



## N-Channel Enhancement Mode Field Effect Transistor

### Product Summary

$V_{DS}$	40 V
D	18 A
$R_{DS(ON)}$ (at $V_{GS}= 10V$ )	14 mohm
$R_{DS(ON)}$ (at $V_{GS}= 4.5V$ )	19 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



# YJG18N04A

## Electrical Characteristics ( $T_J=25$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
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	
			$T_J=150$		100	
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=20V, V_{DS}=0V$				

## Typical Performance Characteristics

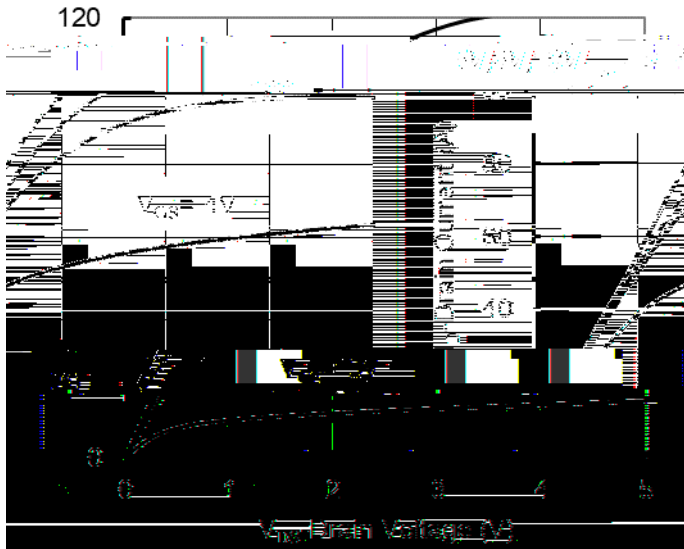


Figure 1. Output Characteristics

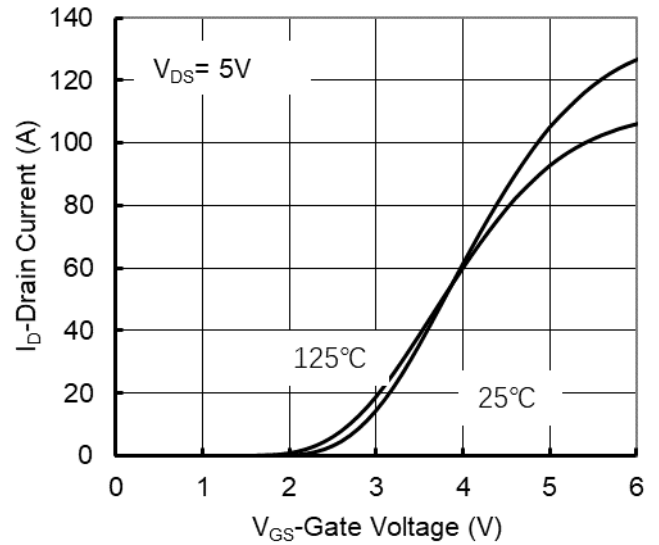


Figure 2. Transfer Characteristics

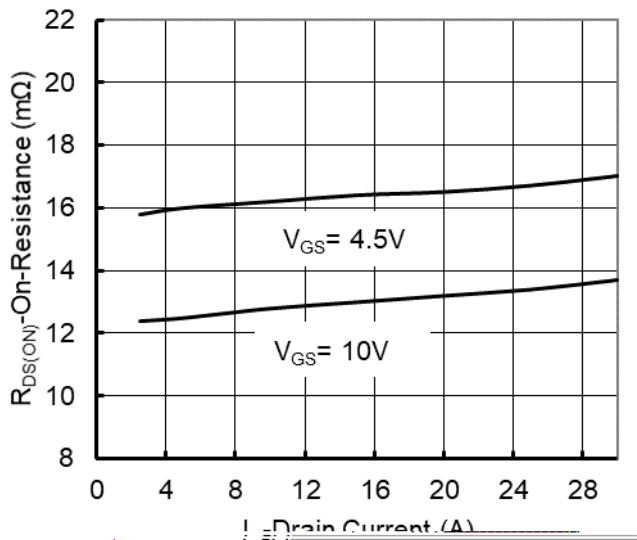


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

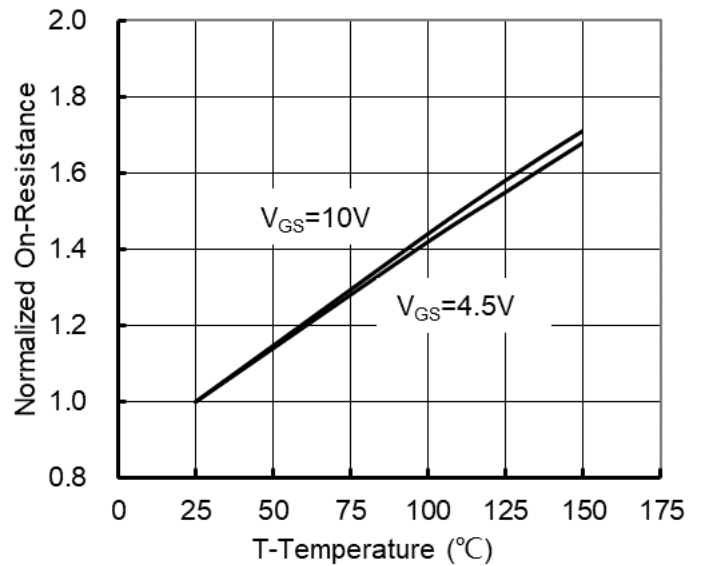


Figure 4. On-Resistance vs. Junction Temperature

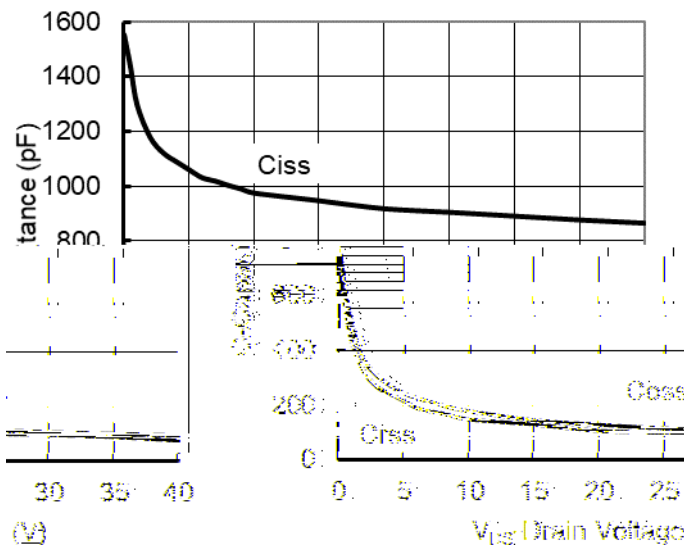


Figure 5. Capacitance Characteristics

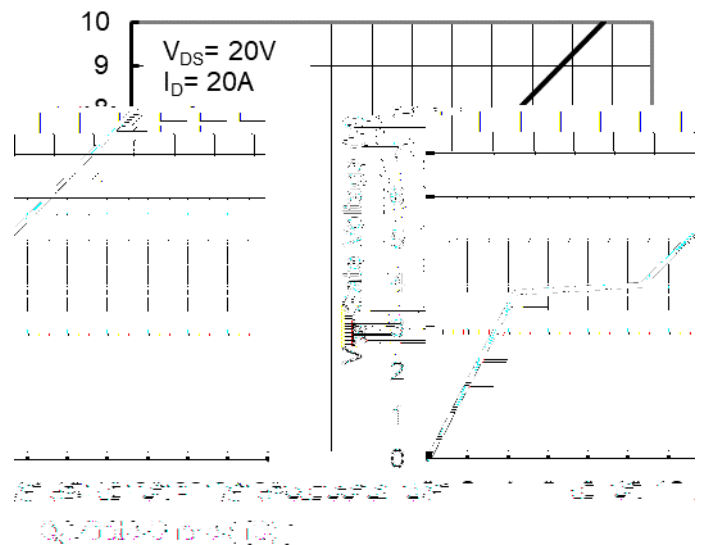


Figure 6. Gate Charge

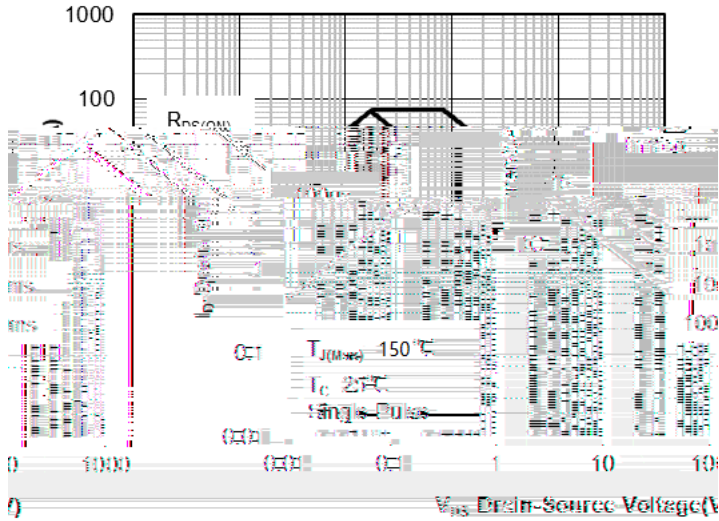


Figure 7. Safe Operation Area

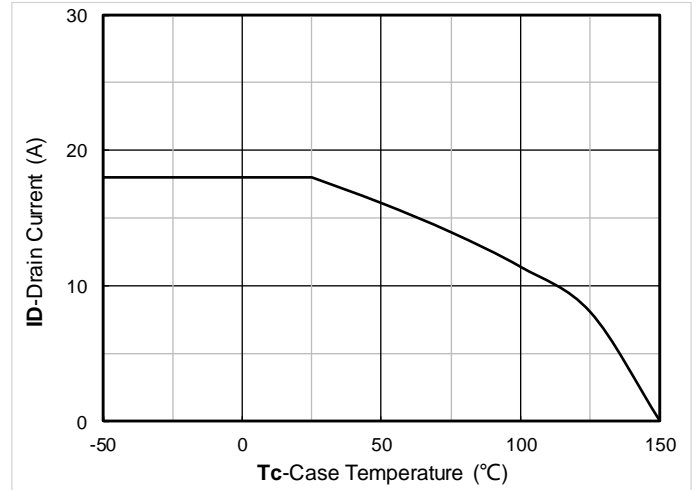


Figure 8. Maximum Continuous Drain Current vs Case Temperature

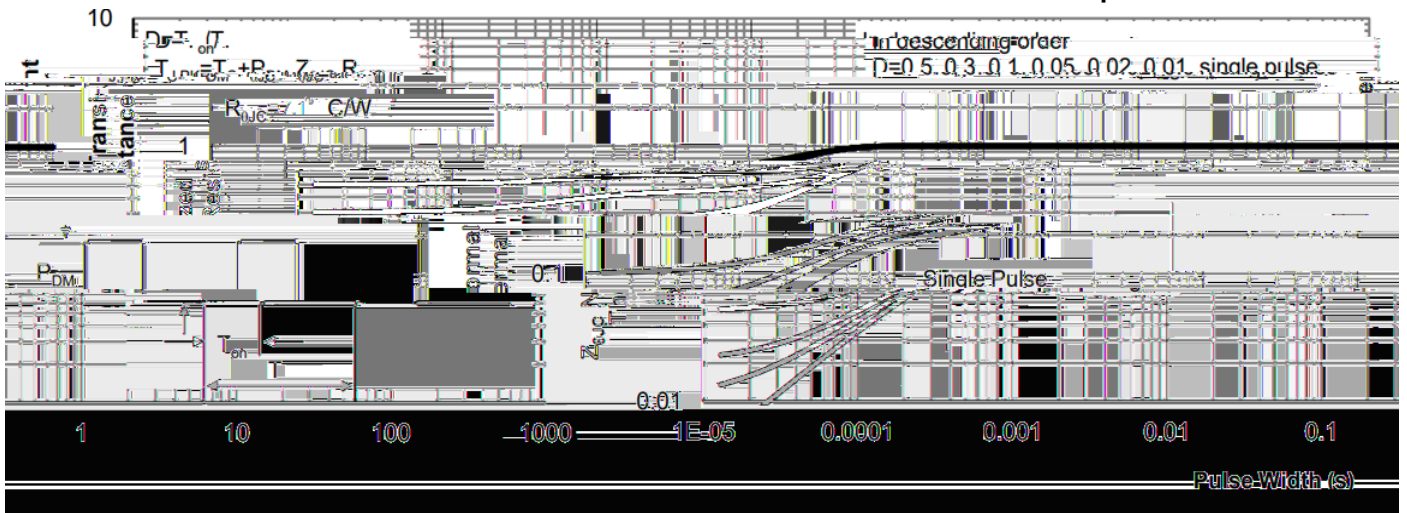
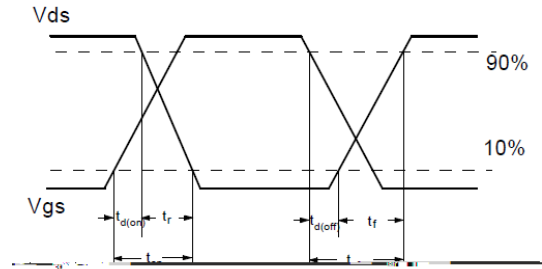
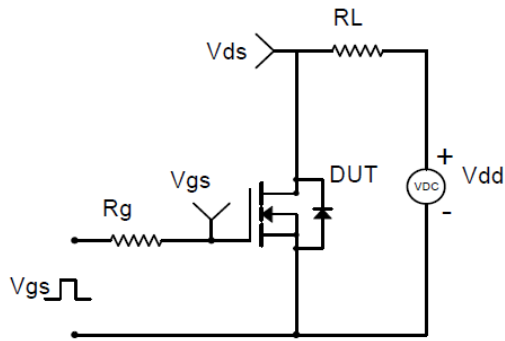
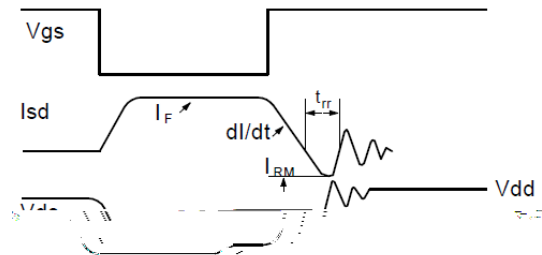
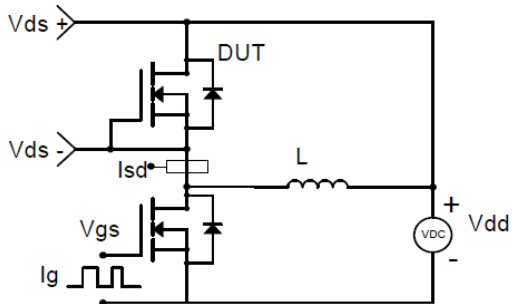


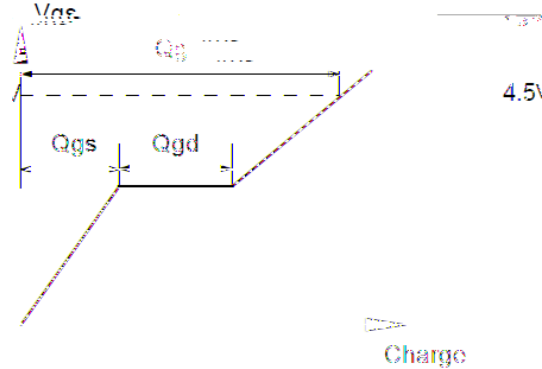
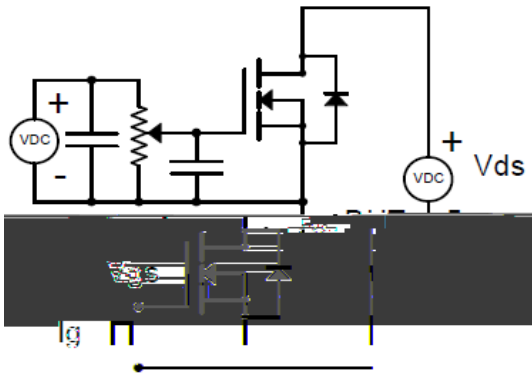
Figure 9. Normalized Maximum Transient Thermal Impedance



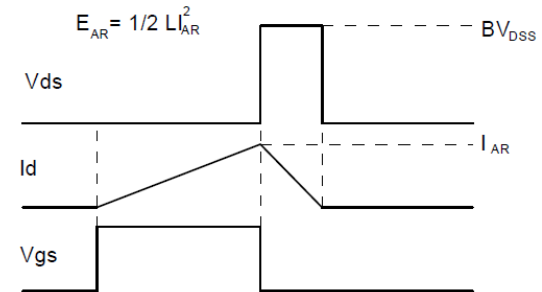
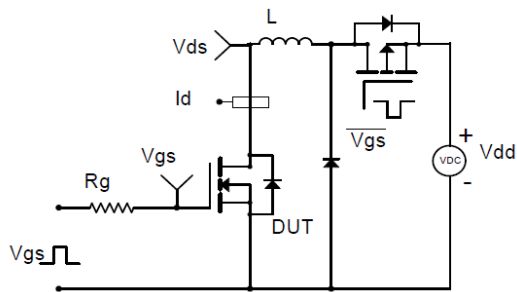
**Resistive Switching Test Circuit & Waveforms**



**Diode Recovery Test Circuit & Waveforms**



**Gate Charge Test Circuit & Waveform**

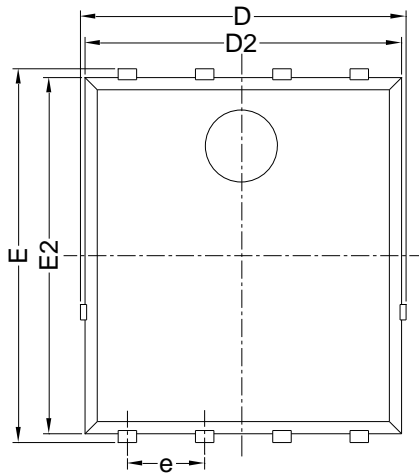


**Unclamped Inductive Switching (UIS) Test Circuit & Waveforms**

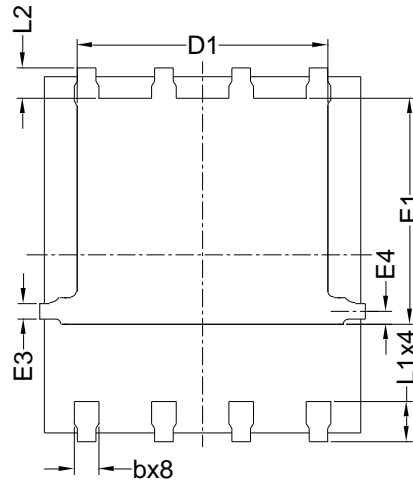


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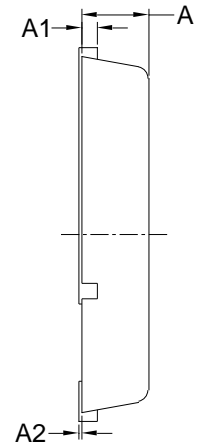
## PDFN5060-8L-B-1.1MM Package Information



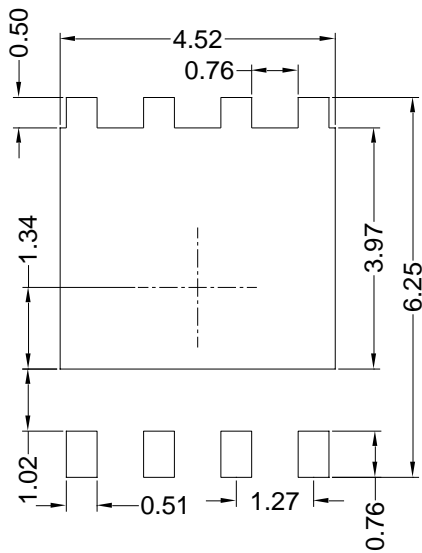
Top View



Bottom View



Side View



Suggested Solder Pad Layout  
Top View

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
D	5.15	5.35	5.55
E	5.95	6.15	6.35
A	1.00	1.10	1.20
A1	0.254 BSC		
A2			0.10
D1	3.92	4.12	4.32
E1	3.52	3.72	3.92
D2	5.00	5.20	5.40
E2	5.66	5.86	6.06
E3	0.254 REF		
E4	0.21 REF		
L1	0.56	0.66	0.76
L2	0.50 BSC		
b	0.31	0.41	0.51
e	1.27 BSC		

Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.10$ mm.
3. The pad layout is for reference purposes only.



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