





# YJL3400A

## Electrical Characteristics (T<sub>J</sub>=25 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> =250	30			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V			1	
Gate-Body Leakage Current	I <sub>GSS1</sub>	V <sub>GS</sub> = 12V, V <sub>DS</sub> =0V			100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> =250	0.65	0.9	1.5	V
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =5.6A		20	25	m
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =5A		23	31	
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =3A		27	45	
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =5.6A, V <sub>GS</sub> =0V			1.2	V
<b>Dynamic Parameters</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =15V, V <sub>GS</sub> =0V, f=1MHZ		630		pF
Output Capacitance	C <sub>oss</sub>			55		
Reverse Transfer Capacitance	C <sub>rss</sub>			71		
<b>Switching Parameters</b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, I <sub>D</sub> =5.6A		17.25		nC
Gate-Source Charge	Q <sub>gs</sub>			2.1		
Gate-Drain Charge	Q <sub>gd</sub>			2		
Reverse Recovery Charge	Q <sub>rr</sub>	I <sub>F</sub> =5.6A, di/dt=100A/us		1.1		ns
Reverse Recovery Time	t <sub>rr</sub>			13.1		
Turn-on Delay Time	t <sub>D(on)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, I <sub>D</sub> =5.6A R <sub>GEN</sub> =		4.4		ns
Turn-on Rise Time	t <sub>r</sub>			28.2		
Turn-off Delay Time	t <sub>D(off)</sub>			16.2		
Turn-off fall Time	t <sub>f</sub>			26		

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

B. R<sub>JA</sub> is the sum of the junction-to-case and case-to-ambient thermal resistance, where the case thermal reference is defined as the solder mounting surface of the drain pins. R<sub>JC</sub> is guaranteed by design, while R<sub>JA</sub> is determined by the board design. The maximum rating presented here is based on mounting on a 1 in 2 pad of 2oz copper.



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## ■ Typical Performance Characteristics

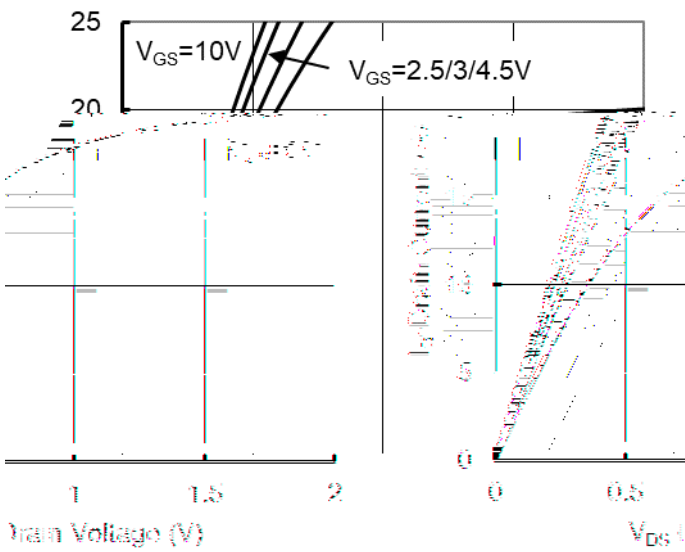


Figure1. Output Characteristics

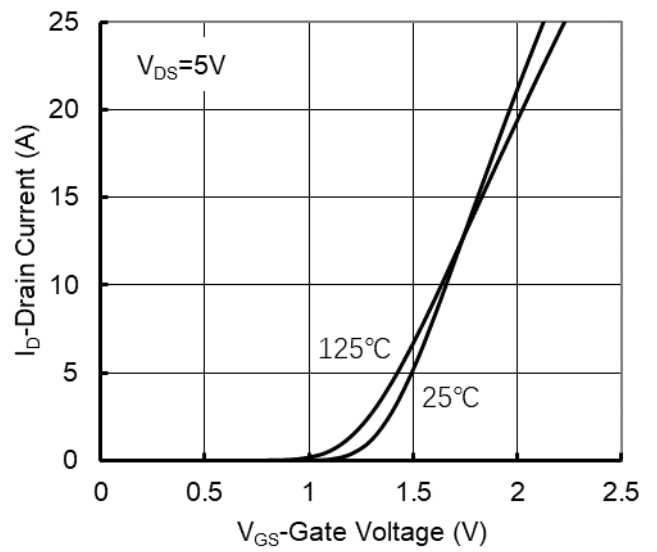


Figure2. Transfer Characteristics

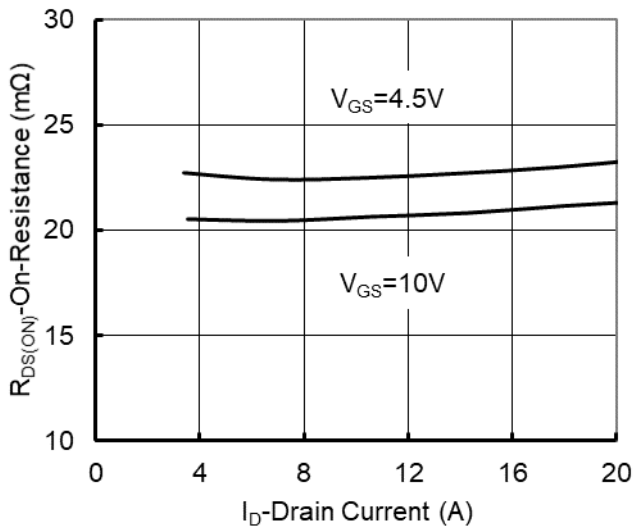


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

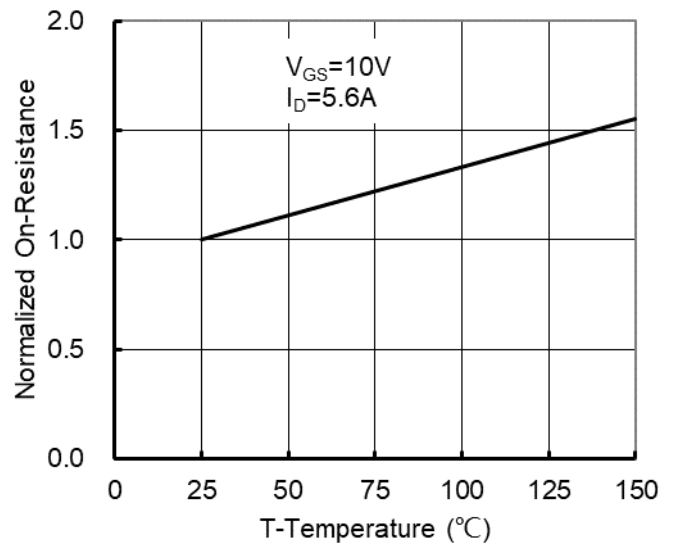


Figure 4: On-Resistance vs. Junction Temperature

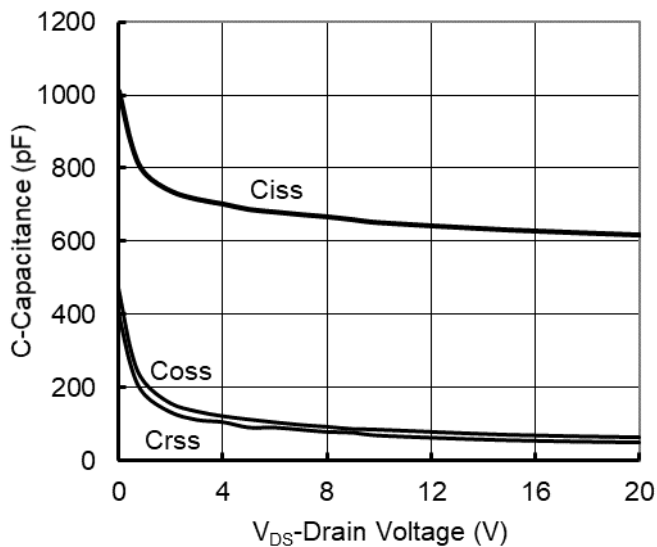


Figure5. Capacitance Characteristics

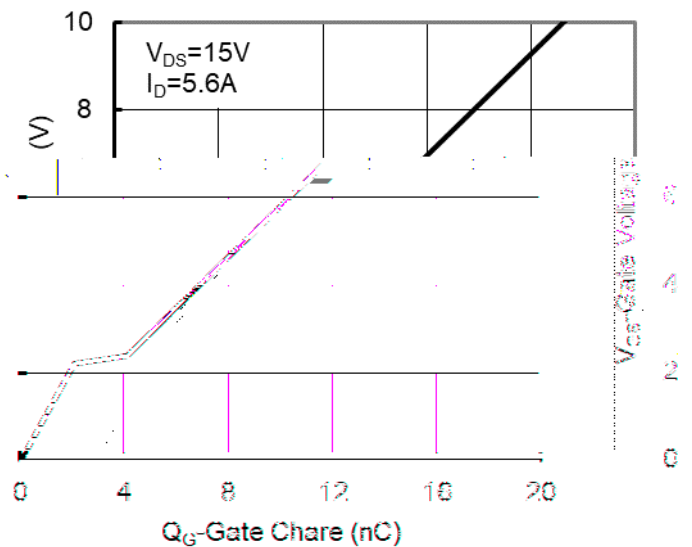


Figure6. Gate Charge



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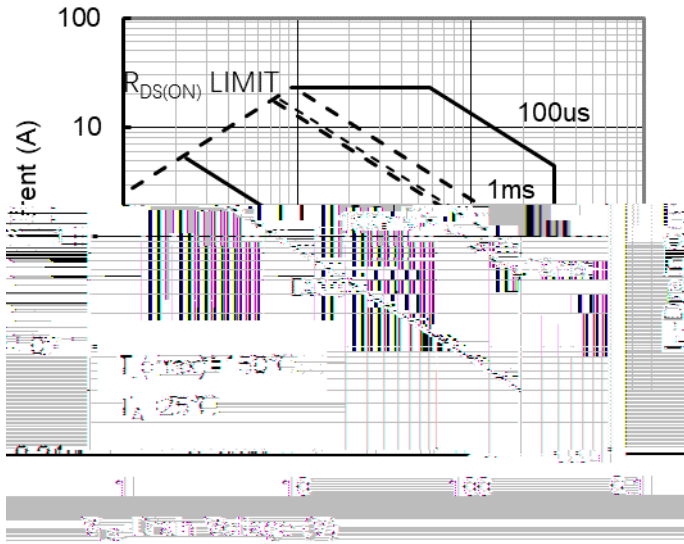


Figure7. Safe Operation Area

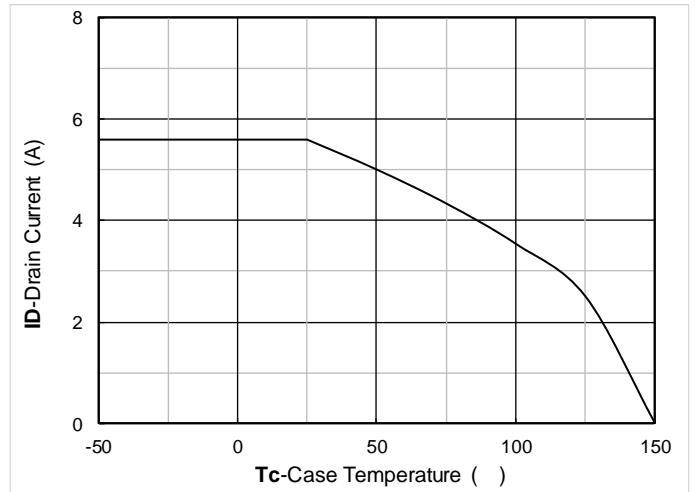


Figure8. Current dissipation

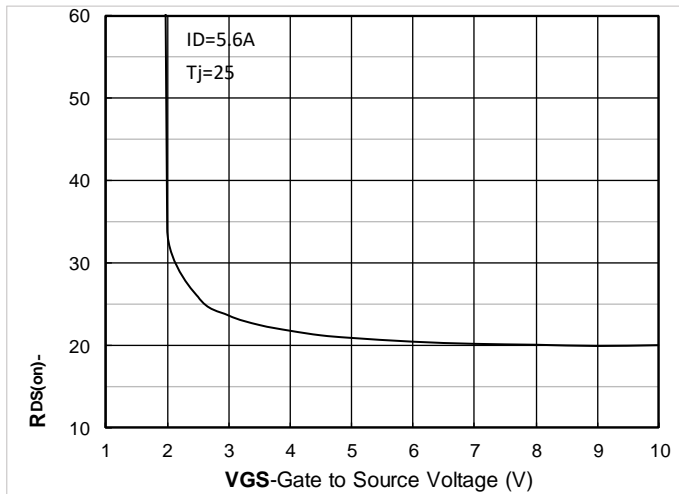


Figure 9. On-Resistance vs Gate to Source Voltage

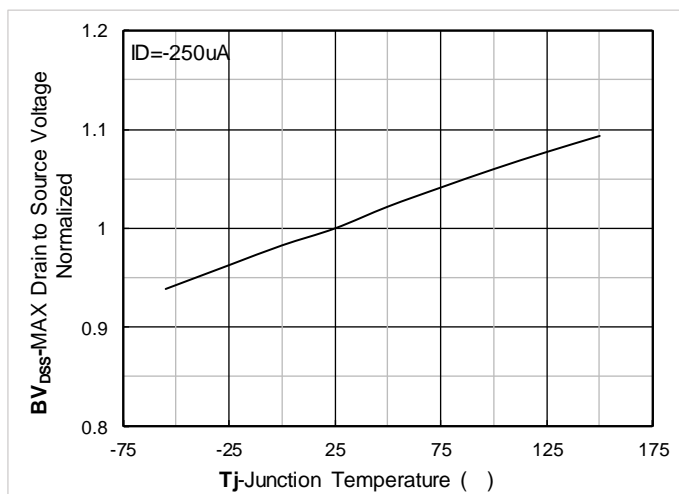
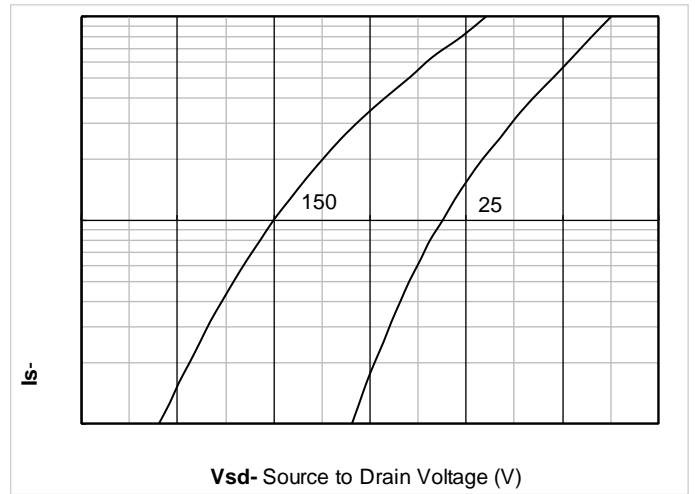


Figure 11. Normalized breakdown voltage



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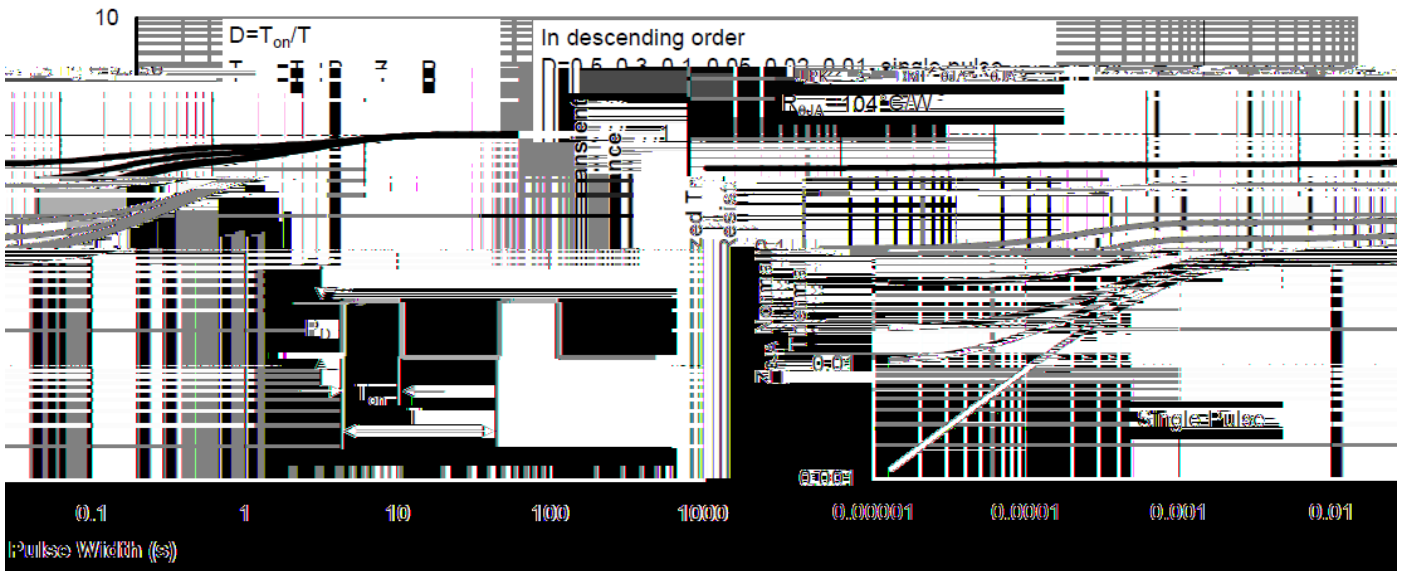
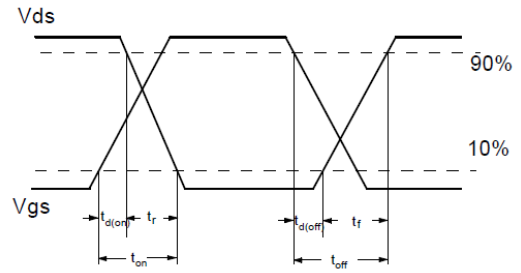
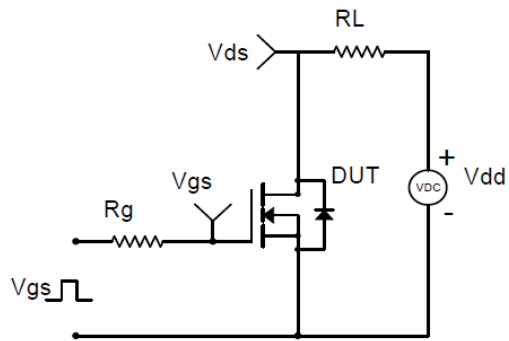
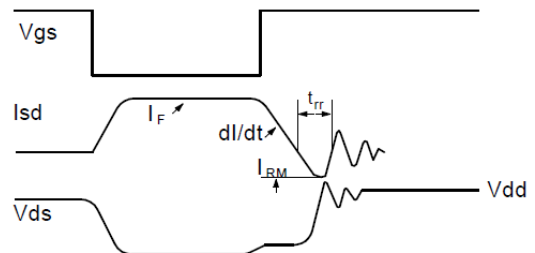
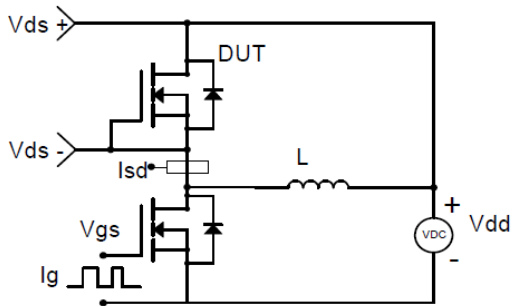


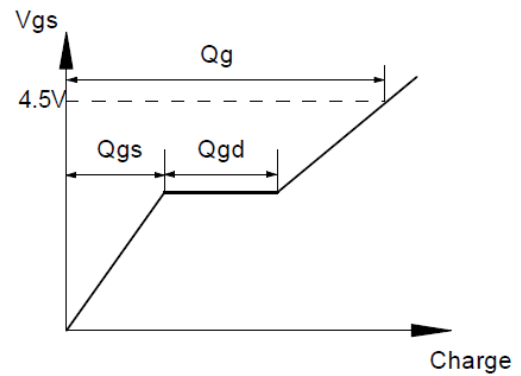
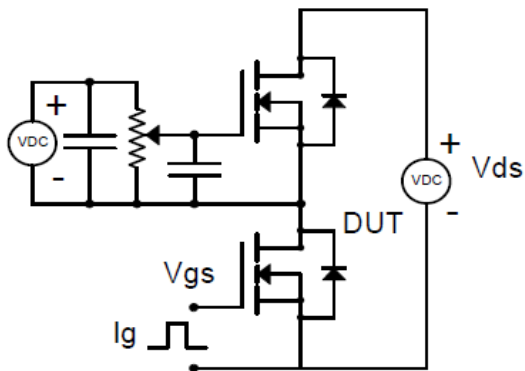
Figure13. Normalized Maximum Transient Thermal Impedance



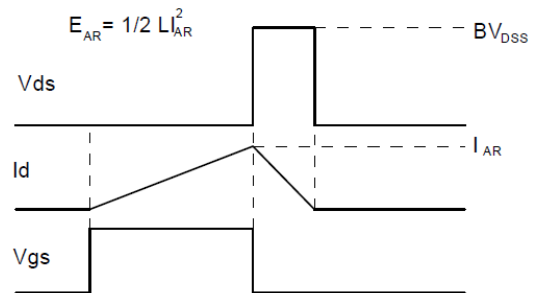
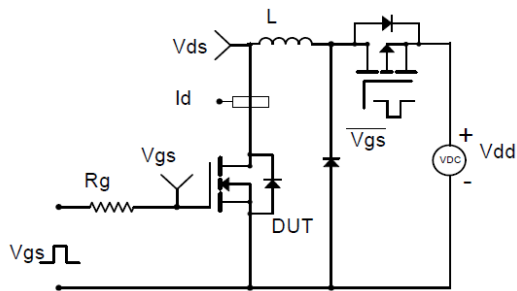
**Resistive Switching Test Circuit & Waveforms**



**Diode Recovery Test Circuit & Waveforms**



**Gate Charge Test Circuit & Waveform**



**Unclamped Inductive Switching (UIS) Test Circuit & Waveforms**



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## SOT-23 Package information

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UNIT mm

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.



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