

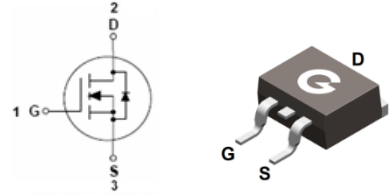
Features

- Super low gate charge
- Green device available
- Excellent c_{dv} / d_t effect decline
- RoHS compliant with Halogen-free

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



TO-263

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL080N10TB	TO-263	50pcs / Tube & 800pcs / Tape & Reel	080N10TB

Maximum Ratings (@ $T_c = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DS}	100	V
Gate-to-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	100	A
Pulsed Drain Current	I_{DM}	400	A
Single Pulse Avalanche Energy ^{*2}	E_{AS}	8	mJ

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation ($T_c = 25^\circ\text{C}$)	P_D	250	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 (@ $T_A = 25^\circ\text{C}$ 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	100	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 80V, V _{GS} = 0V	-	-	1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±20V, V _{DS} = 0V	-	-	±100	nA
On Characteristics						
R _{DS(ON)}	Drain-Source On-resistance *1	V _{GS} = 10V,I _D = 15A	-	-	8	mΩ
		V _{GS} = 4.5V,I _D = 13A	-	-	10.5	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = 250μA	1	1.7	2.5	V
R _G	Gate Resistance	V _{GS} = 0V, f = 1MHz	-	0.9	-	Ω
Dynamic Characteristics						
C _{ISS}	Input Capacitance	V _{GS} = 0V	-	2908	-	pF
C _{OSS}	Output Capacitance	V _{DS} = 50V	-	398	-	
C _{RSS}	Reverse Transfer Capacitance	f = 100KHz	-	19	-	
Switching Characteristics						
t _{d(ON)}	Turn-on Delay Time *3	V _{DD} = 50V V _{GS} = 10V R _G = 3Ω I _D = 15A	-	10	-	ns
t _r	Turn-on Rise Time *3		-	6.5	-	
t _{d(OFF)}	Turn-Off Delay Time *3		-	45	-	
t _f	Turn-Off Fall Time *3		-	7.5	-	
Q _G	Total Gate-Charge	V _{DD} = 50V	-	64	-	nC
Q _{GS}	Gate to Source Charge	V _{GS} = 10V	-	8.3	-	
Q _{GD}	Gate to Drain (Miller) Charge	I _D = 15A	-	16.6	-	
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage *1	I _{SD} = 22A, V _{GS} = 0V	-	0.8	1.2	V
t _{rr}	Reverse Recovery Time	T _A = 25°C, I _F = 30A, V _{GS} = 0 V	-	57.5	-	ns
Q _{rr}	Reverse Recovery Charge	di/dt = 100A/μs	-	87	-	nC

Notes:

1. The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
2. The test condition is $V_{DS} = 50V, V_{GS} = 10V, L = 10mH$
3. Guaranteed by design, not subject to production

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

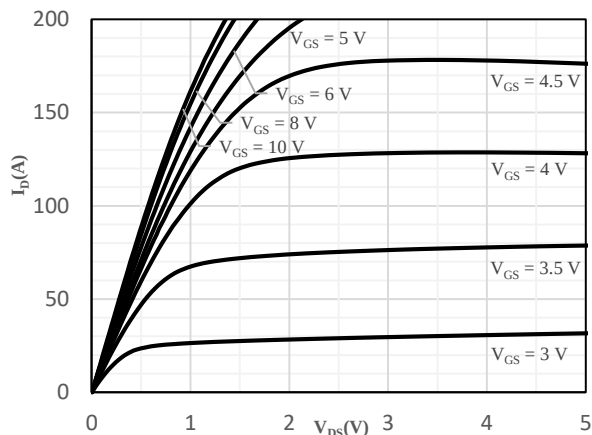


Fig 1 Typical Output Characteristics

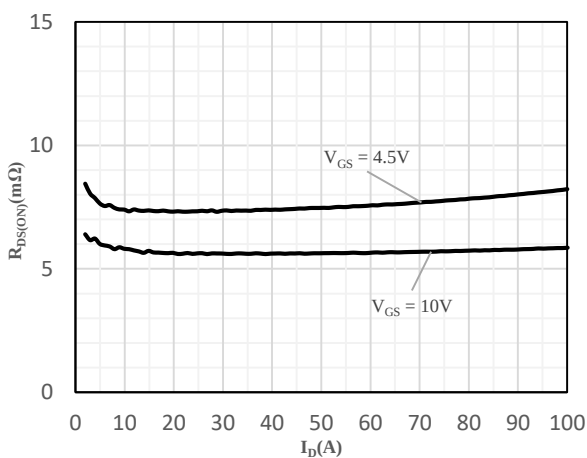


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

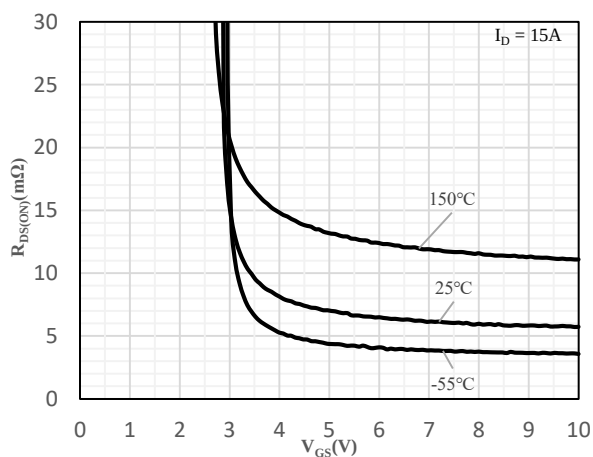


Fig 3 On-Resistance vs. Gate-Source Voltage

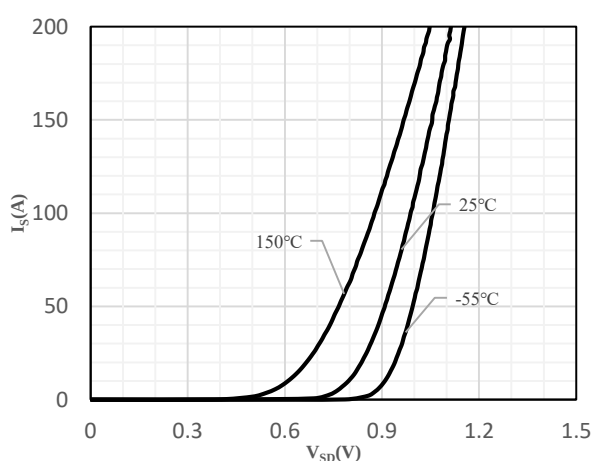


Fig 4 Body-Diode Characteristics

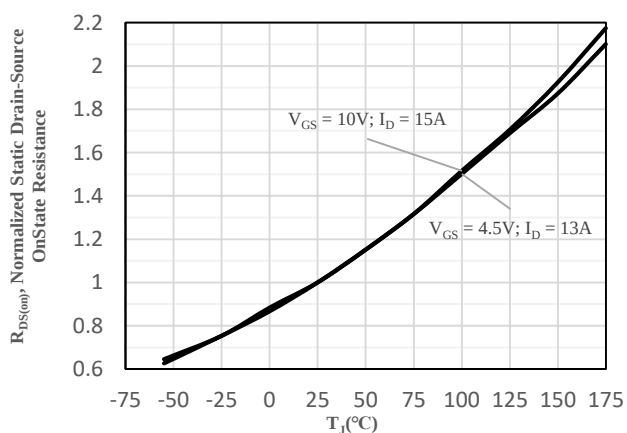


Fig 5 Normalized On-Resistance vs. Junction Temperature

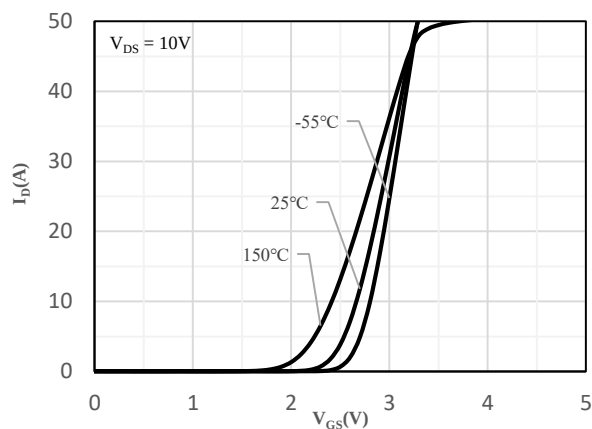


Fig 6 Transfer Characteristics

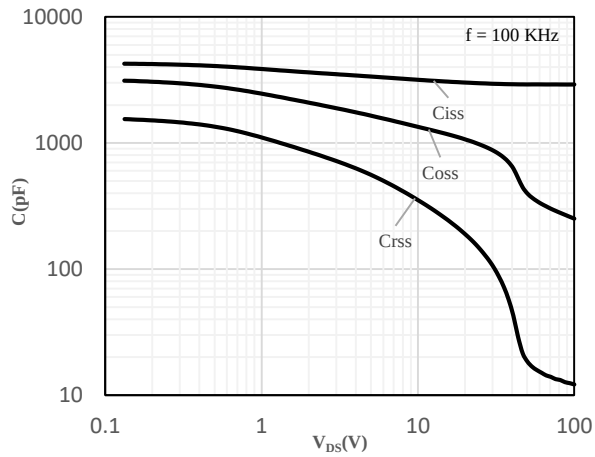


Fig 7 Capacitance Characteristics

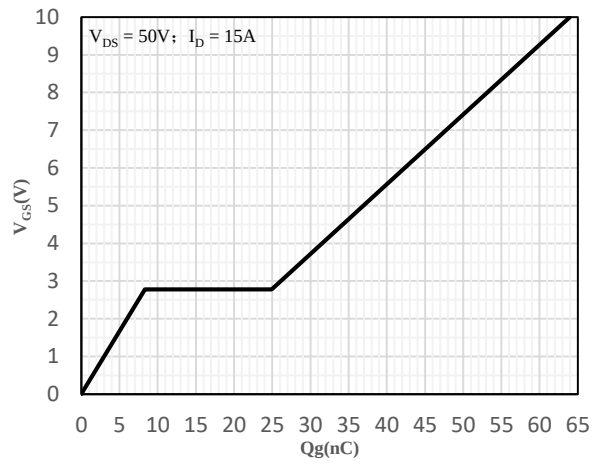


Fig 8 Gate-Charge Characteristics

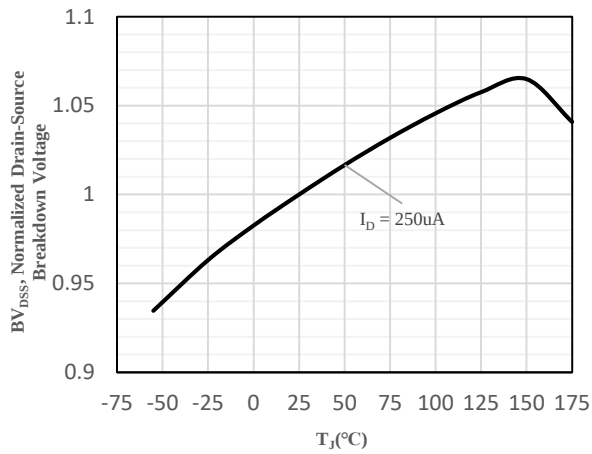


Fig 9 Normalized Breakdown Voltage
vs. Junction Temperature

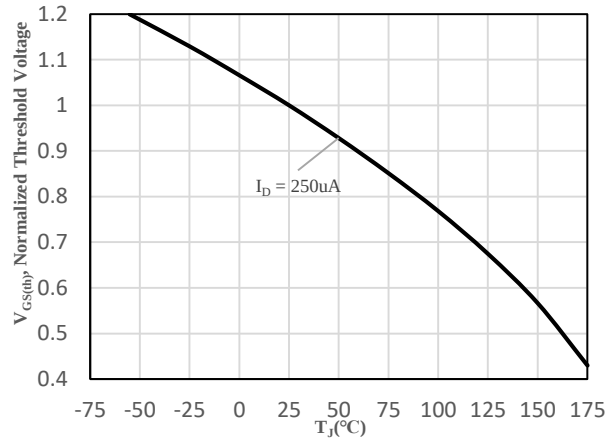
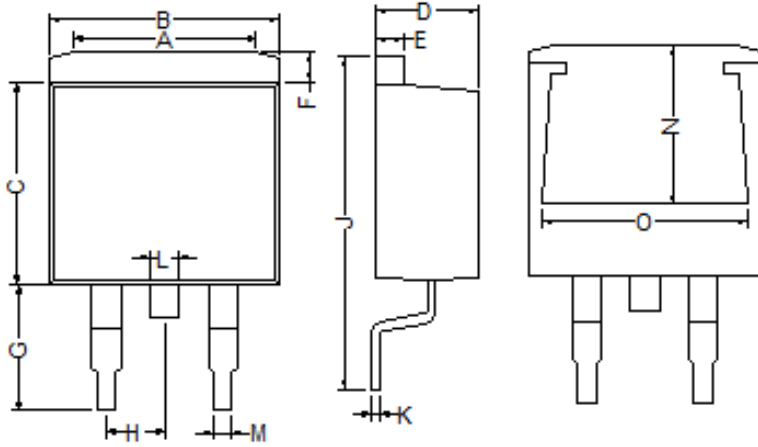


Fig 10 Normalized $V_{GS(th)}$ vs. Junction Temperature

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

