



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
- Motor control and drive
- UPS (Uninterruptible Power Supplies)

✓ Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	85	V
Gate-source Voltage		V_{GS}	± 20	V
Drain Current	$T_C=25$	I_D	118	A
	$T_C=100$		74.6	
Pulsed Drain Current ^A		I_{DM}	472	



YJB118G08H

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 =250εA	85	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =85V, V _{GS} =0V	-	-	1	εA
		V _{DS} =85V, V _{GS} =0V, T _j =150	-	-	100	
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ± 20V, V _{DS} =0V	-	-	± 100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250εA	2	3	4	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =59A	-	4.5	6	mq
		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, Open drain	-	1.8	-	q
Maximum Body-Diode Continuous Current	I _S		-	-	118	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHz	-	4400	-	pF
Output Capacitance	C _{oss}		-	1650	-	
Reverse Transfer Capacitance	C _{rss}		-	150	-	
Switching Parameters						
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/us	-	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} =2.2q	-	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=25Ω, L=0.5mH, I_{AS}=39A.

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

D. The value of R_{θJA} 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

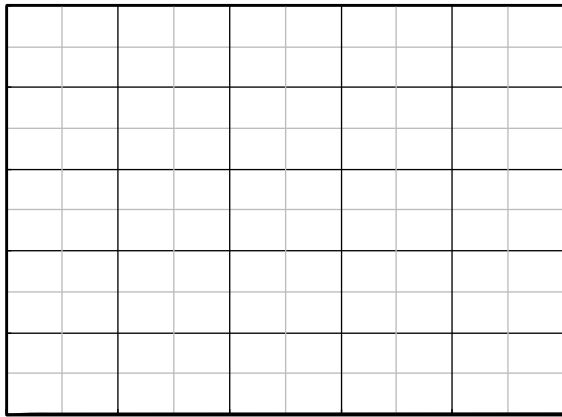


Figure1. Output Characteristics

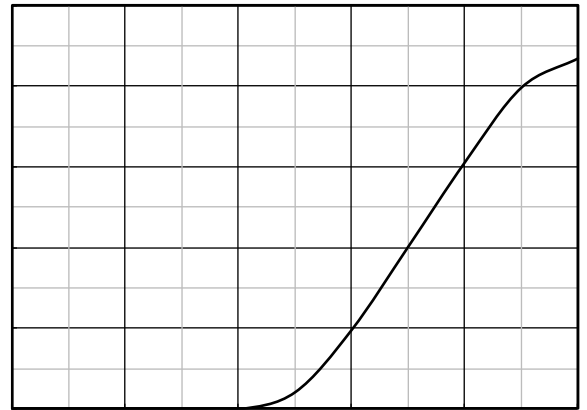


Figure2. Transfer Characteristics

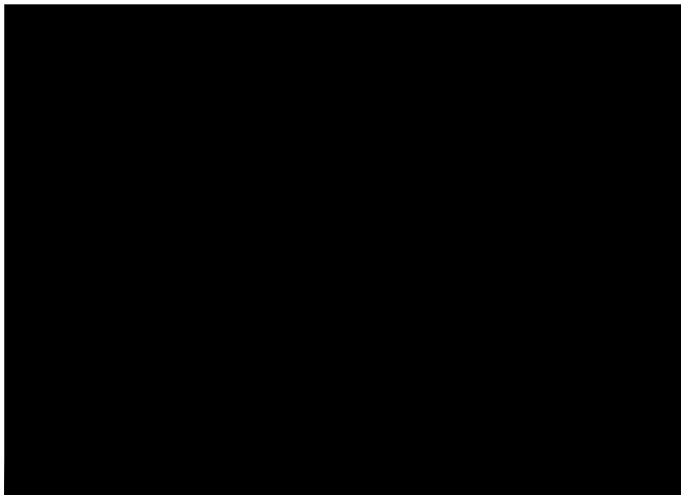


Figure3. Capacitance Characteristics

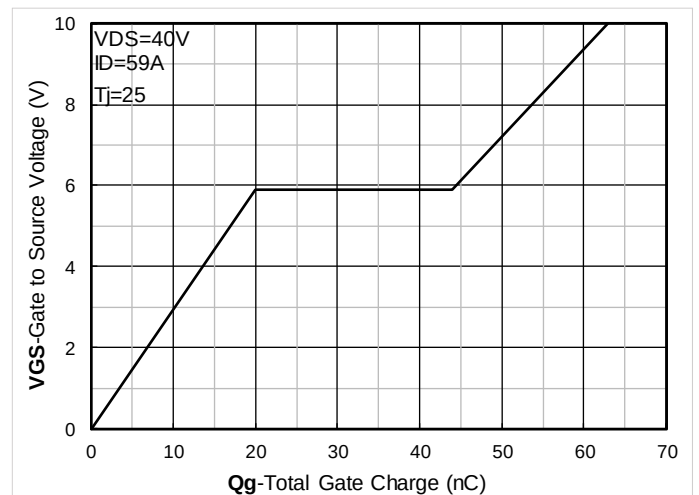


Figure4. Gate Charge

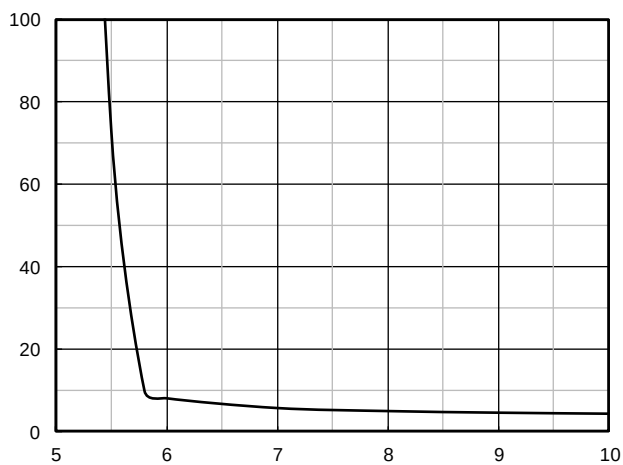


Figure5. On-Resistance vs Gate to Source Voltage

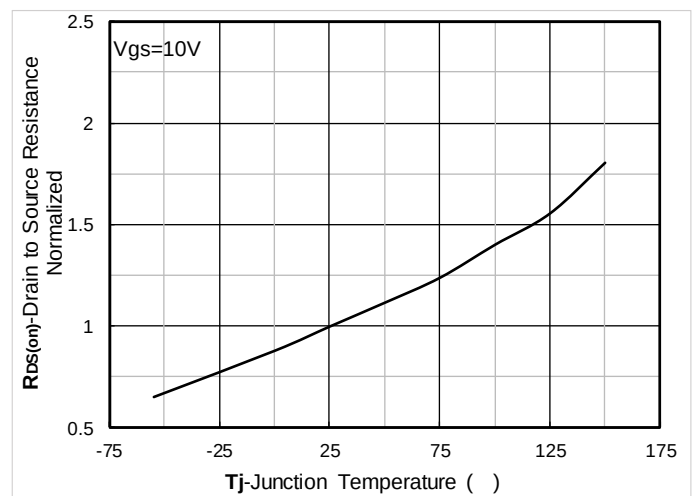


Figure6. Normalized On-Resistance

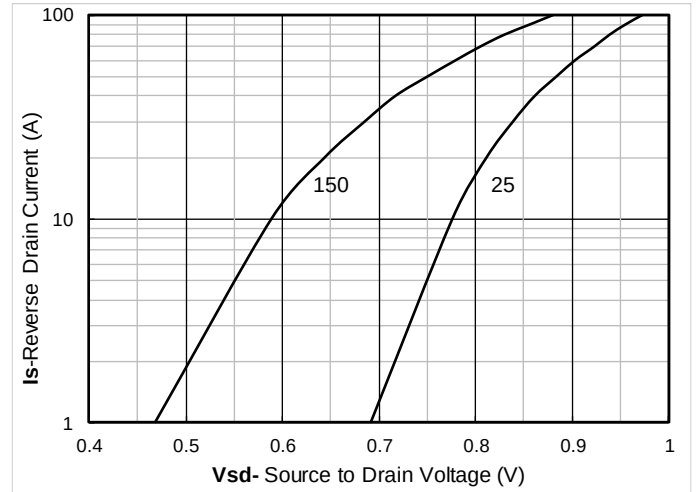
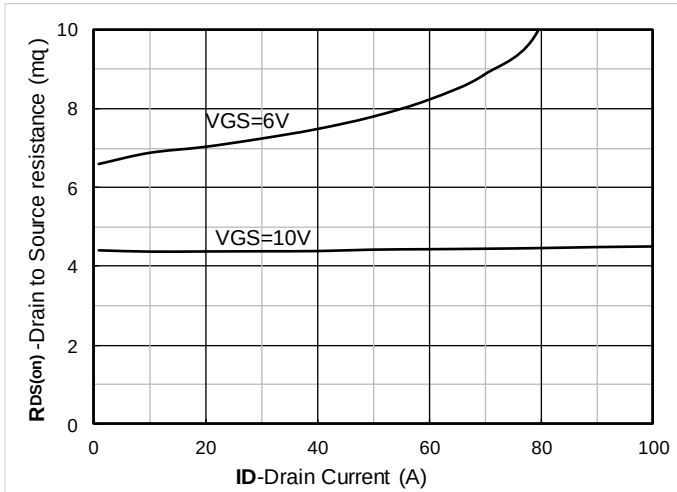


Figure7. $R_{DS(on)}$ o., Ltd.



TO-263-HY Package information

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



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