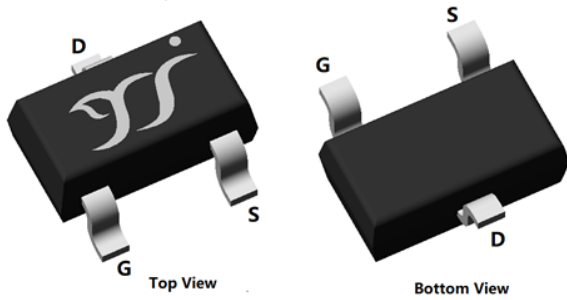
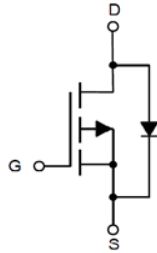




P-Channel Enhancement Mode Field Effect Transistor



SOT-23-3L



Product Summary

• V_{DS}	-30V
• I_D	-2.3A
• $R_{DS(ON)}$ (at $V_{GS}=-10V$)	<101mΩ
• $R_{DS(ON)}$ (at $V_{GS}=-4.5V$)	<169mΩ
• ESD Level(HBM)	H0

General Description

- Low $R_{DS(on)}$ & FOM
- Extremely low switching loss
- Excellent stability and uniformity
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free

Applications

- Power management
- Portable equipment

■ Limiting Values

■ Thermal Resistance

Parameter		Symbol	Typ	Max	Units
Thermal Resistance Junction-to-Ambient (Note 2)	Steady-State	$R_{\theta JA}$	-	145	$^{\circ}C/W$



YJL101P03AL

■ Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-250\mu A, T_j=25^\circ C$	-30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-30V, V_{GS}=0V, T_j=25^\circ C$	-	-	-1	μA
		$V_{DS}=-30V, V_{GS}=0V, T_j=125^\circ C$	-	-	-100	
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V, T_j=25^\circ C$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A, T_j=25^\circ C$	-1	-1.5	-2	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-2A, T_j=25^\circ C$	-	79	101	m Ω
		$V_{GS}=-4.5V, I_D=-1A, T_j=25^\circ C$	-	113	169	m Ω
Diode Forward Voltage	V_{SD}	$I_S=-2A, V_{GS}=0V, T_j=25^\circ C$	-	-0.88	-1.2	V
Gate Resistance	R_G	$f=1MHz, T_j=25^\circ C$	-	20	-	Ω
Dynamic Parameters						
Input Capacitance	C_{iss}	$V_{DS}=-15V, V_{GS}=0V, f=1MHz, T_j=25^\circ C$	-	183	-	pF
Output Capacitance	C_{oss}		-	31	-	
Reverse Transfer Capacitance	C_{rss}		-	25	-	
Switching Parameters						
Total Gate Charge	Q_g	$V_{GS}=-10V, V_{DS}=-15V, I_D=-2A, T_j=25^\circ C$	-	4.8	-	nC
Gate-Source Charge	Q_{gs}		-	0.57	-	
Gate-Drain Charge	Q_{gd}		-	0.52	-	
Reverse Recovery Charge	Q_{rr}	$I_F=-2A, di/dt=100A/\mu s, V_{GS}=0V, V_R=-15V, T_j=25^\circ C$	-	7	-	nC
Reverse Recovery Time	t_{rr}		-	11.6	-	ns
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=-10V, V_{DS}=-15V, I_D=-2A, R_{GEN}=3\Omega, T_j=25^\circ C$	-	4	-	ns
Turn-on Rise Time	t_r		-	2.2	-	
Turn-off Delay Time	$t_{D(off)}$		-	10.8	-	
Turn-off Fall Time	t_f		-	12	-	

Note:

- The entire application environment impacts the thermal resistance values shown, they are not constants and are only valid for the particular conditions noted.
- The value of $R_{\theta JA}$ is measured with the device mounted on the 40mm*40mm*1.1mm single layer FR-4 PCB board with 1 in² pad of 2oz. Copper, in the still air environment with $T_A=25^\circ C$. The maximum allowed junction temperature of $150^\circ C$. The value in any given application depends on the user's specific board design.

■ Typical Electrical and Thermal Characteristics Diagrams

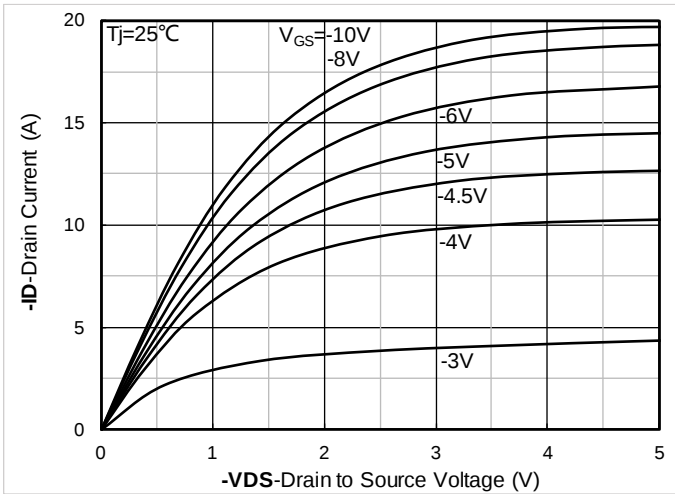


Figure 1. Output Characteristics; typical values

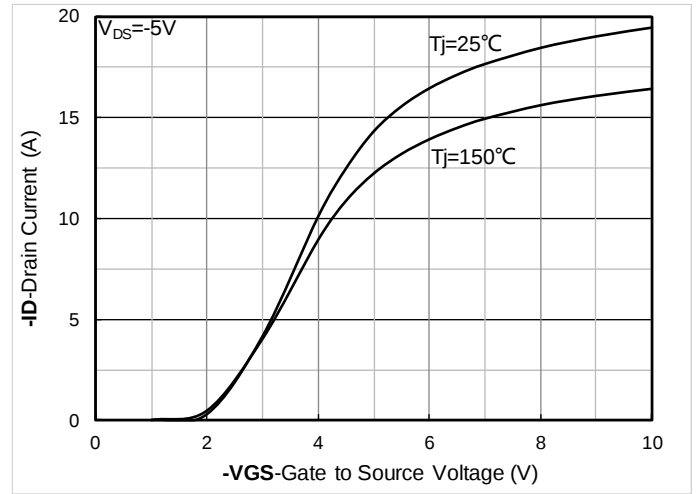


Figure 2. Transfer Characteristics; typical values

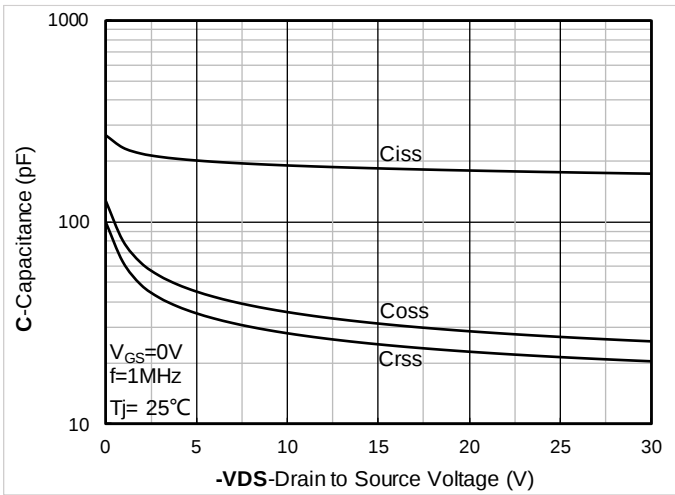


Figure 3. Capacitance Characteristics; typical values

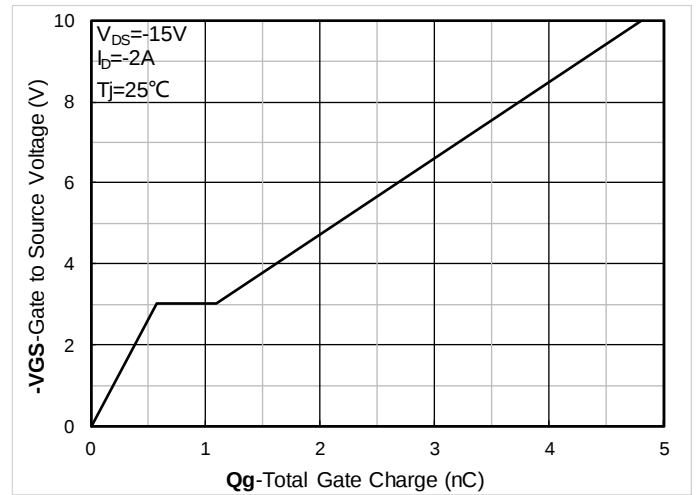


Figure 4. Gate Charge; typical values

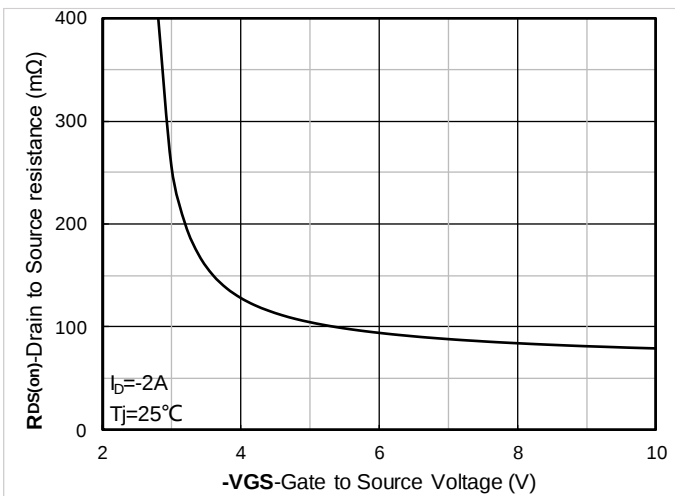


Figure 5. On-Resistance vs Gate to Source Voltage; typical values

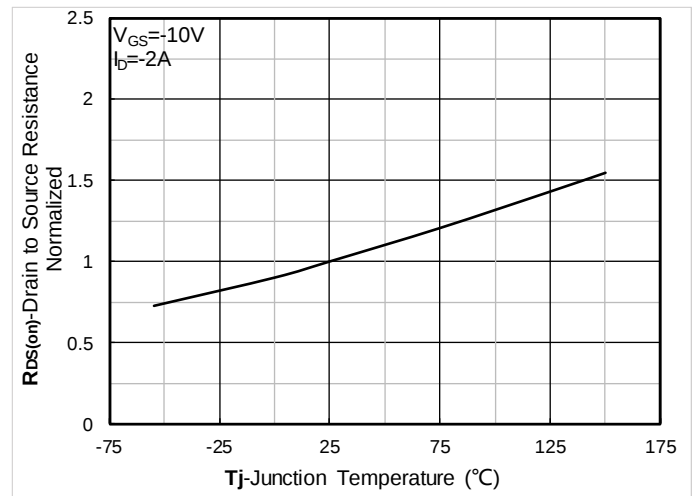


Figure 6. Normalized On-Resistance

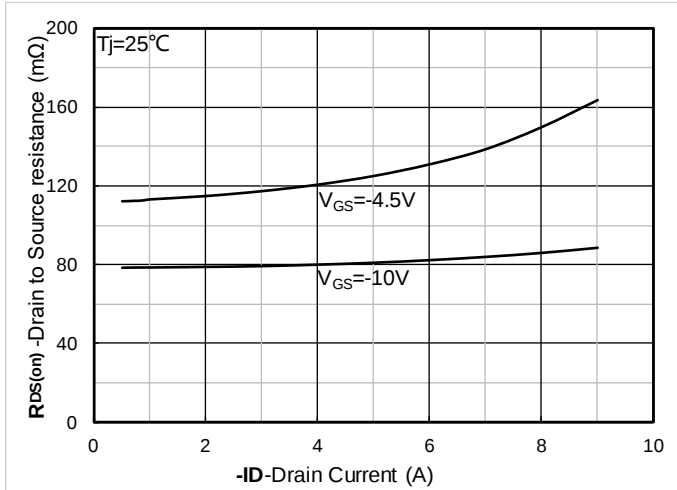


Figure 7. $R_{DS(on)}$ VS Drain Current; typical values

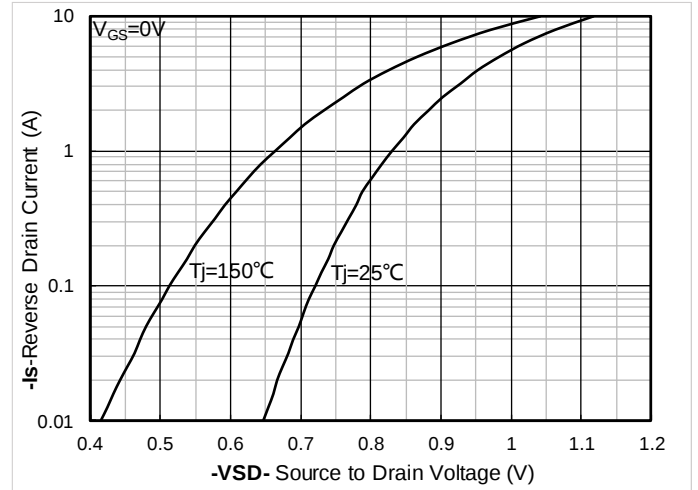


Figure 8. Forward characteristics of reverse diode; typical values

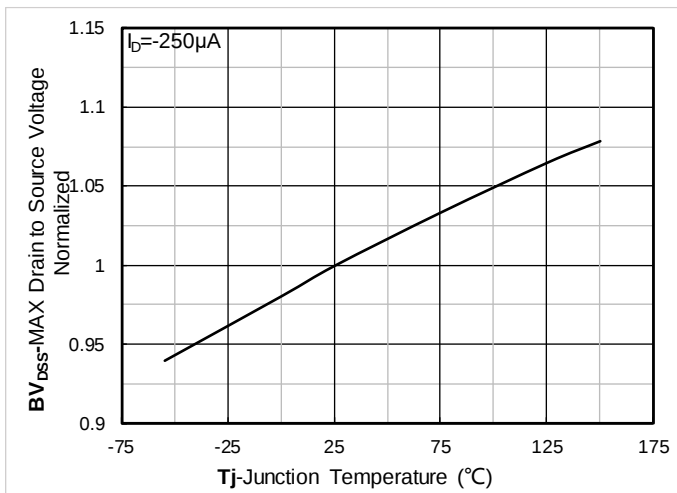


Figure 9. Normalized breakdown voltage

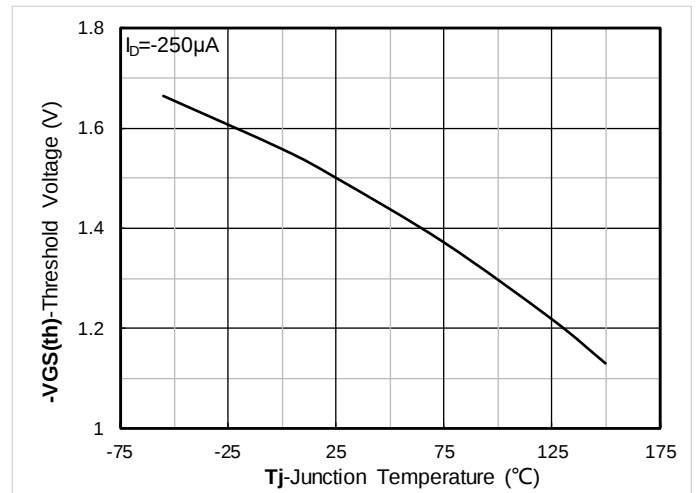


Figure 10. Gate Threshold voltage; typical values

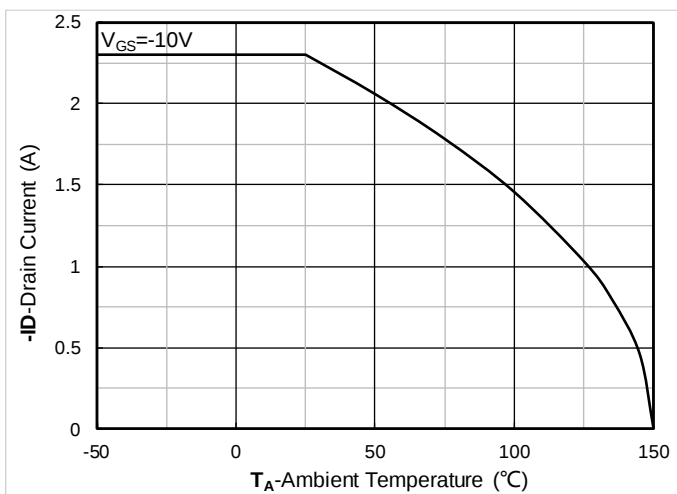


Figure 11. Current dissipation

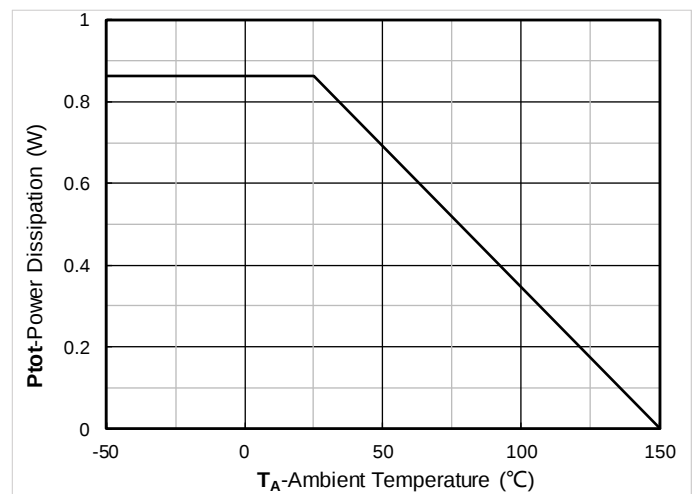


Figure 12. Power dissipation

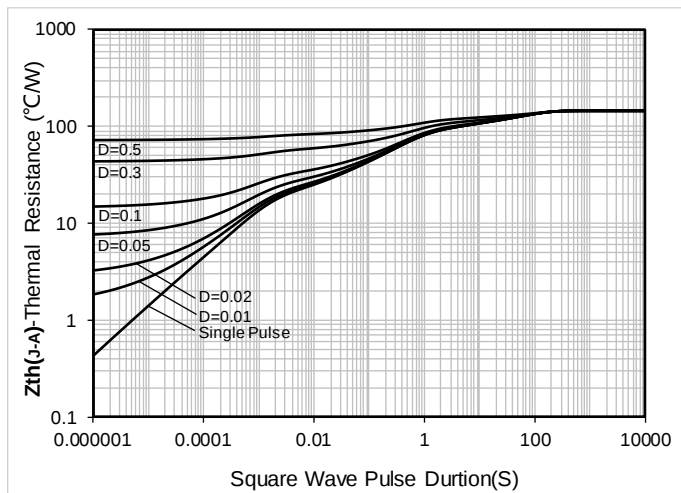


Figure 13. Maximum Transient Thermal Impedance

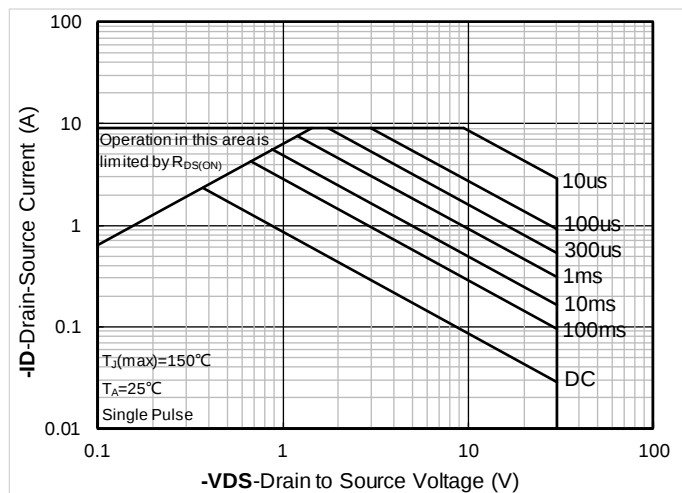
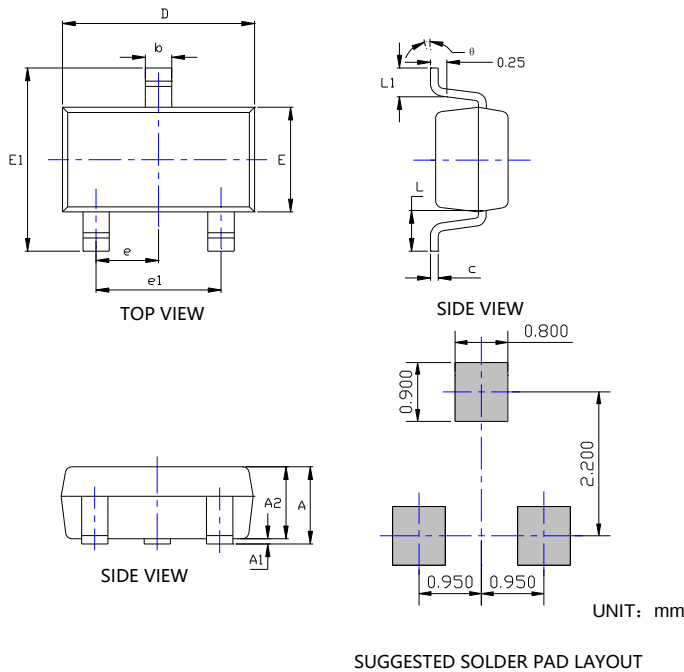


Figure 14. Safe Operation Area

■ SOT-23-3L Package information

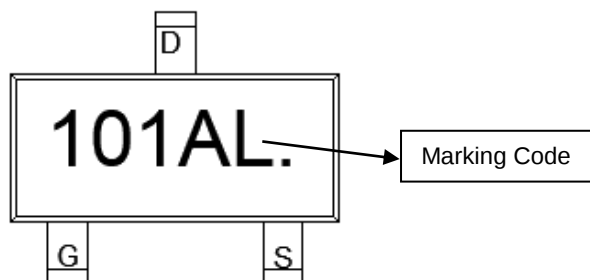


SYMBOL	DIMENSIONS					
	INCHES			Millimeter		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	0.041	---	0.049	1.050	---	1.250
A1	0.000	---	0.008	0.000	---	0.200
A2	0.041	0.043	0.045	1.050	1.100	1.150
b	0.012	0.016	0.020	0.300	0.400	0.500
c	0.004	---	0.008	0.100	---	0.200
D	0.111	0.115	0.119	2.820	2.920	3.020
E	0.059	0.063	0.067	1.500	1.600	1.700
E1	0.104	0.110	0.116	2.650	2.800	2.950
e	0.037TYP			0.950TYP		
e1	0.071	0.075	0.079	1.800	1.900	2.000
L	0.024REF			0.600REF		
L1	0.012	0.018	0.024	0.300	0.450	0.600
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.

■ Marking Information



Note:

1. All marking is at middle of the product body
2. All marking is in laser printing
3. 101AL. is marking code
4. Body color: Black



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