



# YJB118G08H

## N-Channel Enhancement Mode Field Effect Transistor

### Product Summary

$V_{DS}$	85V
$I_D$	118A
$R_{DS(ON)}$ ( at $V_{GS}=10V$ )	6 mohm
$R_{DS(ON)}$ ( at $V_{GS}=6V$ )	9 mohm
100% UIS Tested	
100% $V_{DS}$ Tested	

### General Description

Split gate trench MOSFET technology  
Excellent package for heat dissipation  
High density cell design for low  $R_{DS(ON)}$

### Applications

Battery management  
AC/DC control and drive  
UPS (Uninterruptible Power Supplies)

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

Parameter		Symbol	Limit	Unit
Drain-source Voltage		$V_{DS}$	85	V
Gate-source Voltage		$V_{GS}$	$\pm 20$	V
Drain Current	$T_C=25$	$I_D$	118	A
	$T_C=100$		74.6	
Pulsed Drain Current <sup>A</sup>		$I_{DM}$	472	



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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	$BV_{DSS}$	$V_{GS}=0V, I_D=250 \mu A$	85	-	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=85V, V_{GS}=0V$	-	-	1	$\mu A$
		$V_{DS}=85V, V_{GS}=0V, T_J=150$	-	-	100	
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250 \mu A$	2	3	4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=59A$	-	4.5	6	m
		$V_{GS}=10V, I_D=20A$	-	4.5	6	
		$V_{GS}=6V, I_D=20A$	-	7	9	
Diode Forward Voltage	$V_{SD}$	$I_S=59A, V_{GS}=0V$	-	0.9	1.2	V
Gate resistance	$R_G$	$f=1MHz, \text{Open drain}$	-	1.8	-	
Maximum Body-Diode Continuous Current	$I_S$		-	-	118	A
<b>Dynamic Parameters</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=25V, V_{GS}=0V, f=1MHz$	-	4400	-	$\mu F$
Output Capacitance	$C_{oss}$		-	1650	-	
Reverse Transfer Capacitance	$C_{rss}$		-	150	-	
<b>Switching Parameters</b>						
Total Gate Charge	$Q_g$	$V_{GS}=10V, V_{DS}=40V, I_D=59A$	-	63	-	nC
Gate-Source Charge	$Q_{gs}$		-	20	-	
Gate-Drain Charge	$Q_{gd}$		-	22	-	
Reverse Recovery Charge	$Q_{rr}$	$I_F=59A, di/dt=300A/\mu s$	-	85	-	nC
Reverse Recovery Time	$t_{rr}$		-	33	-	ns
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=10V, V_{DD}=40V, I_D=59A$ $R_{GEN}=2.2$	-	20	-	ns
Turn-on Rise Time	$t_r$		-	100	-	
Turn-off Delay Time	$t_{D(off)}$		-	24	-	
Turn-off fall Time	$t_f$		-	7	-	

A. Repetitive rating; pulse width limited by max. junction temperature.

B.  $T_J=25$ ,  $V_{DD}=50V, V_G=10V, R_G=5\Omega, L_G=0.5mH, I_{AS}=39A$ .

C.  $P_d$  is based on max. junction temperature, using junction-case thermal resistance.

D. The value of  $R_{\theta JE}$  is measured with the device mounted on 1in2 FR-4 board with 2oz. Copper, in a still air environment with  $T_A=25$ . The maximum allowed junction temperature of 150. The value in any given application depends on the user's specific board design.



## Typical Electrical and Thermal Characteristics Diagrams

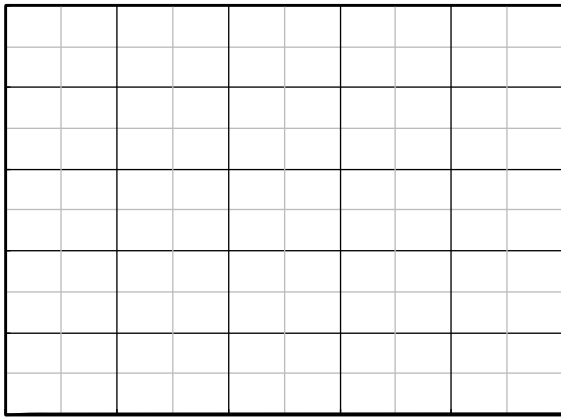


Figure1. Output Characteristics

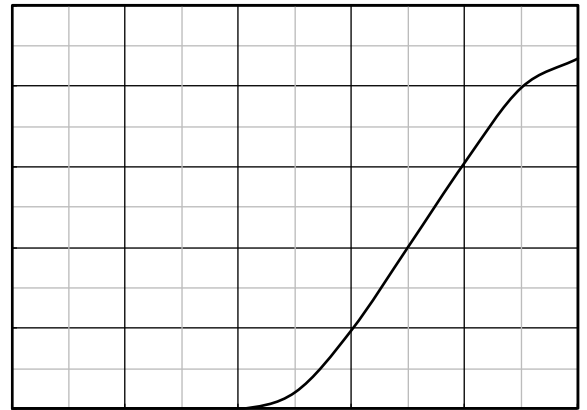


Figure2. Transfer Characteristics

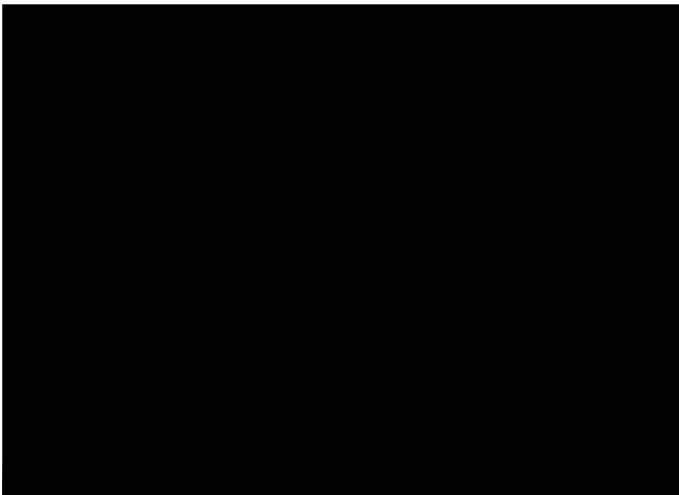


Figure3. Capacitance Characteristics

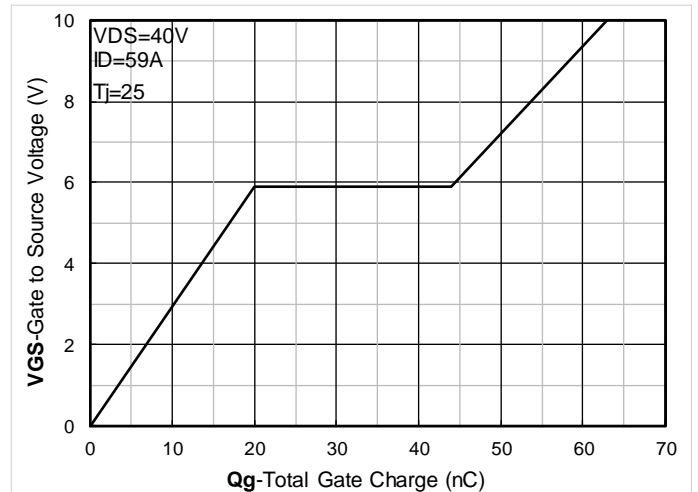


Figure4. Gate Charge

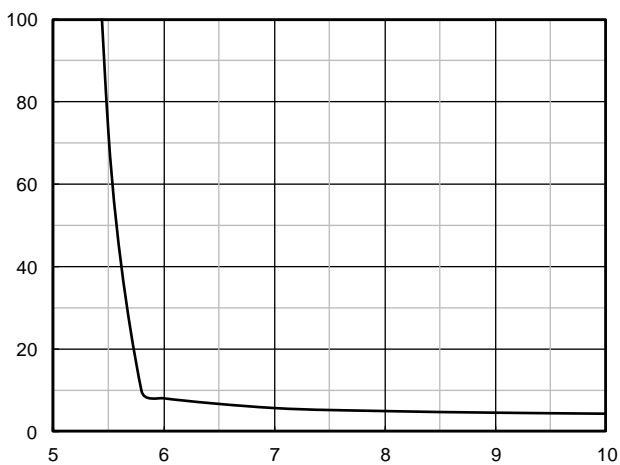


Figure5. On-Resistance vs Gate to Source Voltage

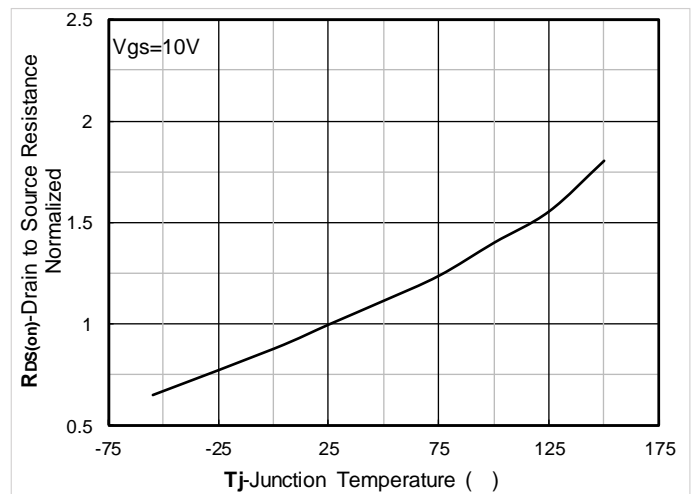


Figure6. Normalized On-Resistance



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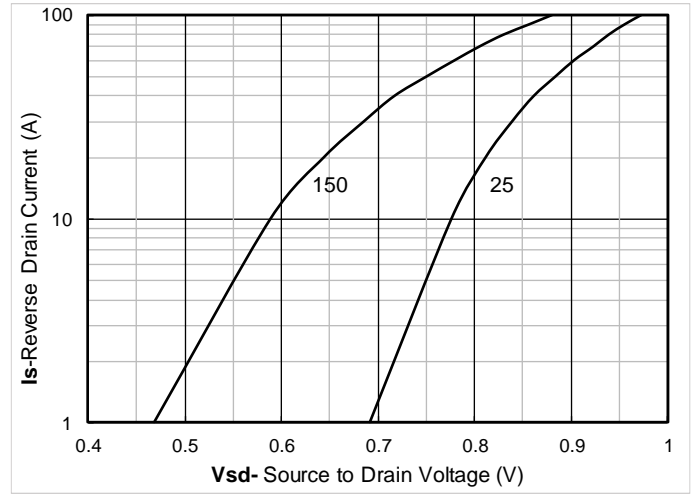
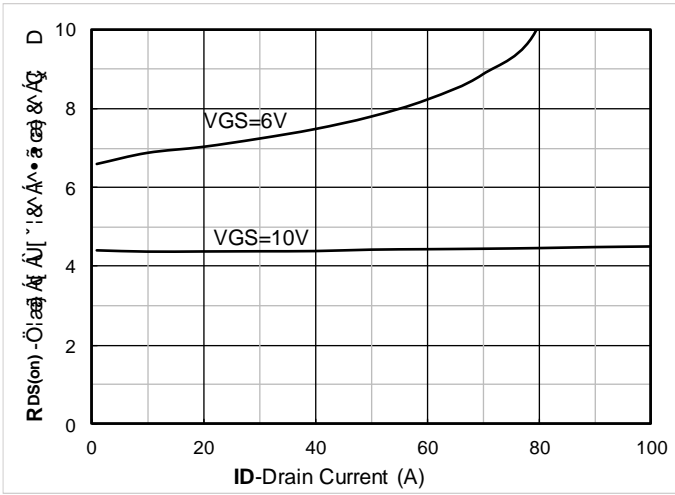


Figure7.  $R_{DS(on)}$  vs.  $I_D$ .





TO-263-HY Package information

SYM.	MIN.	
A2		
b2		0.050
c		
c2		
D2		
E		
E1		



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