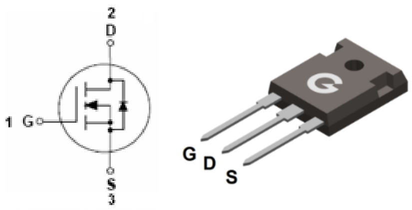
Features

HF

- Proprietary new Trench technology
- Low gate charge minimize switching loss
- Fast recovery body diode

Mechanical Data

- Case: TO-247
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



TO-247

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL760N20HU	TO-247	30 pcs / Tube	760N20HU

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

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DSS}	200	V
Gate-to-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current (T_C = 25°C)	I_D	30	A
Continuous Drain Current (T_C = 100°C)		21	A
Pulsed Drain Current (V_{GS} = 10V) $^{*1, 2}$	I_{DM}	120	A
Single Pulse Avalanche Energy (L = 0.3mH)	E_{AS}	273	mJ

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (T_C = 25°C)	P_D	179	W
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	40	°C/W
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	0.7	°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	200	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 160V, V_{GS} = 0V	-	-	1	μA
		V_{DS} = 160V, V_{GS} = 0V, T_J = 125°C	-	-	50	
I_{GSS}	Gate-Body Leakage Current	V_{GS} = ±20V, V_{DS} = 0V	-	-	±100	nA
On Characteristics [*3]						
$R_{DS(ON)}$	Static Drain-Source On-resistance	V_{GS} = 10V, I_D = 30A	-	-	76	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250μA	3	-	4.5	V
Dynamic Characteristics						
R_G	Gate Series Resistance	f = 1.0MHz	-	2.6	-	Ω
C_{ISS}	Input Capacitance	V_{GS} = 0V V_{DS} = 25V f = 1.0MHz	-	2444		pF
C_{OSS}	Output Capacitance		-	129		
C_{RSS}	Reverse Transfer Capacitance		-	24	-	
Switching Characteristics						
$t_{d(ON)}$	Turn-on Delay Time	V_{DD} =100V V_{GS} = 10V R_G = 2.5Ω I_D = 30A	-	30	-	ns
t_r	Turn-on Rise Time		-	20	-	
$t_{d(OFF)}$	Turn-Off Delay Time		-	21	-	
t_f	Turn-Off Fall Time		-	31	-	
Q_G	Total Gate-Charge	V_{DD} = 100V I_D = 20A V_{GS} = 10V	-	53	-	nC
Q_{GS}	Gate to Source Charge		-	11	-	
Q_{GD}	Gate to Drain (Miller) Charge		-	16.5	-	
Source-Drain Diode Characteristics						
V_{SD}	Diode Forward Voltage	I_{SD} = 30A, V_{GS} = 0V	-	-	1.3	V
t_{rr}	Reverse recovery time	V_{GS} = 0V, I_F = 30A, di/dt = 100A/μs	-	50	-	ns
Q_{rr}	Reverse recovery charge		-	80	-	nC

Notes:

1. Silicon limited current only
2. Repetitive rating; pulse width limited by maximum junction temperature
3. The data tested by pulsed, pulse width ≤ 380μs, duty cycle ≤ 2%

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

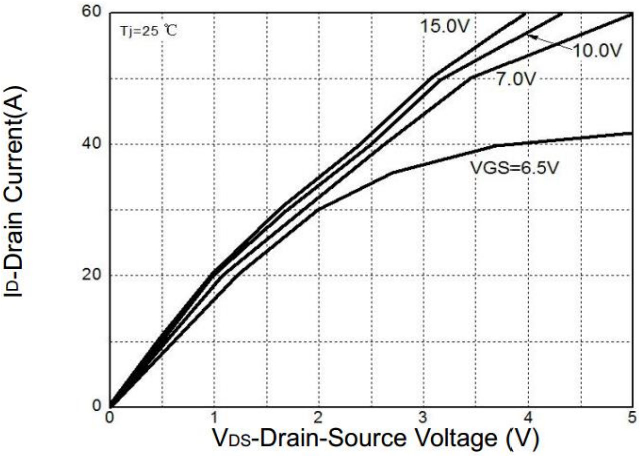


Fig 1 Typical Output Characteristics

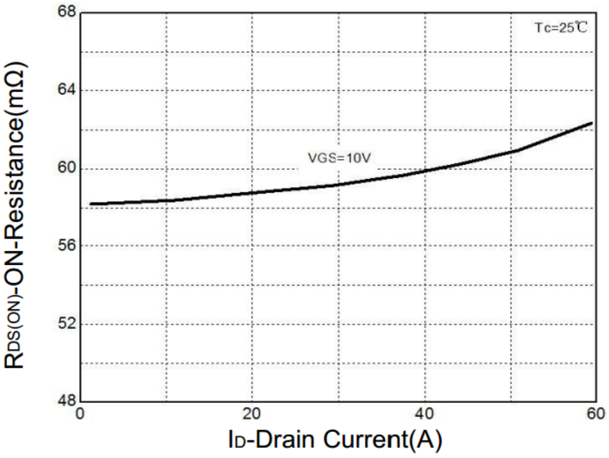


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

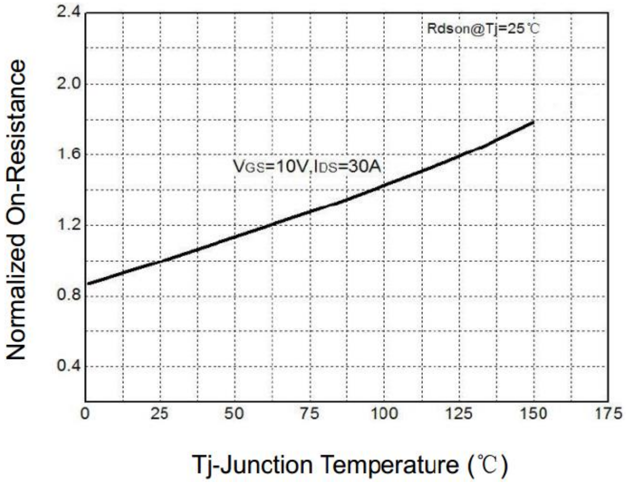


Fig 3 Normalized On-Resistance vs. Junction Temperature

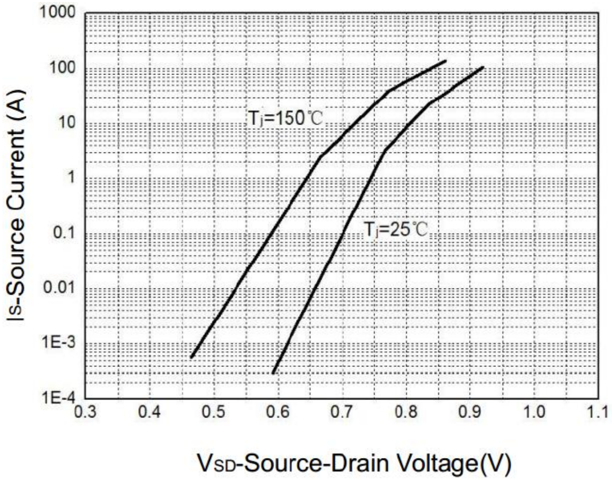


Fig 4 Body-Diode Characteristics

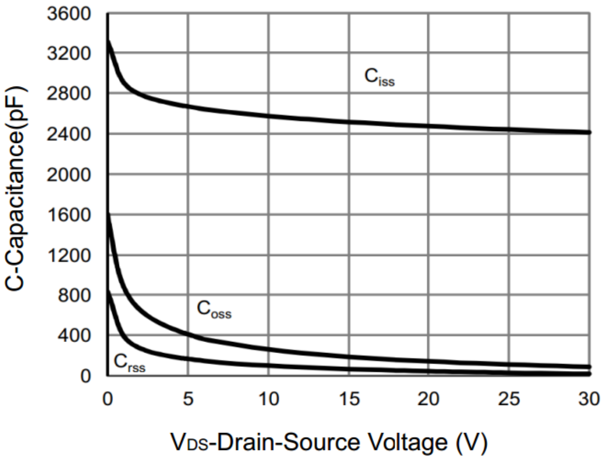


Fig 5 Capacitance Characteristics

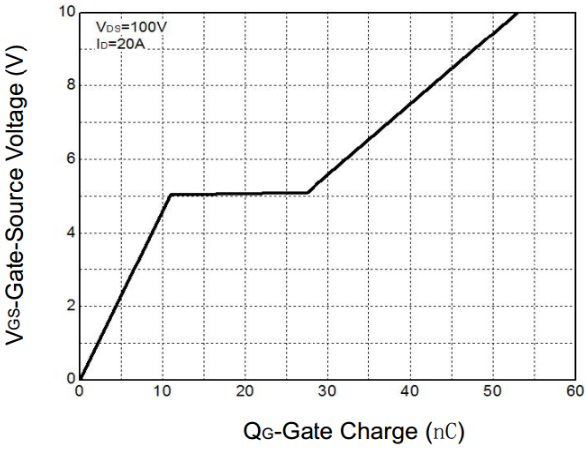
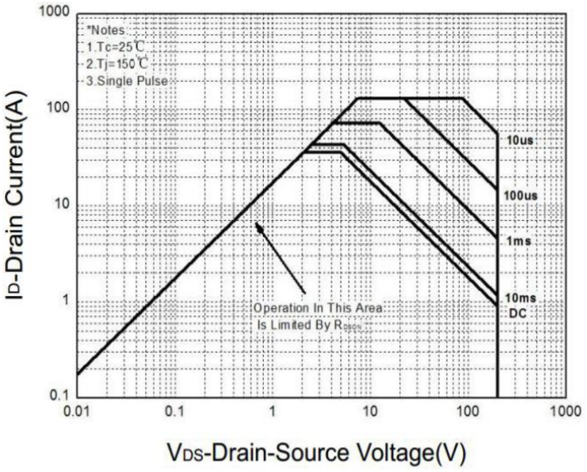


Fig 6 Gate-Charge Characteristics



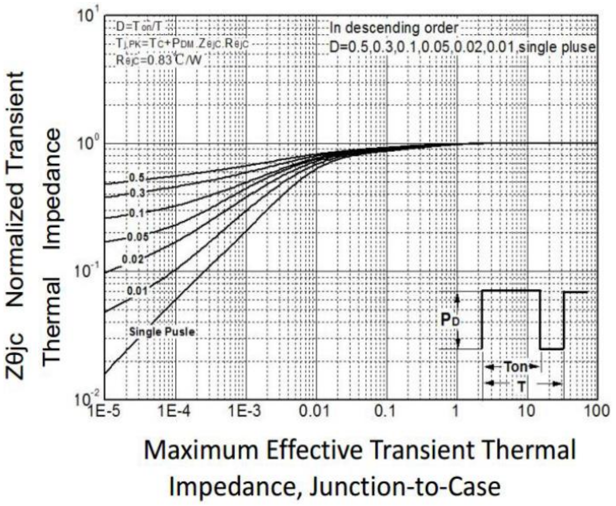
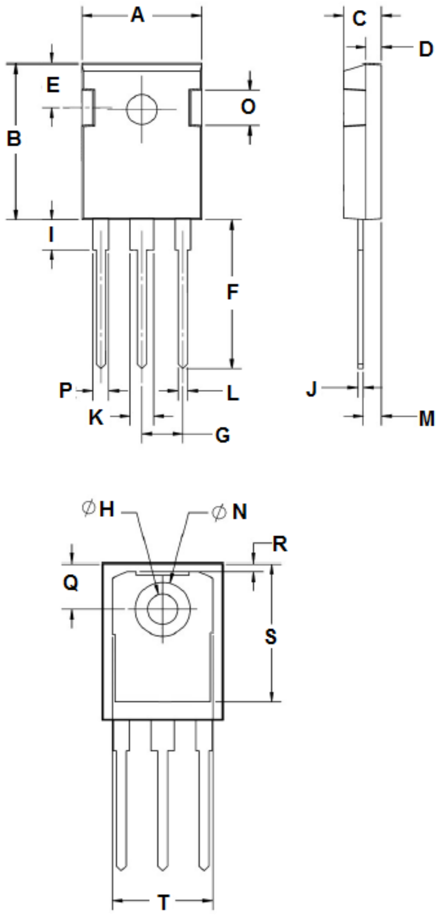


Fig 7 Safe Operation Area

Fig 8 Thermal Transient Impedance

Package Outline Dimensions (Unit: mm)



TO-247		
Dimension	**Min.**	**Max.**
A	15.50	16.10
B	20.70	21.30
C	4.70	5.30
D	1.80	2.20
E	5.20	5.80
F	19.70	20.30
G	5.20	5.60
H	3.30	3.70
I	3.90	4.30
J	0.50	0.70
K	2.80	3.20
L	1.00	1.40
M	2.20	2.60
N	7.00	7.20
O	4.90	5.30
P	1.80	2.20
Q	5.70	5.90
R	0.80	1.20
S	17.00	17.80
T	13.60	14.20

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