

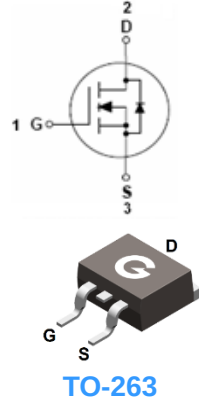
Features

- Extremely low switching loss
- Excellent gate charge x $R_{DS(on)}$ product(FOM)
- Excellent stability and uniformity

HF

Mechanical Data

- Case: TO-263
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL030N08THB	TO-263	50 pcs / Tube & 800 pcs / Tape & Reel	030N08THB

Maximum Ratings (@ $T_C = 25^\circ\text{C}$ 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 ($T_C = 25^\circ\text{C}$) ^{*5}	I_D	200	A
Continuous Drain Current ($T_C = 100^\circ\text{C}$) ^{*5}	I_D	126.5	A
Pulsed Drain Current ^{*3}	I_{DM}	800	A
Single Pulse Avalanche Energy ^{*3, 6}	E_{AS}	1200	mJ

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation ($T_C = 25^\circ\text{C}$) ^{*2}	P_D	260	W
Thermal Resistance Junction-to-Air ^{*1, 4}	$R_{\theta JA}$	62.5	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	0.5	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_J	$-55 \sim +150$	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	$-55 \sim +150$	$^\circ\text{C}$

Electrical Characteristics (@ $T_c = 25^\circ\text{C}$ 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} = 68V, V _{GS} = 0V	-	-	1	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 = 20A	-	2.5	3	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = 250μA	2	2.8	4	V
R _g	Gate Resistance	V _{DS} = V _{GS} = 0V, f = 1.0MHz	-	2.25	-	Ω
Dynamic Characteristics						
C _{ISS}	Input Capacitance	V _{GS} = 0V	-	5822	-	pF
C _{OSS}	Output Capacitance	V _{DS} = 50V	-	3380	-	
C _{RSS}	Reverse Transfer Capacitance	f = 1.0MHz	-	269	-	
Switching Characteristics						
t _{d(ON)}	Turn-on Delay Time	V _{DD} = 50V	-	31	-	ns
t _r	Turn-on Rise Time	V _{GS} = 10V	-	28	-	
t _{d(OFF)}	Turn-Off Delay Time	R _G = 3Ω	-	86	-	
t _f	Turn-Off Fall Time	I _D = 50A	-	27	-	
Q _G	Total Gate-Charge	V _{DD} = 50V	-	112	-	nC
Q _{GS}	Gate to Source Charge	V _{GS} = 10V	-	22	-	
Q _{GD}	Gate to Drain (Miller) Charge	I _D = 50A	-	35	-	
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage	I _S = 20A, V _{GS} = 0V	-	-	1.4	V
I _S	Continuous Source Current		-	-	200	A
t _{rr}	Body Diode Reverse Recovery Time	I _F = 20A	-	75	-	ns
Q _{rr}	Body Diode Reverse Recovery Charge	dI/dt = 100A / μs	-	133	-	nC

Notes:

- The value of $R_{\theta JC}$ is measured in a still air environment with $T_A = 25^\circ\text{C}$ and the maximum allowed junction temperature of 150°C . The value in any given application depends on the user's specific board design
- The power dissipation P_D is based on $T_J(MAX) = 150^\circ\text{C}$, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heatsinking is used
- Single pulse width limited by junction temperature $T_{J(MAX)} = 150^\circ\text{C}$
- The $R_{\theta JA}$ is the sum of the thermal impedance from junction to case $R_{\theta JC}$ and case to ambient
- The maximum current rating is package limited
- The E_{AS} data shows Max. rating. The test condition is $V_{DS} = 50V, V_{GS} = 10V, L = 0.5mH$

Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

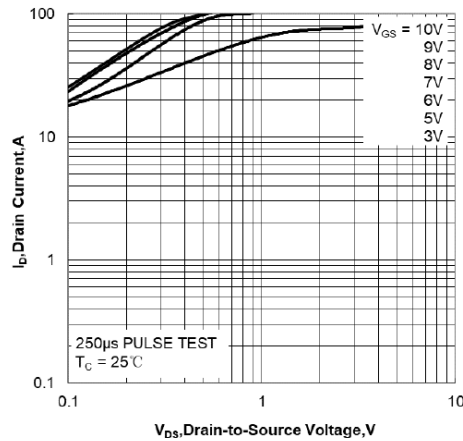


Fig 1 Output Characteristics

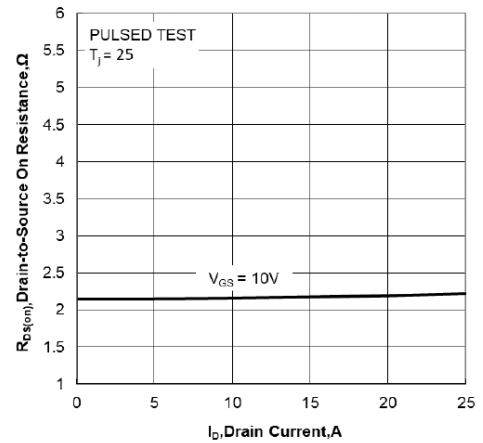


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

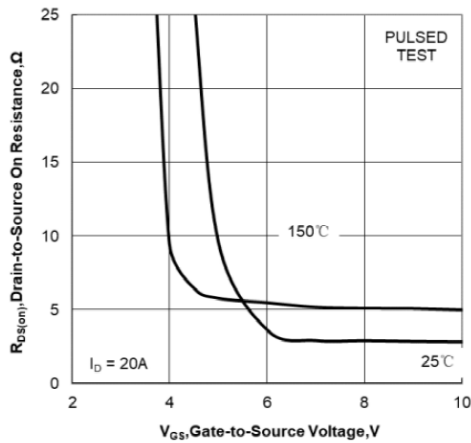


Fig 3 On-Resistance vs. Gate-Source Voltage

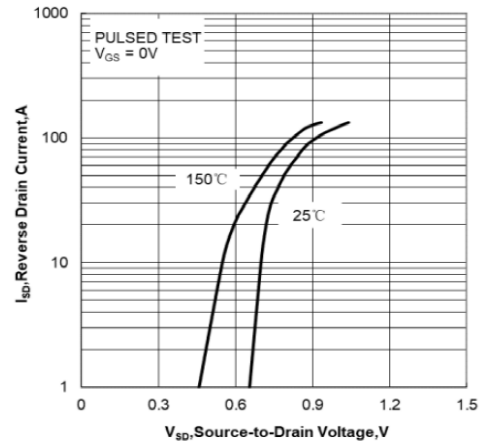


Fig 4 Body-Diode Characteristics

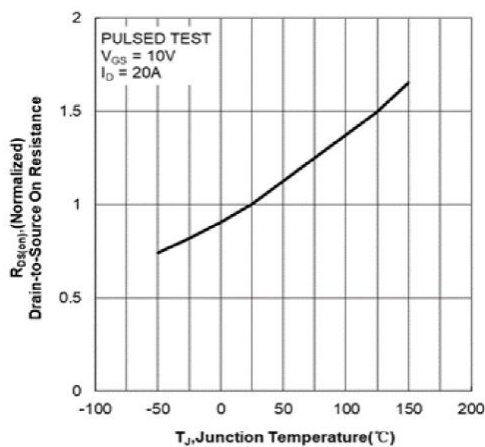


Fig 5 Normalized On-Resistance vs. Junction Temperature

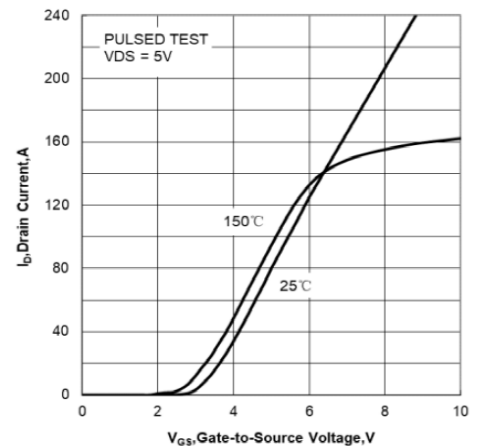


Fig 6 Transfer Characteristics

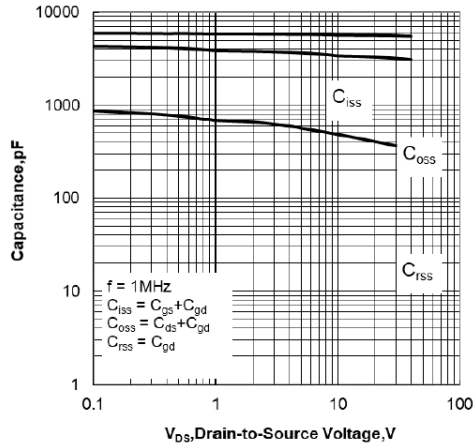


Fig 7 Capacitance Characteristics

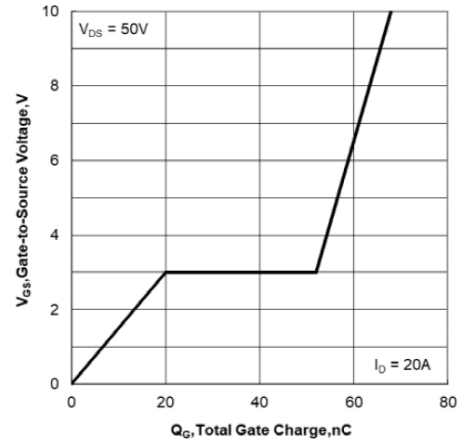


Fig 8 Gate-Charge Characteristics

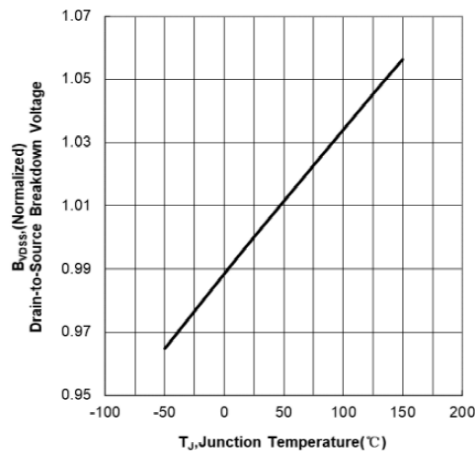


Fig 9 Normalized Breakdown Voltage
vs. Junction Temperature

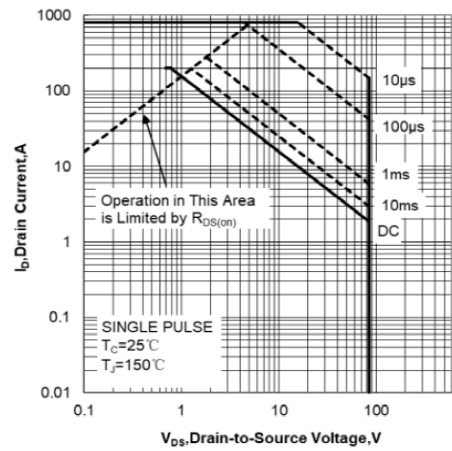


Fig 10 Safe Operation Area

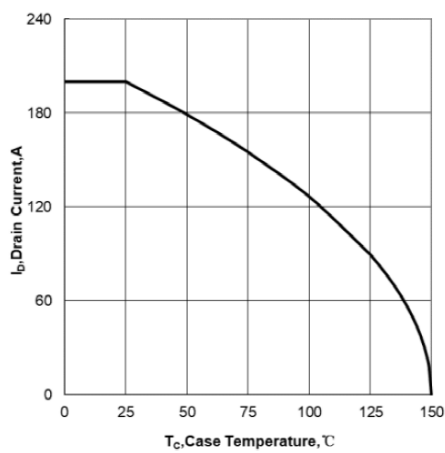


Figure 11 Maximum Continuous Drain Current
vs. Case Temperature

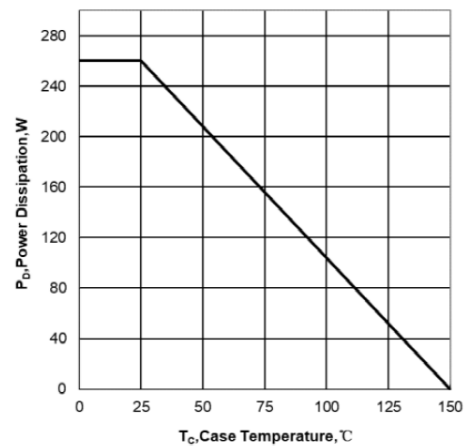
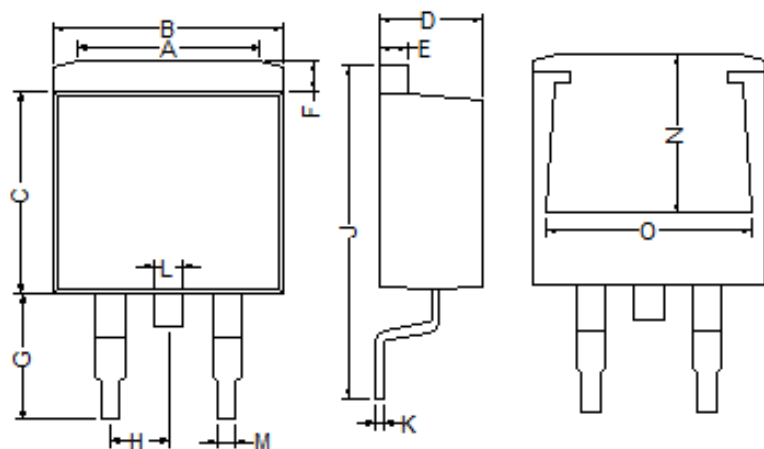


Figure 12 Maximum Power Dissipation
vs. Case Temperature

Package Outline Dimensions (Unit: mm)



TO-263		
Dimension	Min.	Max.
A	6.00	8.00
B	9.90	10.30
C	8.50	9.10
D	4.37	4.77
E	1.07	1.47
F	1.07	1.47
G	5.05	5.74
H	2.44	2.66
J	15.15	15.80
K	0.28	0.48
L	1.17	1.37
M	0.71	0.91
N	6.55	7.68
O	7.70	8.10

Mounting Pad Layout (Unit: mm)

TO-263

