N-Channel Enhancement Mode MOSFET

BL065N08THD

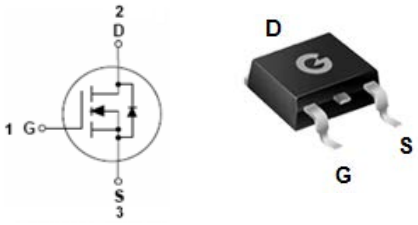
Features

HF

- Extremely low on-resistance $R_{DS(ON)}$
- Excellent gate charge x $R_{DS(on)}$ product(FOM)
- Uses advanced SGT technology

Mechanical Data

- Case: TO-252
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



TO-252

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL065N08THD	TO-252	80 pcs / Tube & 2500 pcs / Tape & Reel	065N08THD

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DSS}	80	V
Gate-to-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current (T_C = 25°C, Silicon limit)	I_D	112	A
Continuous Drain Current (T_C = 100°C Silicon limit)	I_D	71	A
Pulsed Drain Current (T_C = 25°C, tp limited by T_J max.)	I_{DM}	440	A
Single Pulse Avalanche Energy(L = 0.5mH, R_G = 25 Ω)	E_{AS}	552	mJ

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (T_C = 25°C)	P_D	142	W
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	0.88	°C/W
Operating Junction Temperature Range	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Electrical Characteristics (@ T_J = 25°C unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
V_{DSS}	Drain-Source Breakdown Voltage	V_{GS} = 0V, I_D = 250μA	80	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 80V, V_{GS} = 0V, T_J = 25°C	-	-	1	μA
		V_{DS} = 800V, V_{GS} = 0V, T_J = 125°C	-	-	5	μA
I_{GSS}	Gate-Body Leakage Current	V_{GS} = ±20V, V_{DS} = 0V	-	-	±100	nA
On Characteristics						
$R_{DS(ON)}$	Static Drain-Source On-resistance	V_{GS} = 10V, I_D = 50A	-	-	6.5	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250μA	2	-	4	V
Dynamic Characteristics						
C_{ISS}	Input Capacitance	V_{GS} = 0V V_{DS} = 40V f = 1.0MHz	-	3475	-	pF
C_{OSS}	Output Capacitance		-	770	-	
C_{RSS}	Reverse Transfer Capacitance		-	25	-	
Switching Characteristics						
$t_{d(ON)}$	Turn-on Delay Time	V_{DD} = 40V V_{GS} = 10V R_L = 3Ω	-	17.3	-	ns
t_r	Turn-on Rise Time		-	33	-	
$t_{d(OFF)}$	Turn-Off Delay Time		-	38.9	-	
t_f	Turn-Off Fall Time		-	18.1	-	
Q_G	Total Gate-Charge	V_{DD} = 40V, V_{GS} = 10V I_D = 50A, f = 1.0MHz	-	56.6	-	nC
Q_{GS}	Gate to Source Charge		-	21.4	-	
Q_{GD}	Gate to Drain (Miller) Charge		-	12.5	-	
Source-Drain Diode Characteristics						
V_{SD}	Diode Forward Voltage	I_{SD} = 50A, V_{GS} = 0V	-	-	1.2	V
trr	Reverse Recovery Time	I_F = 20A d_{IF}/d_t = 500A/us	-	68	-	ns
Qrr	Reverse Recovery Charge		-	66	-	nC

Ratings and Characteristics Curves (@ T_A = 25°C unless otherwise specified)

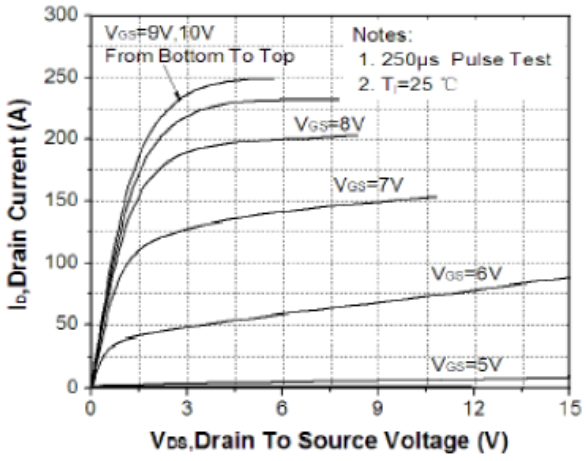


Fig 1 On-Region Characteristics

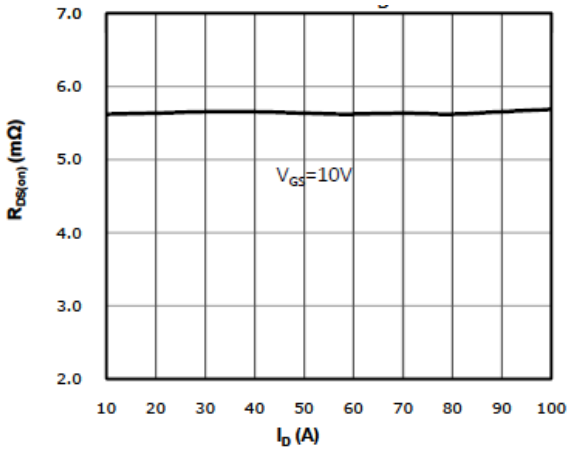


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

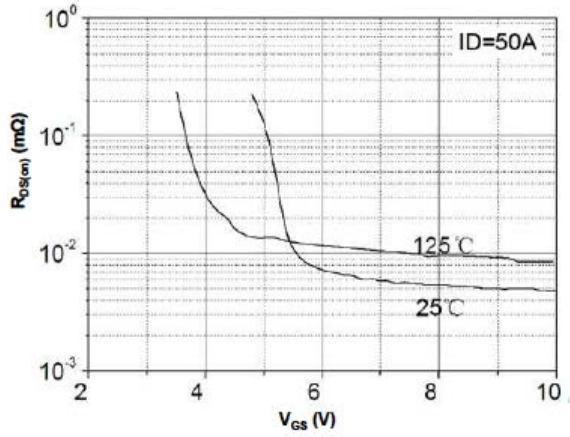


Fig 3 On-Resistance vs. Gate-Source Voltage

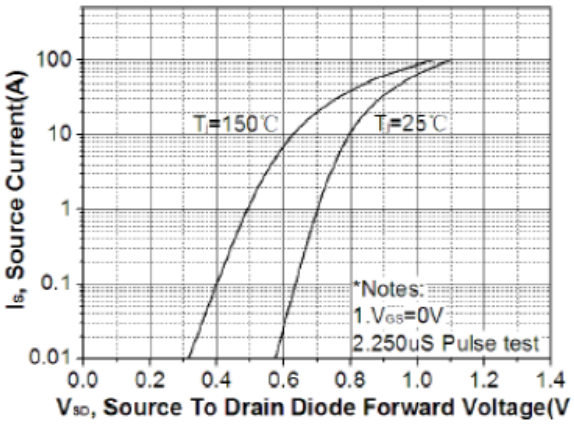


Fig 4 Body-Diode Characteristics

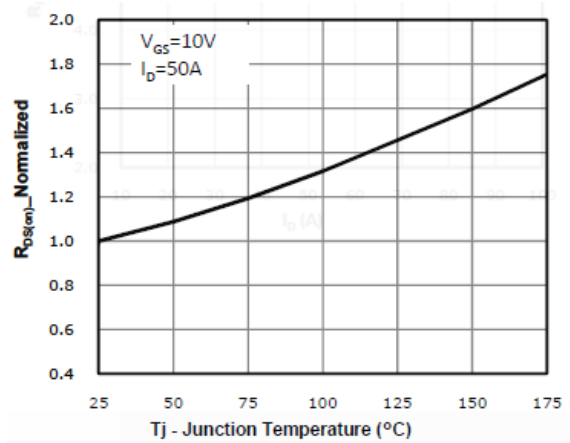


Fig 5 On-Resistance vs. Junction Temperature

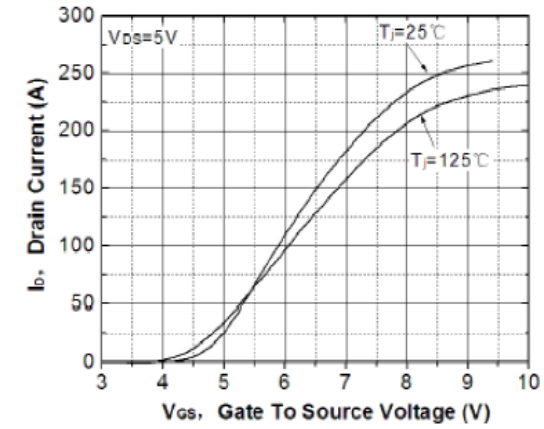


Fig 6 Transfer Characteristics

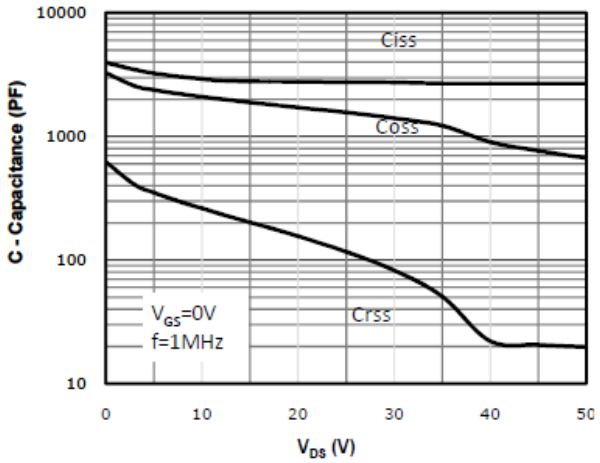


Fig 7 Capacitance Characteristics

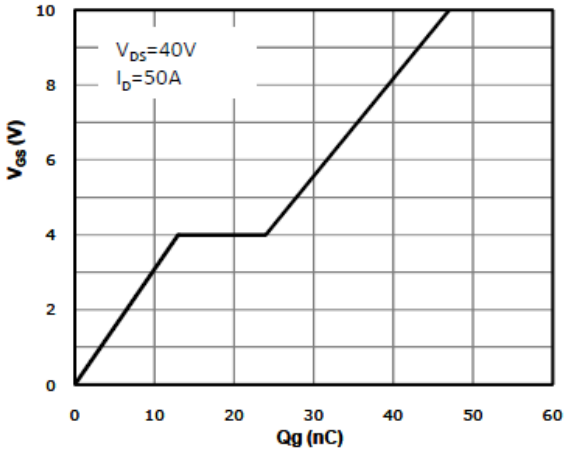
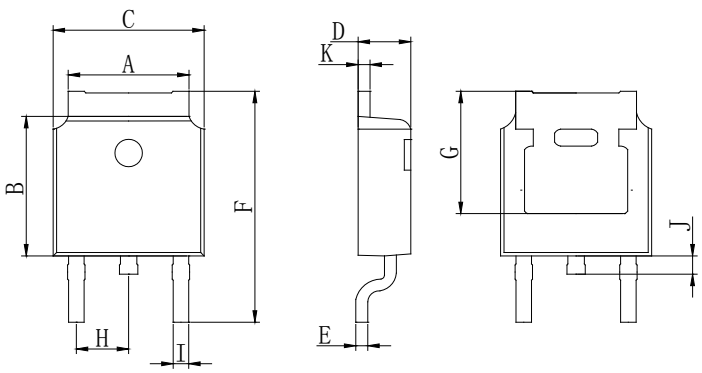


Fig 8 Gate-Charge Characteristics

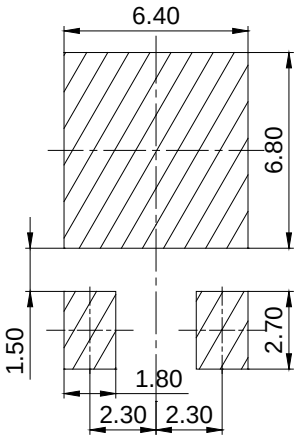
Package Outline Dimensions (Unit: mm)



TO-252		
Dimension	**Min.**	**Max.**
A	5.05	5.65
B	5.80	6.40
C	6.25	6.85
D	2.20	2.40
E	0.40	0.60
F	9.71	10.31
G	5.05	5.65
H	2.10	2.50
I	0.70	0.90
J	0.50	0.70
K	0.40	0.60

Mounting Pad Layout (Unit: mm)

TO-252



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