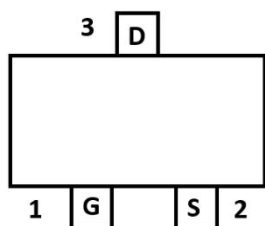
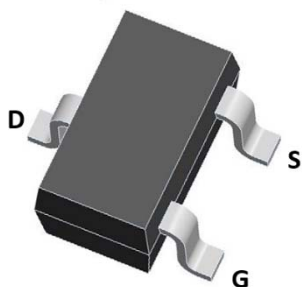
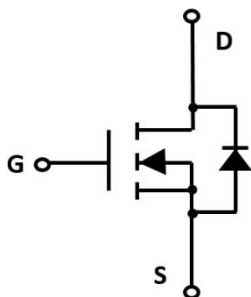


YJL2102WQ

N-Channel Enhancement Mode Field Effect Transistor



SOT-323



Product Summary

- V_{DS} 20V
- I_D 2.0A
- $R_{DS(ON)}$ (at $V_{GS}=4.5V$) <80 mohm
- $R_{DS(ON)}$ (at $V_{GS}=2.5V$) <98 mohm

General Description

- Trench Power LV MOSFET technology
- High Power and current handling capability
- Part no. with suffix "Q" means AEC-Q101 qualified

Applications

- PWM application
- Load switch

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

Parameter	Symbol	Limit	Unit
Drain-source Voltage	V_{DS}	20	V
Gate-source Voltage	V_{GS}	± 10	V
Drain Current	I_D	$T_A=25^\circ\text{C}$ @ Steady State	2
		$T_A=70^\circ\text{C}$ @ Steady State	1.7
Pulsed Drain Current ^A	I_{DM}	16	A
Total Power Dissipation @ $T_A=25^\circ\text{C}$	P_D	350	mW
Thermal Resistance Junction-to-Ambient @ Steady State ^B	$R_{\theta JA}$	350	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^\circ\text{C}$

■ Ordering Information

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJL2102WQ	F2	TS2.	3000	30000	120000	7" reel

YJL2102WQ

■ 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	20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±10V, V _{DS} =0V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250μA	0.5	0.8	1.1	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 4.5V, I _D =2.5A		60	80	mΩ
		V _{GS} = 2.5V, I _D =2.0A		75	98	
Diode Forward Voltage	V _{SD}	I _S =2.5A, V _{GS} =0V			1.2	V
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =10V, V _{GS} =0V, f=1MHZ		210		pF
Output Capacitance	C _{oss}			37		
Reverse Transfer Capacitance	C _{rss}			30		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =4.5V, V _{DS} =10V, I _D =2A		3.2		nC
Gate Source Charge	Q _{gs}			0.8		
Gate Drain Charge	Q _{gd}			0.8		
Reverse Recovery Charge	Q _{rr}	I _{SD} =2A, di/dt=80A/us		0.95		nC
Reverse Recovery Time	t _{rr}			4.9		ns
Turn-on Delay Time	t _{D(on)}	V _{GS} =4.5V, V _{DS} =10V, I _D =2A, R _g =3Ω		4.8		ns
Turn-on Rise Time	t _r			28		
Turn-off Delay Time	t _{D(off)}			15		
Turn-off Fall Time	t _f			28		

A. Repetitive rating; pulse width limited by max. junction temperature.

B. Device mounted on FR-4 PCB, 1 mm x 17mm x 15mm.

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■ Typical Performance Characteristics

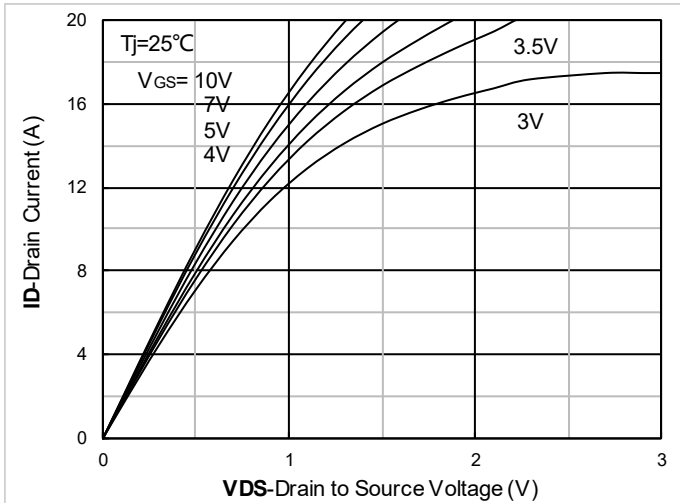


Figure1. Output Characteristics

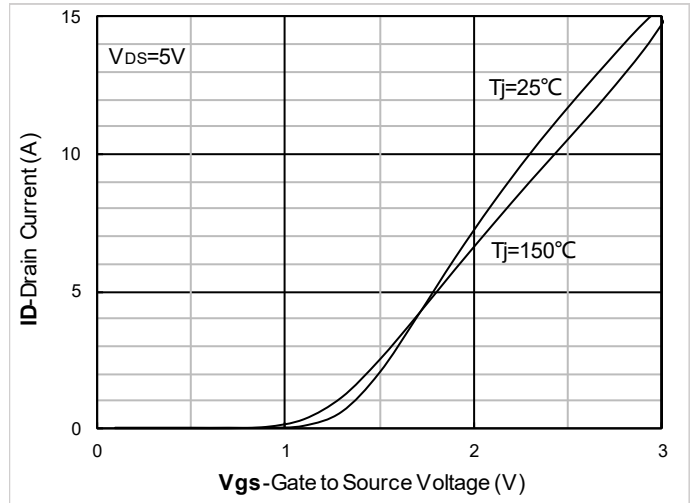


Figure2. Transfer Characteristics

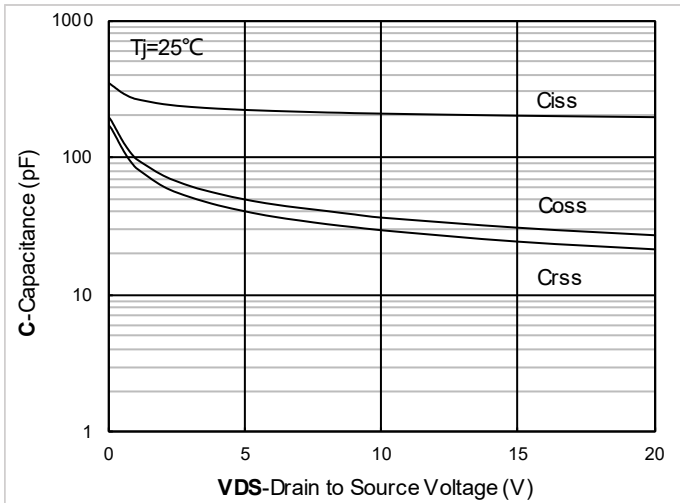


Figure3. Capacitance Characteristics

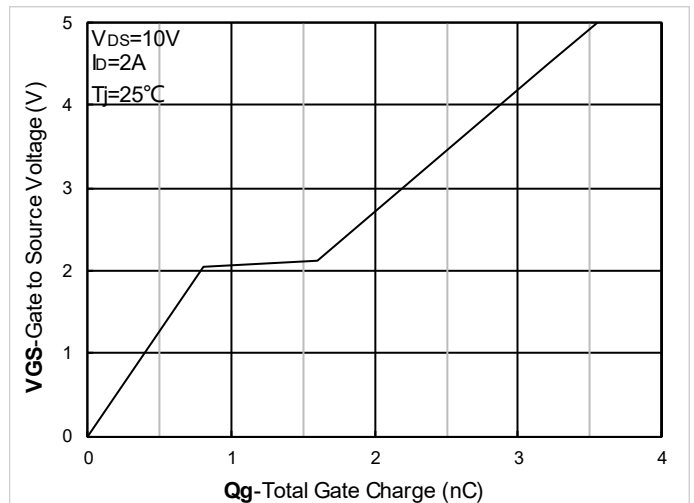


Figure4. Gate Charge

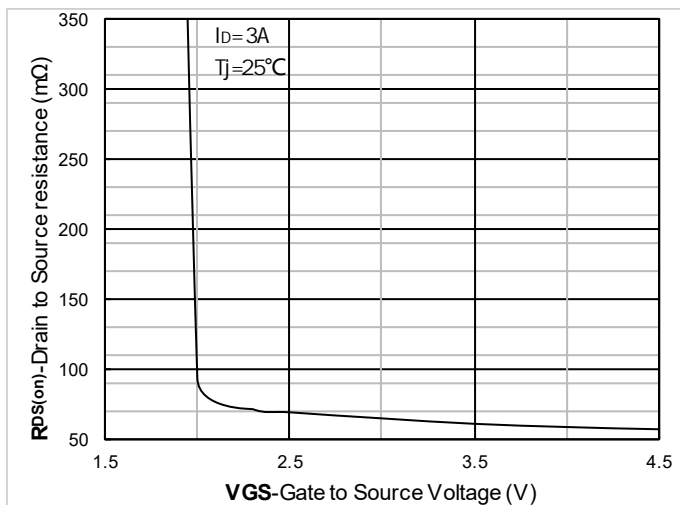


Figure5. On-Resistance vs Gate to Source Voltage

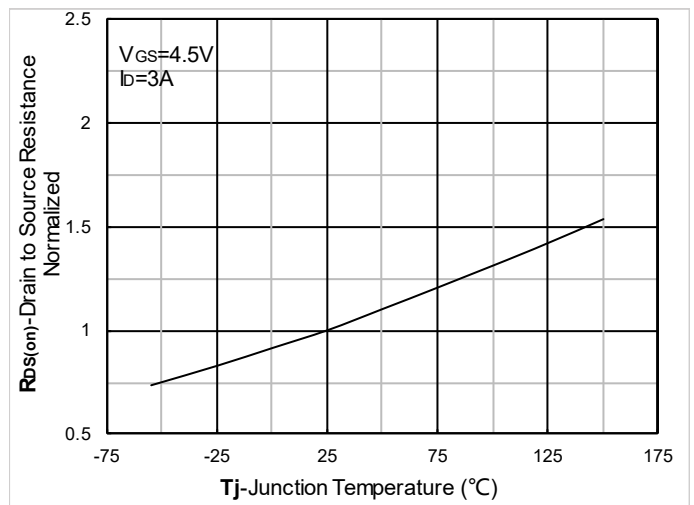


Figure6. Normalized On-Resistance

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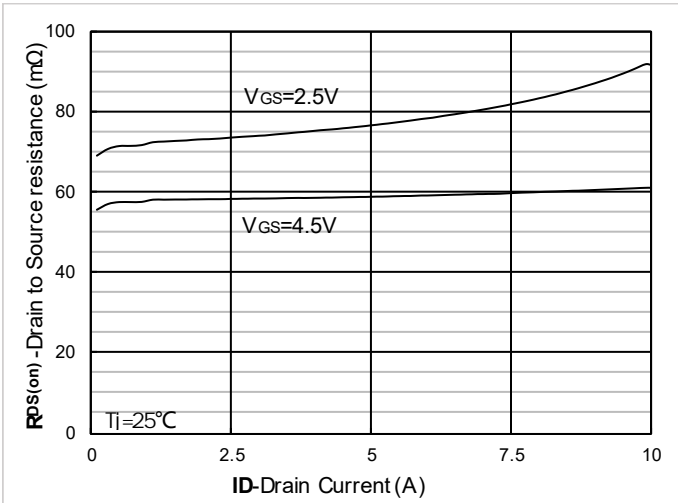


Figure 7. $R_{DS(on)}$ VS Drain Current

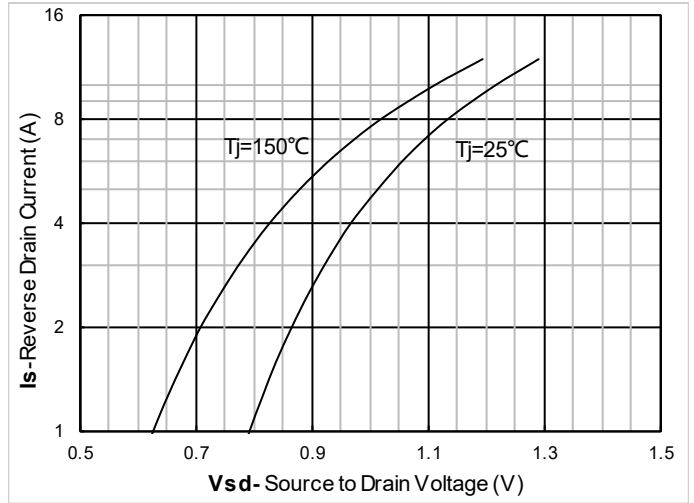


Figure 8. Forward characteristics of reverse diode

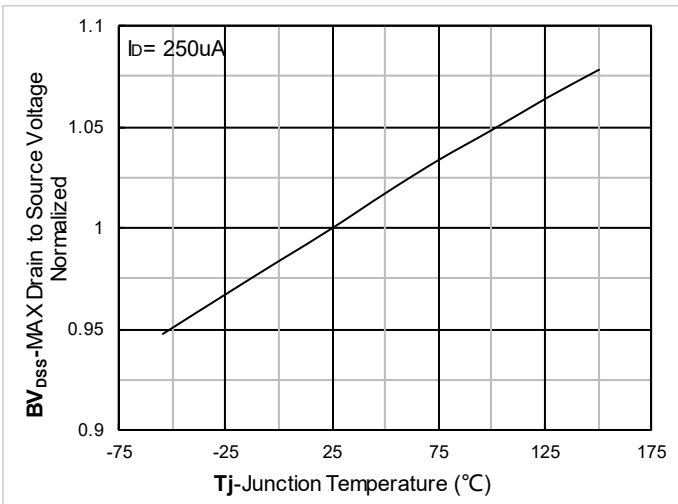


Figure 9. Normalized breakdown voltage

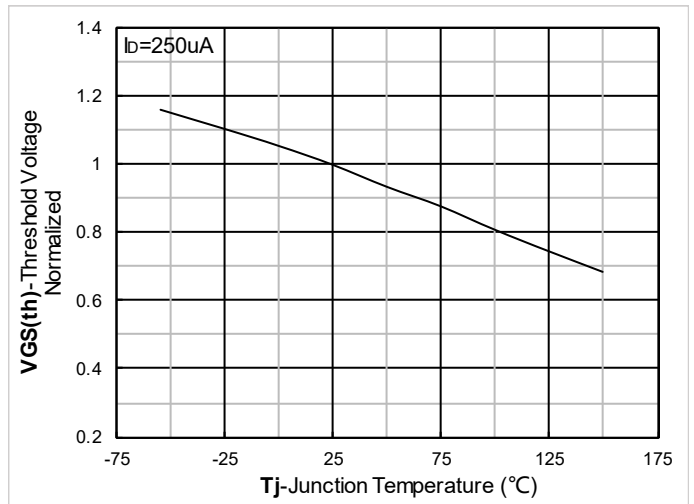


Figure 10. Normalized Threshold voltage

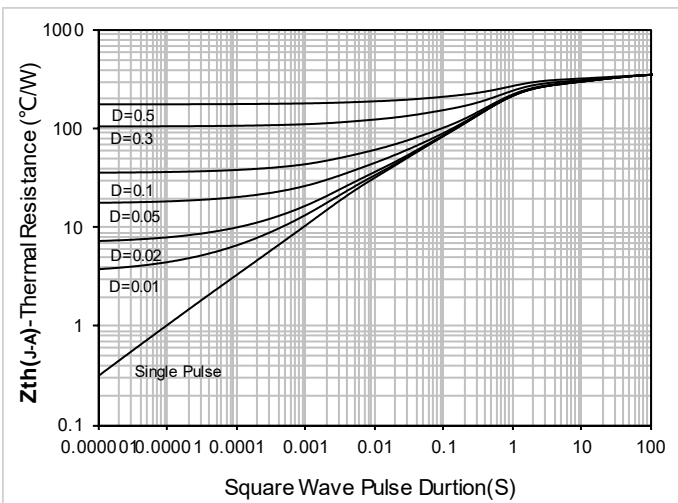


Figure 11. Maximum Transient Thermal Impedance

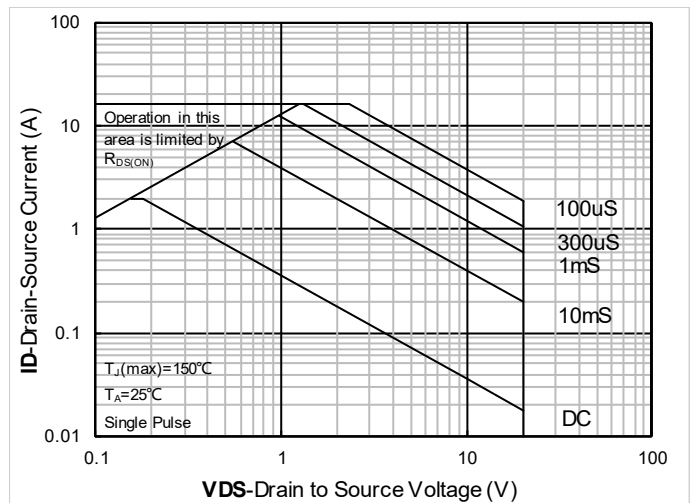
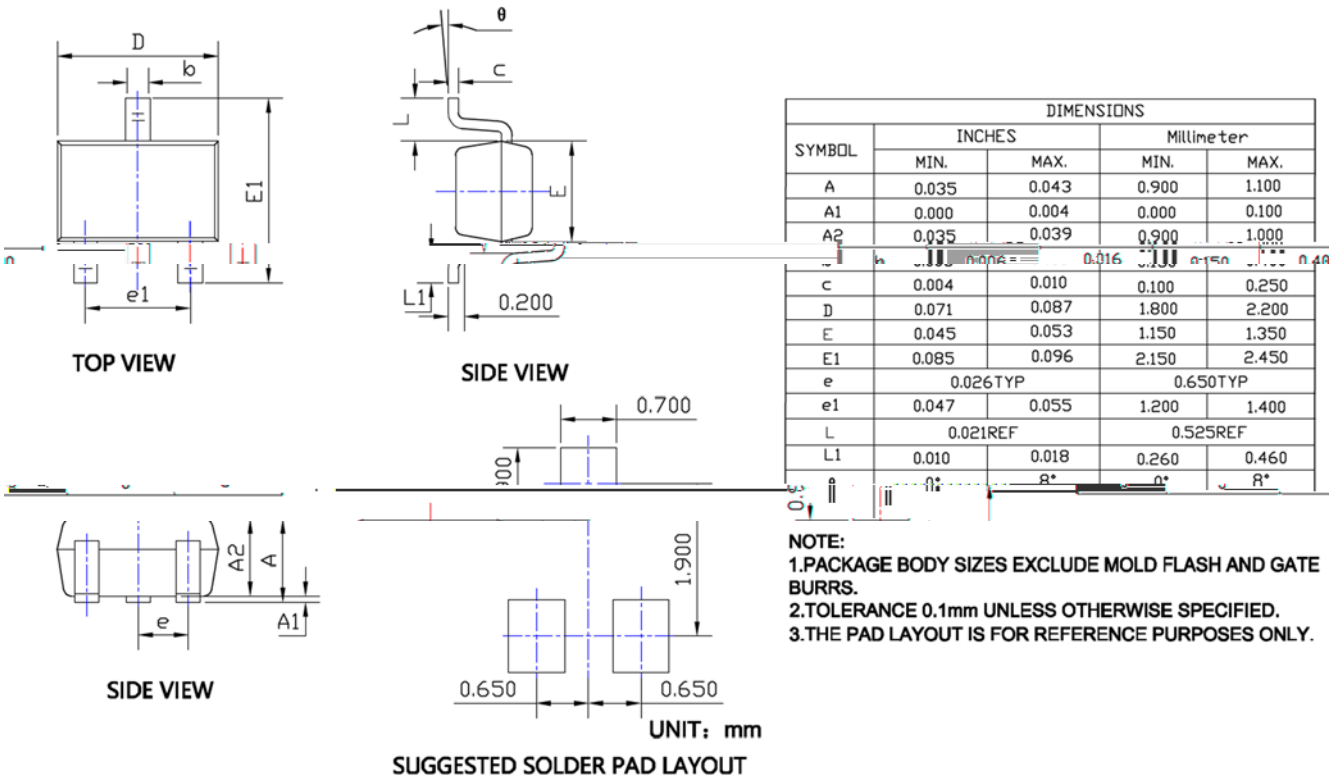


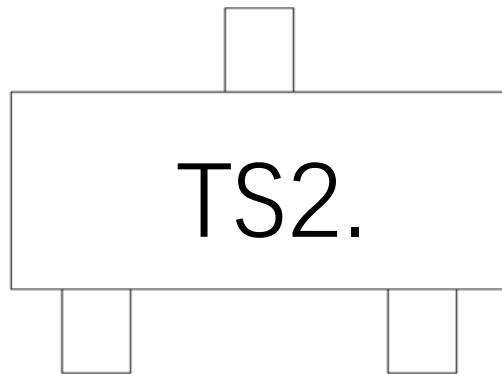
Figure 12. Safe Operation Area

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■ SOT-323 Package Information



■ Marking Information



Note:

1. All marking is at middle of the product body
2. All marking is in laser marking
3. TS2 is Marking Code
4. Body color: Black

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