



# YJG40N03A

## N-Channel Enhancement Mode Field Effect Transistor

### Product Summary

$V_{DS}$	30V
$I_D$	40A
$R_{DS(ON)}$ ( at $V_{GS}=10V$ )	7.5mohm
$R_{DS(ON)}$ ( at $V_{GS}=4.5V$ )	11.5mohm
100% EAS Tested	
100% $V_{DS}$ Tested	

### General Description

Trench Power LV MOSFET technology  
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
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## Electrical Characteristics ( $T_J=25$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250$	30			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=30V, V_{GS}=0V$			1	
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$			$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250$	1.0	1.5	2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=15A$		5.5	7.5	m
		$V_{GS}=4.5V, I_D=15A$		9.5	11.5	
Diode Forward Voltage	$V_{SD}$	$I_S=15A, V_{GS}=0V$		0.85	1.2	V
Gate resistance	$R_G$	$f=1MHz$	-	1.8	-	
Maximum Body-Diode Continuous Current	$I_S$				40	A
<b>Dynamic Parameters</b>						
Input Capacitance	$C_{iss}$			1015		

$V_{DS}=15V, V_{GS}=0V, f=1MHz$



Typical Performance Characteristics

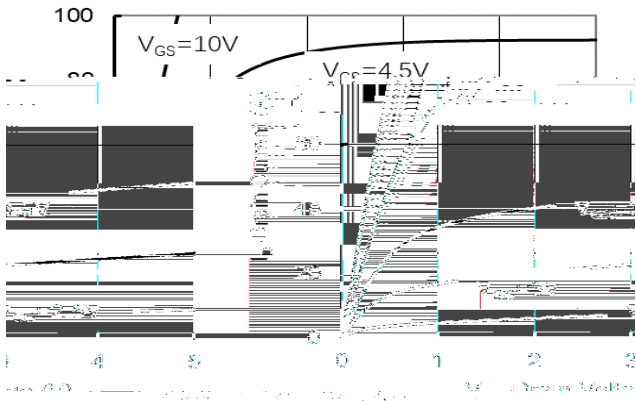


Figure1. Output Characteristics

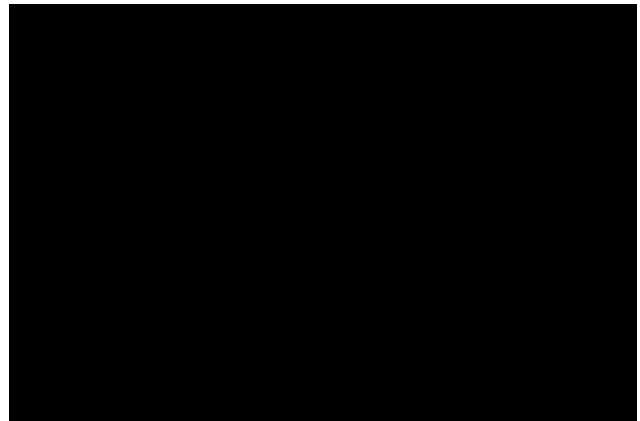


Figure2. Transfer Characteristics

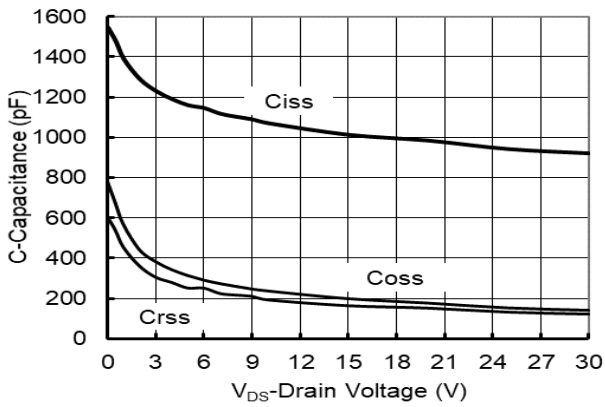


Figure3. Capacitance Characteristics

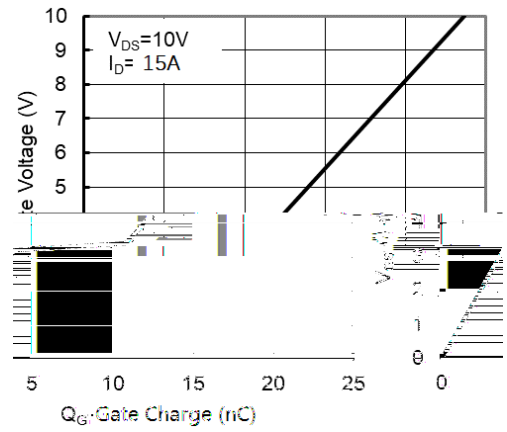


Figure4. Gate Charge

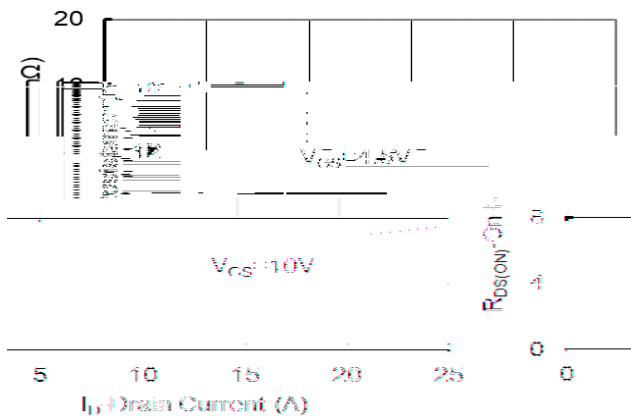


Figure5. Drain-Source on Resistance

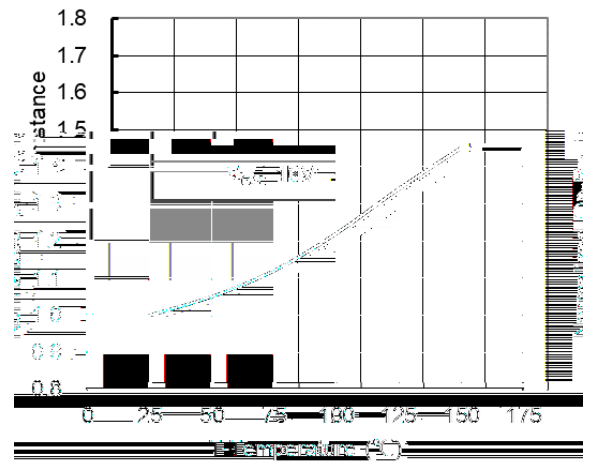


Figure6. Drain-Source on Resistance



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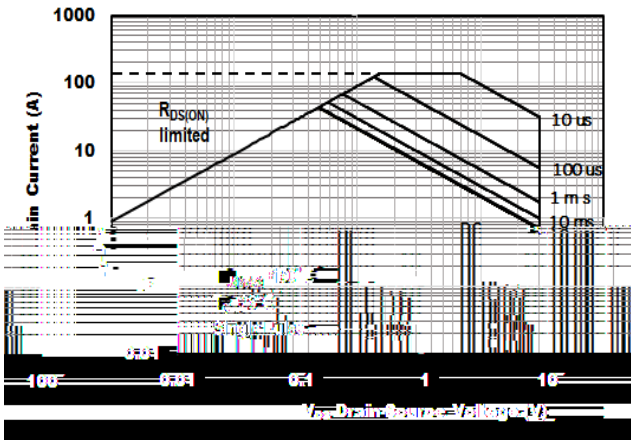


Figure7. Safe Operation Area

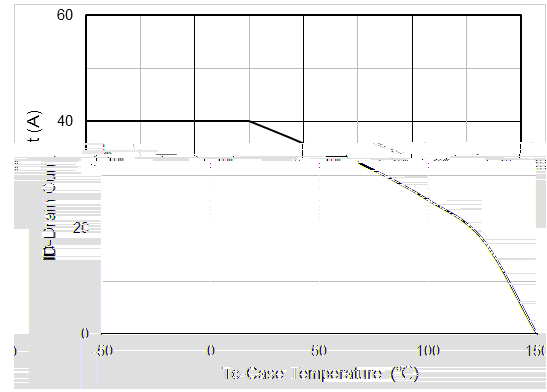


Figure8. Drain current vs. Case Temperature

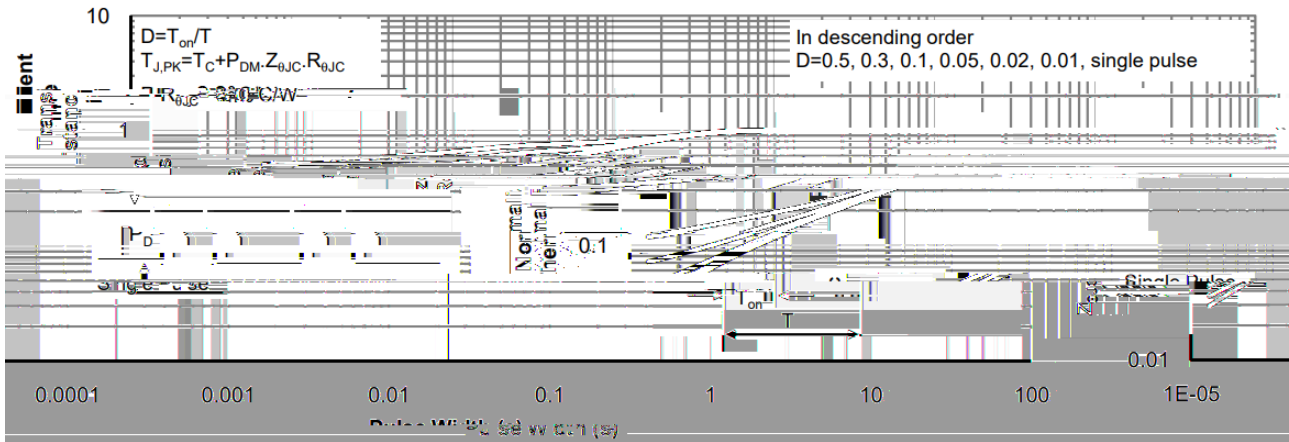
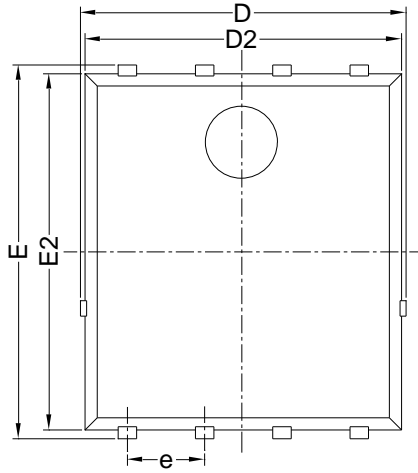


Figure 9. Normalized Maximum Transient Thermal Impedance

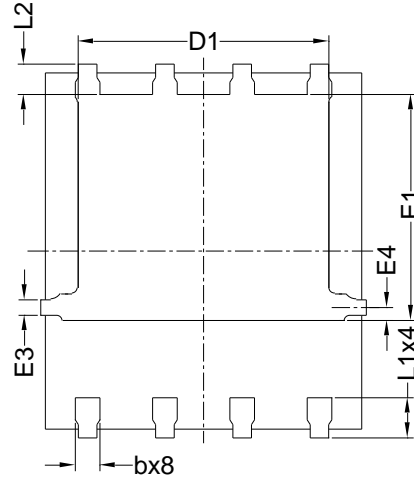


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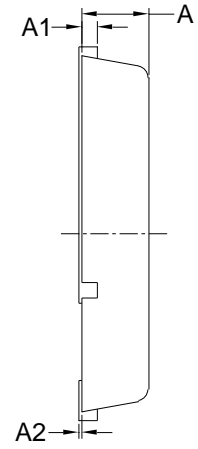
## PDFN5060-8L-B-1.1MM Package Information



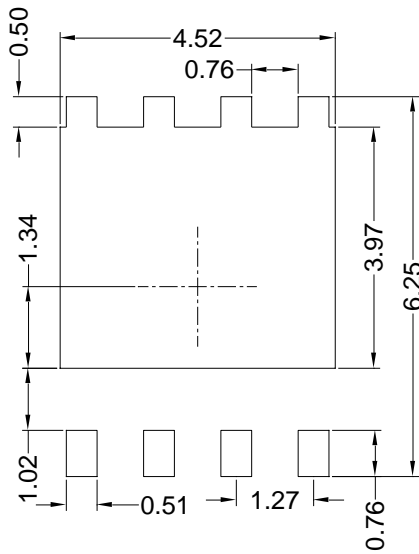
Top View



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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