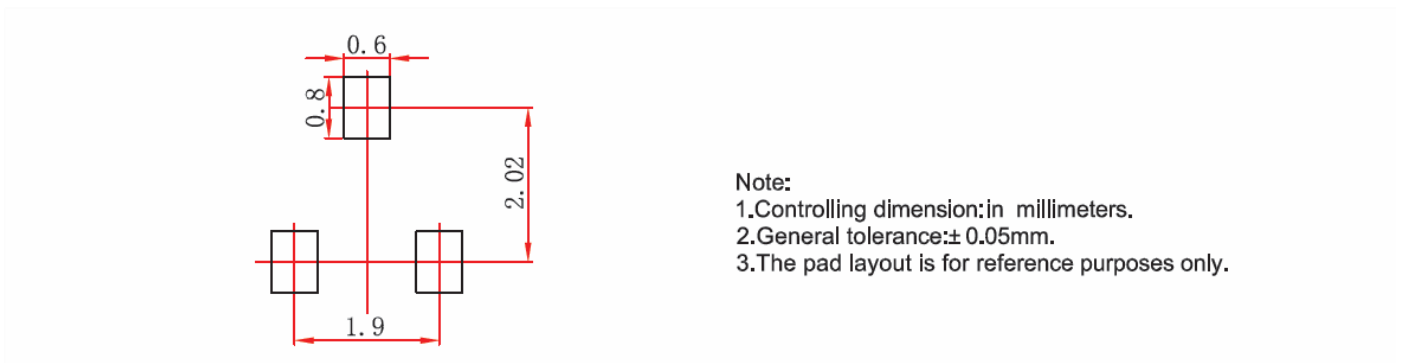


Figure8. Switching wave

## ■ SOT-23 Package information



## ■ SOT-23 Suggested Pad Layout





# YJL2301C

---

## 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.