



YJD60N04A

N-Channel Enhancement Mode Field Effect Transistor

Product Summary

V_{DS}	40 V
I_D	60 A
$R_{DS(ON)}$ (at $V_{GS}=10V$)	7.0 mohm
$R_{DS(ON)}$ (at $V_{GS}=4.5V$)	9.5 mohm
100% EAS Tested	
100% V_{DS} Tested	

General Description

Excellent package for heat dissipation
 High density cell design for low $R_{DS(ON)}$
 Moisture Sensitivity Level 1
 Epoxy Meets UL 94 V-0 Flammability Rating
 Halogen Free

Applications

High current load applications
 Load switching
 Hard switched and high frequency circuits
 Uninterruptible power supply

Absolute Maximum Ratings ($T_A=25$ unless otherwise noted)

Parameter	Symbol	Limit	Unit	
Drain-source Voltage	V_{DS}	40	V	
Gate-source Voltage	V_{GS}	20	V	
Drain Current	I_D	$T_C=25$	60	A
		$T_C=100$	38	
Pulsed Drain Current ^A	I_{DM}	200	A	
Total Power Dissipation	P_D	$T_C=25$	44	W
		$T_C=100$	17	W
Single Pulse Avalanche Energy ^B	E_{AS}	110	mJ	
Thermal Resistance Junction-to-Case ^C	R_{JC}	2.8	/W	
Junction and Storage Temperature Range	T_J, T_{STG}	-55 +150		

Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM
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Electrical Characteristics ($T_J=25$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250$	40			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=40V, V_{GS}=0V$	$T_J=25$		1	
			$T_J=150$			

Typical Performance Characteristics

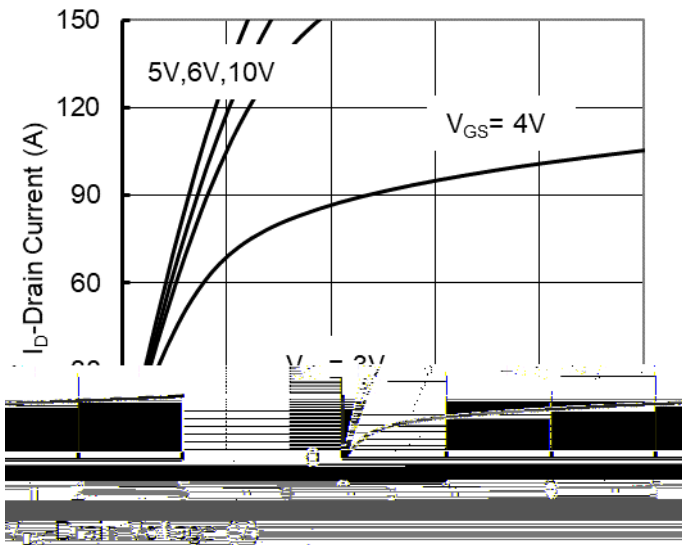


Figure 1. Output Characteristics

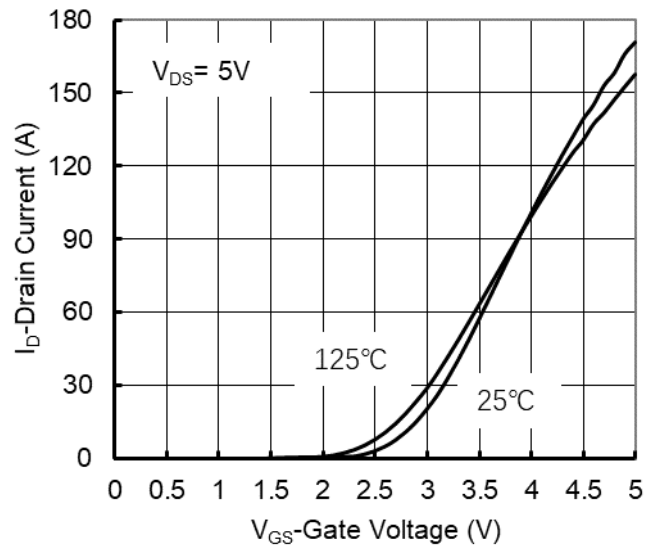


Figure 2. Transfer Characteristics

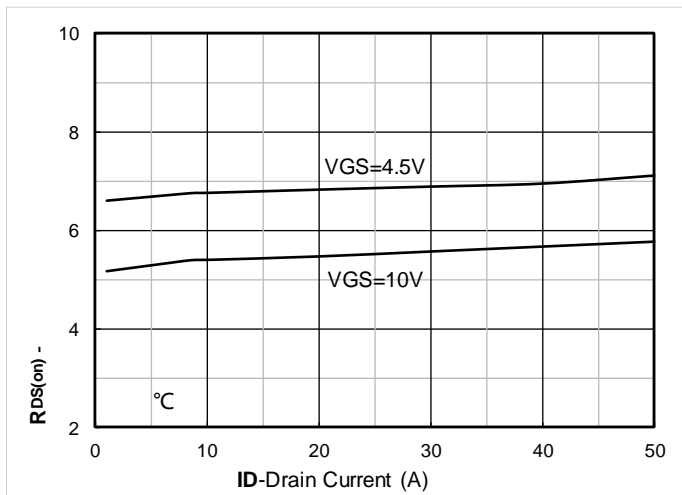


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

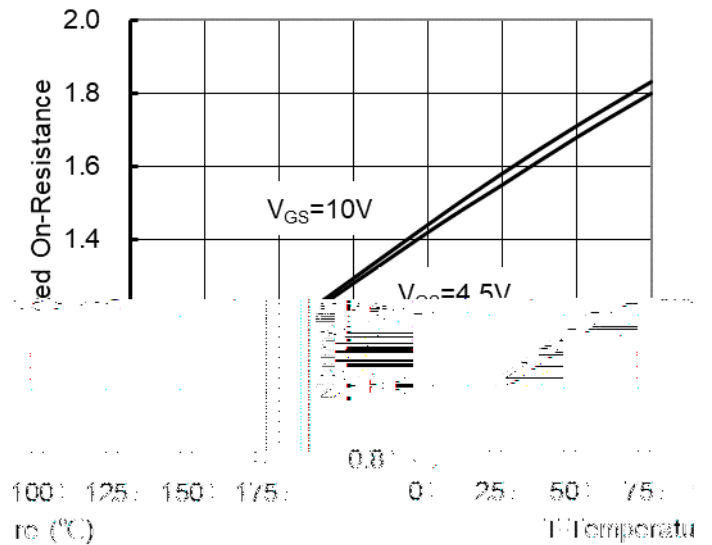


Figure 4. On-Resistance vs. Junction Temperature

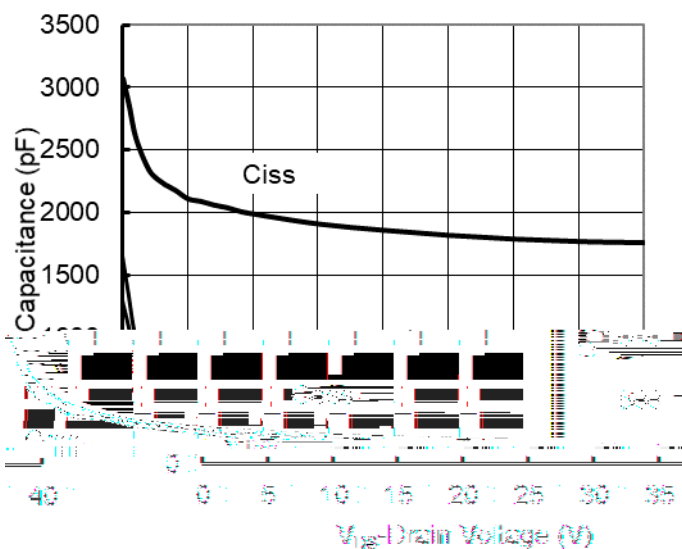


Figure 5. Capacitance Characteristics

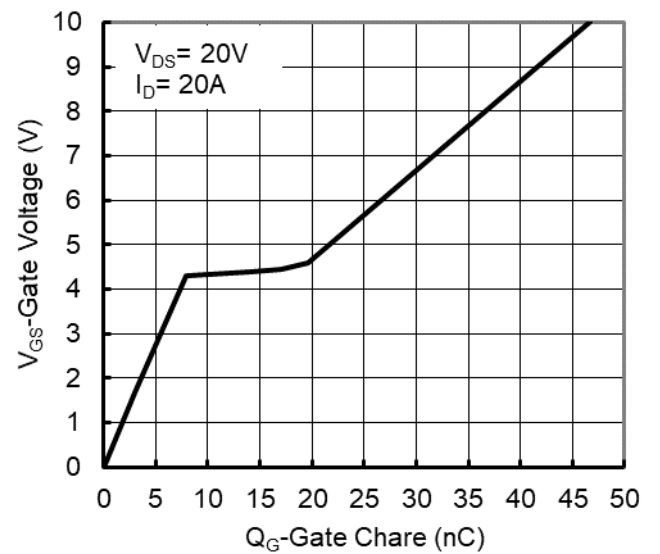


Figure 6. Gate Charge

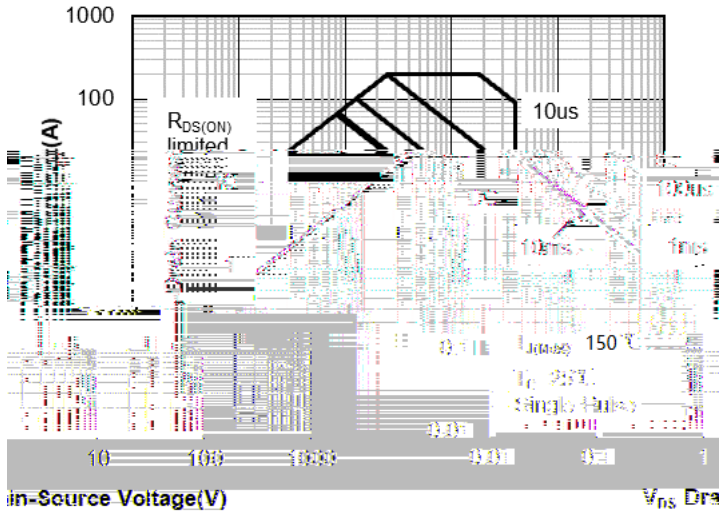


Figure 7. Safe Operation Area

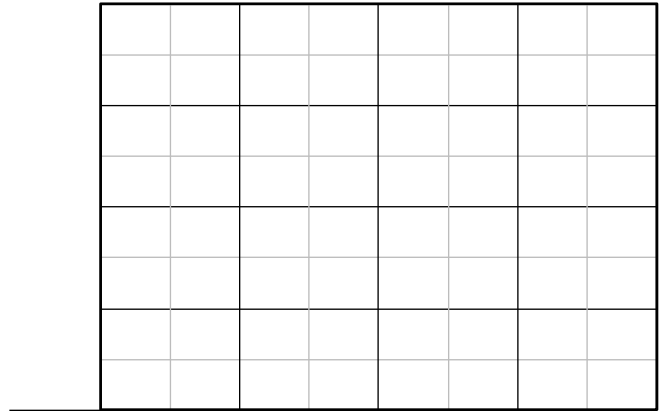


Figure 8. Maximum Continuous Drain Current vs Case Temperature

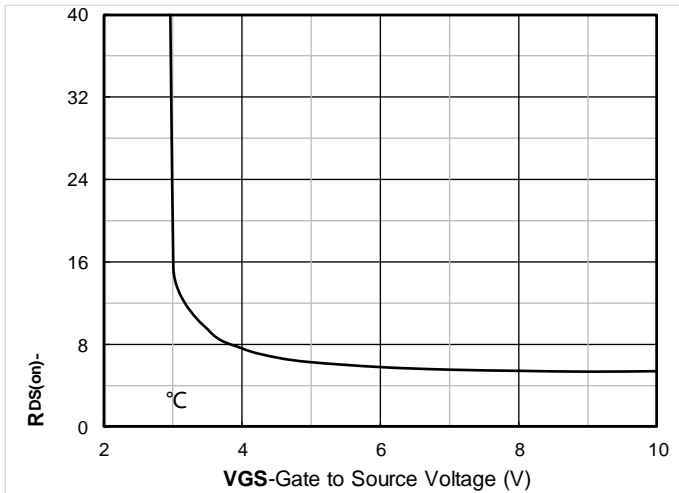


Figure 9. On-Resistance vs Gate to Source Voltage

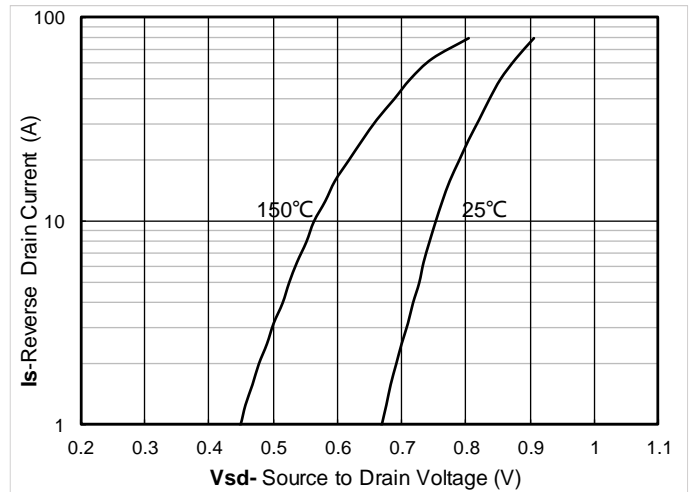


Figure 10. Forward characteristics of reverse diode

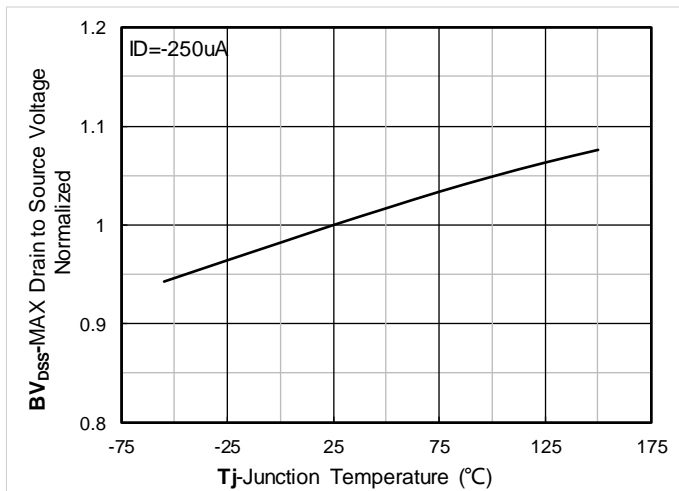


Figure 11. Normalized breakdown voltage

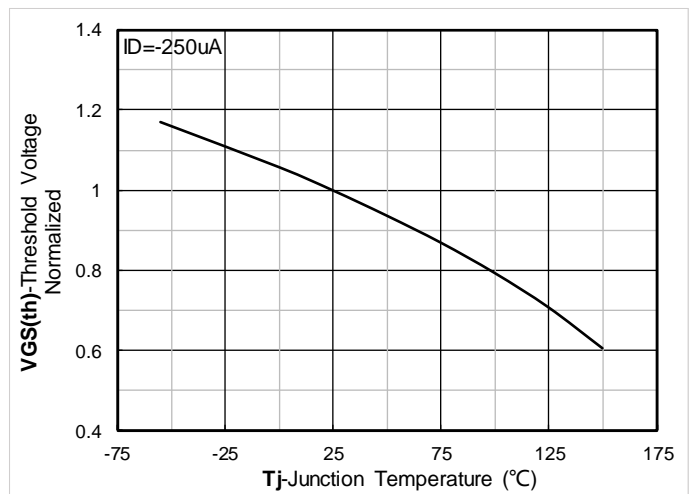


Figure 12. Normalized Threshold voltage



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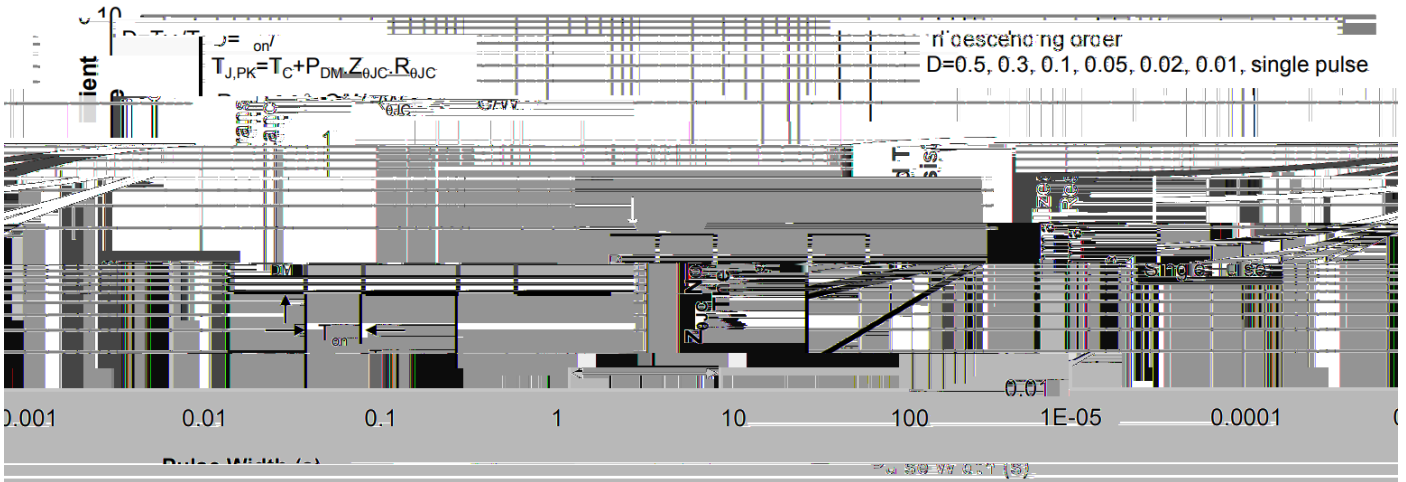
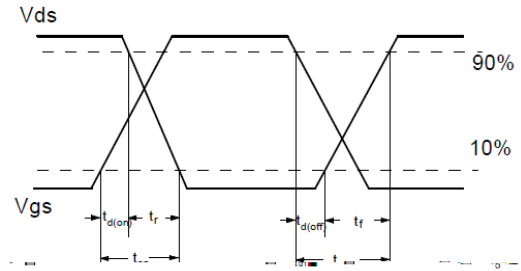
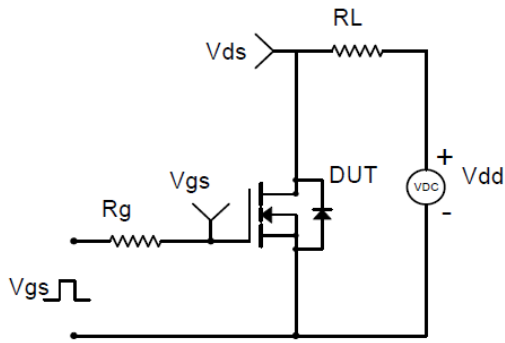
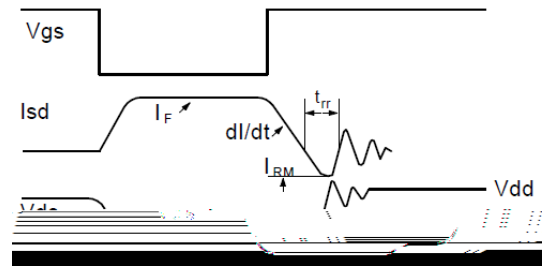
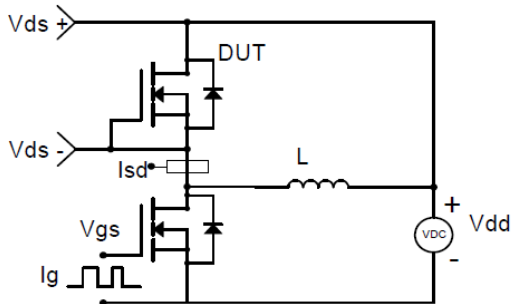


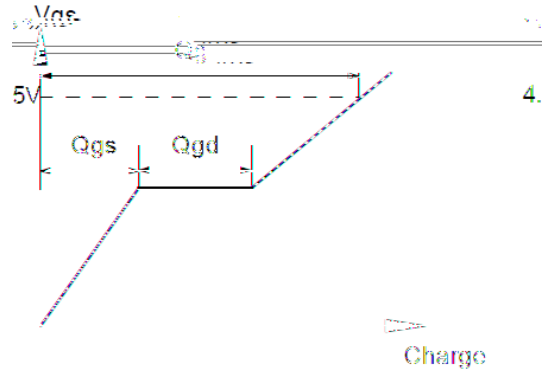
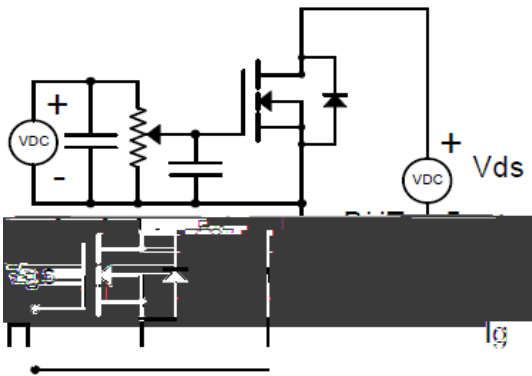
Figure 13. Normalized Maximum Transient Thermal Impedance



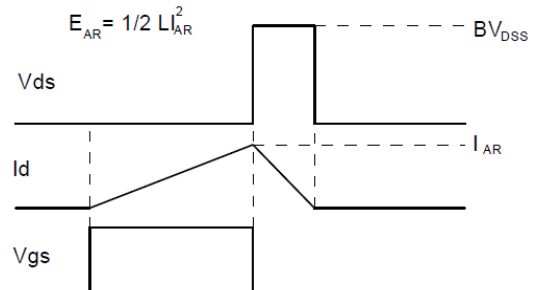
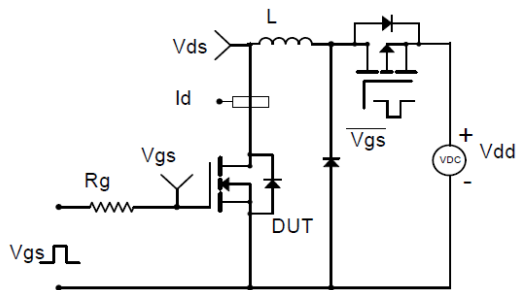
Resistive Switching Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms



Gate Charge Test Circuit & Waveform



Unclamped Inductive Switching (UIS) Test Circuit & Waveforms



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