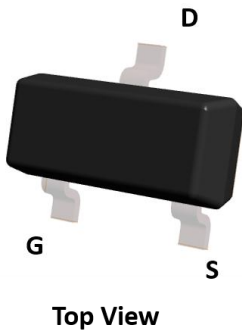
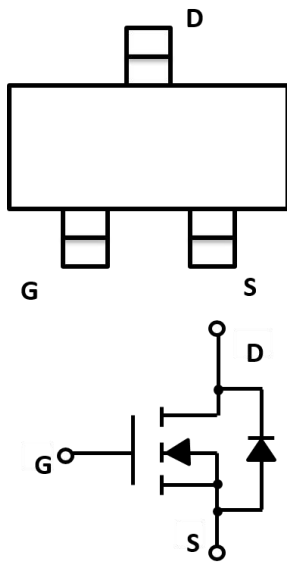


N-Channel Enhancement Mode Field Effect Transistor



SOT-23



Product Summary

- V_{DS} 100V
- I_D 2A
- $R_{DS(ON)}$ (at $V_{GS}=10V$) <280 mohm
- $R_{DS(ON)}$ (at $V_{GS}=4.5V$) <300 mohm

General Description

- Trench Power MV MOSFET technology
- Excellent package for heat dissipation
- High density cell design for low $R_{DS(ON)}$
- MSL LEVEL1

Applications

- DC-DC Converters
- Power management functions

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

Parameter	Symbol	Limit	Unit
Drain-source Voltage	V_{DS}	100	V
Gate-source Voltage	V_{GS}	± 20	V
Drain Current	I_D	$T_A=25^\circ\text{C}$	2
		$T_A=70^\circ\text{C}$	1.6
Pulsed Drain Current ^A	I_{DM}	8	A
Total Power Dissipation @ $T_A=25^\circ\text{C}$	P_D	1.2	W
Thermal Resistance Junction-to-Ambient ^B	$R_{\theta JA}$	105	$^\circ\text{C}/\text{W}$
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
YJL02N10A	F2	1002.	3000	30000	120000	7" reel



YJL02N10A

■ Electrical Characteristics (T_J=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =250μA	100			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =100V, V _{GS} =0V			1	μA
Gate-Body Leakage Current	I _{GSS1}	V _{GS} = ±20V, V _{DS} =0V			±100	nA
	I _{GSS2}	V _{GS} = ±10V, V _{DS} =0V			±50	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250μA	1	1.8	2.5	V
Static Drain-Source On-Resistance	R _{Ds(ON)}	V _{GS} = 10V, I _D =2A		250	280	mΩ
		V _{GS} = 4.5V, I _D =1.5A		260	300	
Diode Forward Voltage	V _{SD}	I _S =2A, V _{GS} =0V		0.8	1.2	V
Maximum Body-Diode Continuous Current	I _S				2	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =50V, V _{GS} =0V, f=1MHZ		320		pF
Output Capacitance	C _{oss}			88		
Reverse Transfer Capacitance	C _{rss}			17		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =50V, I _D =1.3A		5.3		nC
Gate-Source Charge	Q _{gs}			1.4		
Gate-Drain Charge	Q _{gd}			1.8		
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V, V _{DD} =50V, I _D =1.3A, R _L =39Ω R _{GEN} =1Ω		14		ns
Turn-on Rise Time	t _r			54		
Turn-off Delay Time	t _{D(off)}			18		
Turn-off fall Time	t _f			11		

A. Pulse Test: Pulse Width ≤ 300us, Duty cycle ≤ 2%.

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



■ Typical Performance Characteristics

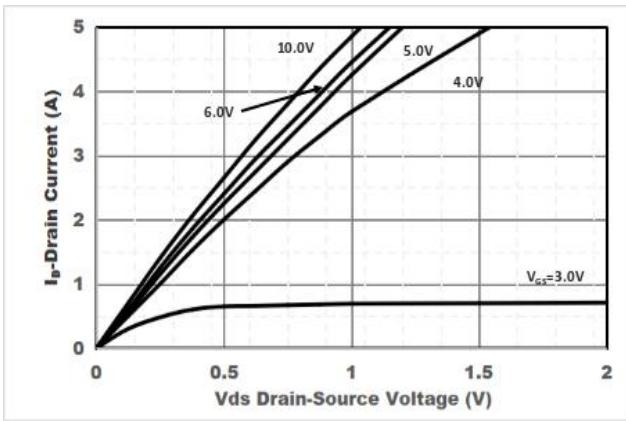


Figure1. Output Characteristics

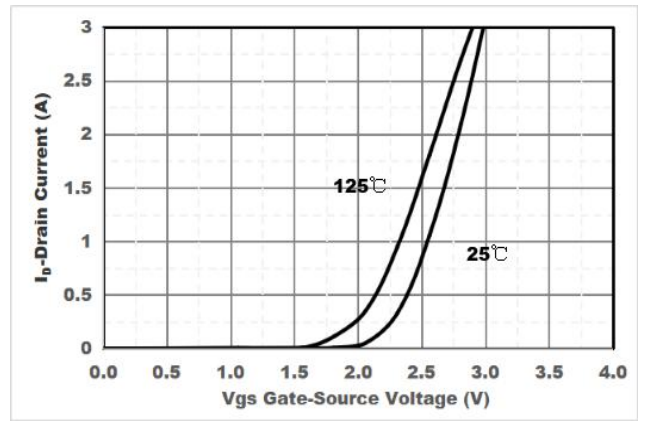


Figure2. Transfer Characteristics

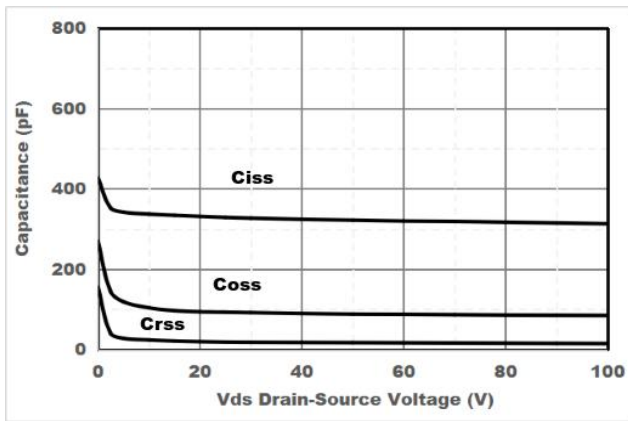


Figure3. Capacitance Characteristics

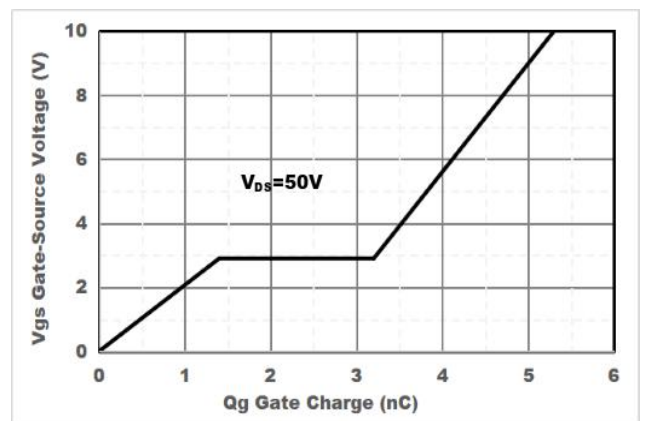


Figure4. Gate Charge

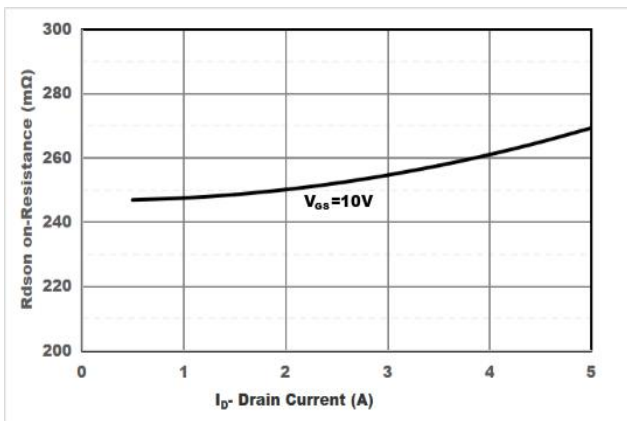


Figure5. Drain-Source on Resistance

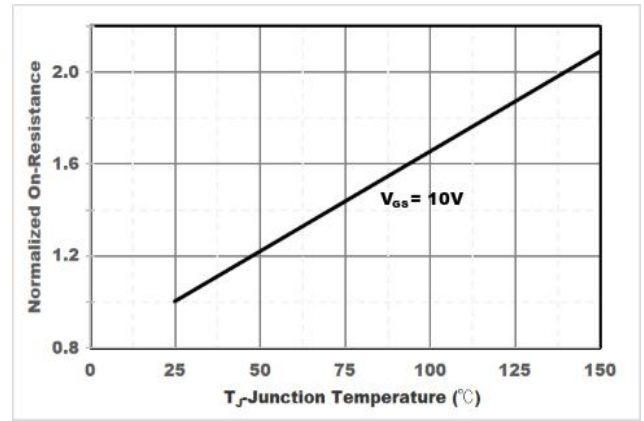


Figure6. Drain-Source on Resistance

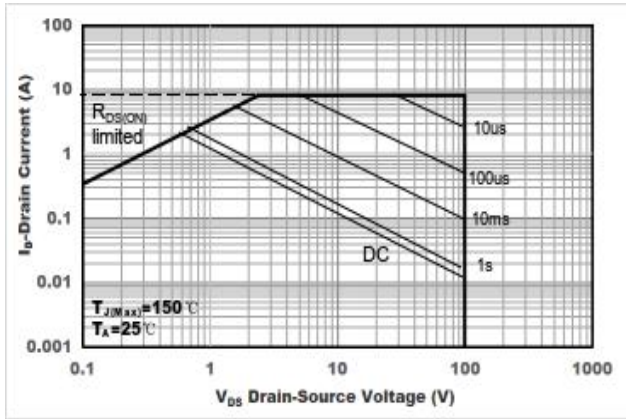


Figure7. Safe Operation Area

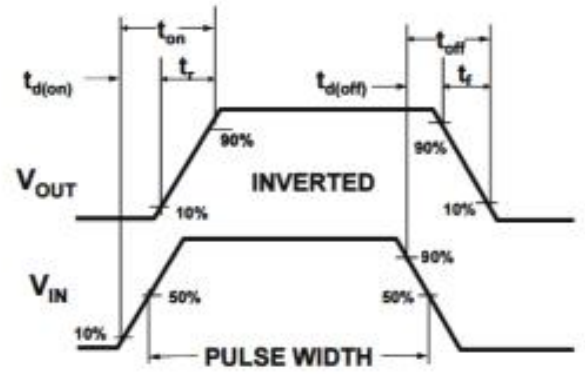
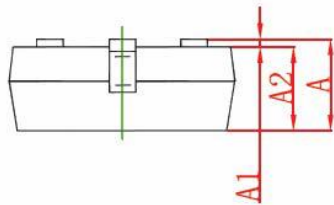
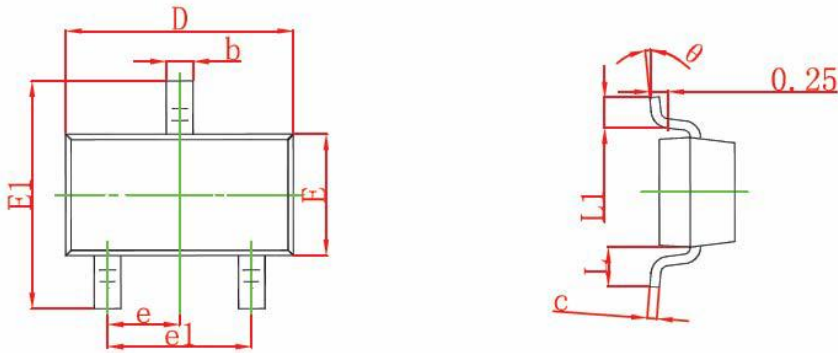


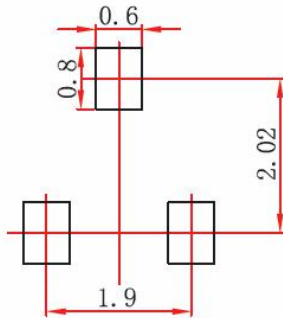
Figure8. Switching wave

■ SOT-23 Package information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

■ SOT-23 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.



YJL02N10A

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.