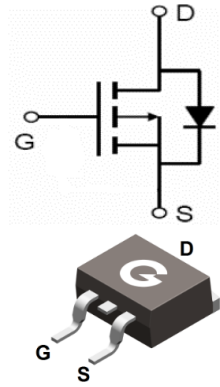


Features

- Advanced trench technology
- Extremely low on-resistance
- High current capability
- Excellent package for good heat dissipation
- RoHS compliant with Halogen-free

HF



TO-263

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
BL155P06B	TO-263	50 pcs / Tube & 800 pcs / Tape & Reel	155P06B

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

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DS}	-60	V
Gate-to-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ($T_C = 25^\circ\text{C}$)	I_D	-77	A
Continuous Drain Current ($T_C = 100^\circ\text{C}$)		-54	A
Continuous Drain Current ($T_A = 25^\circ\text{C}$) ^{*1}		-12.5	A
Continuous Drain Current ($T_A = 100^\circ\text{C}$) ^{*1}		-9	A
Pulsed Drain Current ($t_p = 10\mu\text{s}$, $T_C = 25^\circ\text{C}$)	I_{DM}	-308	A
Single Pulse Avalanche Energy ^{*3}	E_{AS}	200	mJ
Power Dissipation ($T_C = 25^\circ\text{C}$)	P_D	188	W
Operating Junction Temperature Range	T_J	-55 ~ +175	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +175	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	-	-	0.8	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Air ^{*1}	$R_{\theta JA}$	-	-	30	$^\circ\text{C/W}$

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	-60	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = -60V, 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 *2	V _{GS} = -10V, I _D = -20A	-	11	15.5	mΩ
		V _{GS} = -4.5V, I _D = -20A	-	13	20	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = -250 μA	-1	-1.6	-2.5	V
R _G	Gate Resistance	V _{GS} = 0V, f = 1MHz	-	4.5	-	Ω
Dynamic Characteristics						
C _{ISS}	Input Capacitance	V _{GS} = 0V	-	7723	-	pF
C _{OSS}	Output Capacitance	V _{DS} = -30V	-	316	-	
C _{RSS}	Reverse Transfer Capacitance	f = 100kHz	-	284	-	
Switching Characteristics						
t _{d(ON)}	Turn-on Delay Time *4	V _{DD} =-30V	-	26	-	ns
t _r	Turn-on Rise Time *4	V _{GS} = -10V	-	21	-	
t _{d(OFF)}	Turn-Off Delay Time *4	R _G = 3.3Ω	-	114	-	
t _f	Turn-Off Fall Time *4	I _D = -20A	-	30	-	
Q _G	Total Gate-Charge	V _{DD} = -30V	-	149	-	nC
Q _{GS}	Gate to Source Charge	V _{GS} = -10V	-	17.5	-	
Q _{GD}	Gate to Drain (Miller) Charge	I _D = -20A	-	25.3	-	
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage *2	I _{SD} = -20A, V _{GS} = 0V	-	-0.85	-1.2	V
t _{rr}	Reverse Recovery Time	I _F = -20A, V _{GS} = 0V	-	39	-	ns
Q _{rr}	Reverse Recovery Charge	dI _F /d _t = 100A/us	-	39	-	nC

Notes:

- The data tested by surface mounted on a 1 inch² FR-4 board with 20Z copper
- The data tested by pulsed, pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
- The E_{AS} data shows Max. rating. The test condition is $V_{DD} = -30V, V_{GS} = -10V, L = 0.5mH$
- Guaranteed by design, not subject to production

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

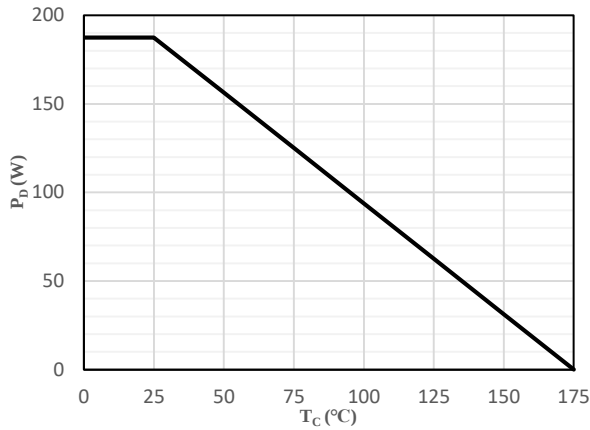


Fig 1 Power Dissipation

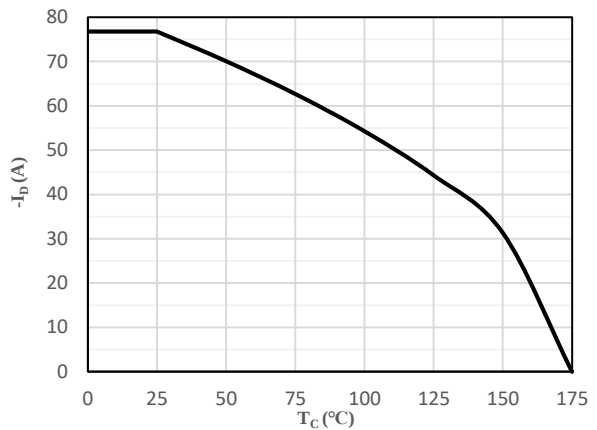


Fig 2 Drain Current

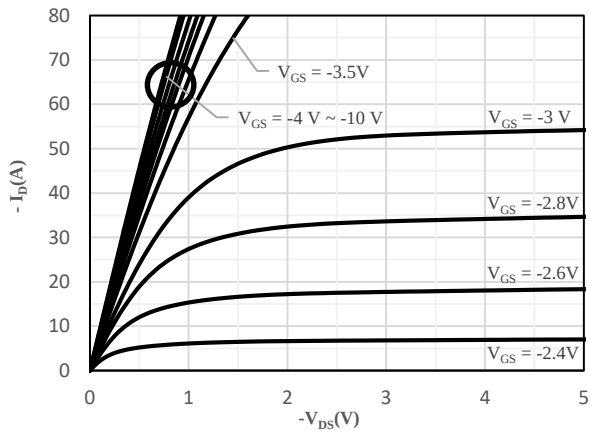


Fig 3 Typical Output Characteristics

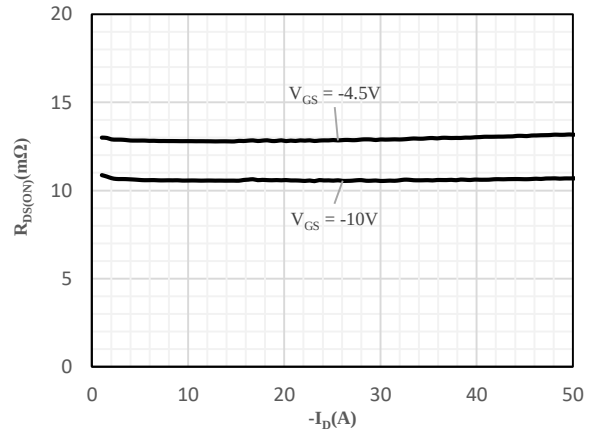


Fig 4 On-Resistance vs. Drain Current and Gate Voltage

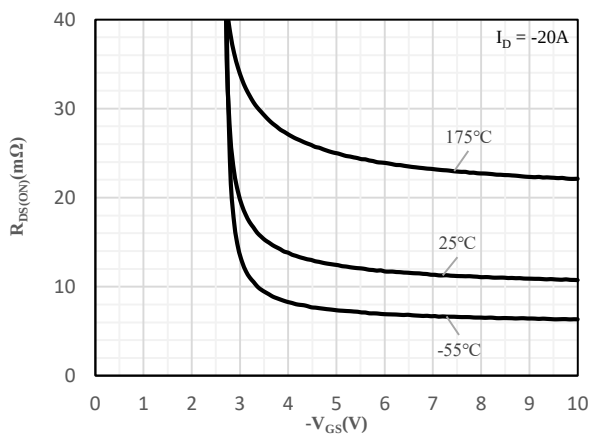


Fig 5 On-Resistance vs. Gate-Source Voltage

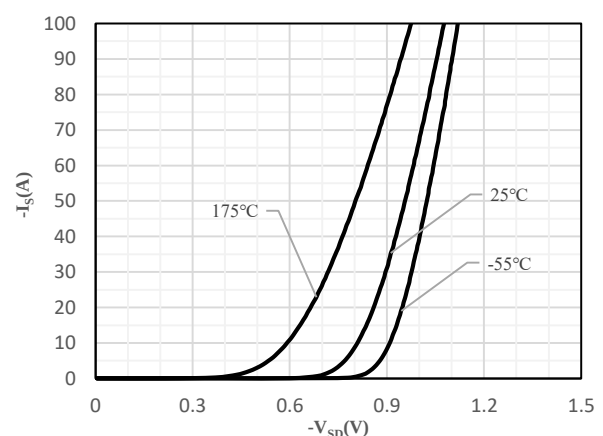


Fig 6 Body-Diode Characteristics

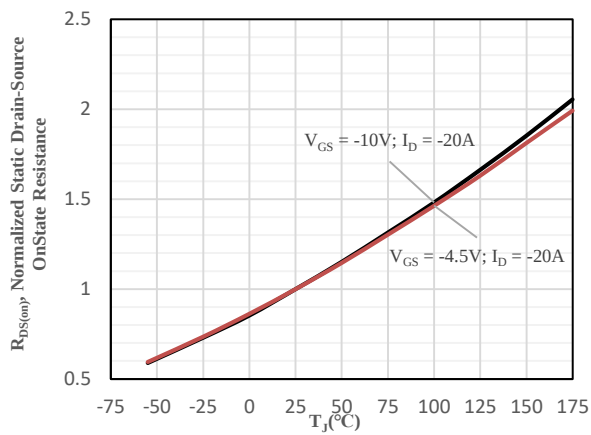


Fig 7 Normalized On-Resistance vs. Junction Temperature

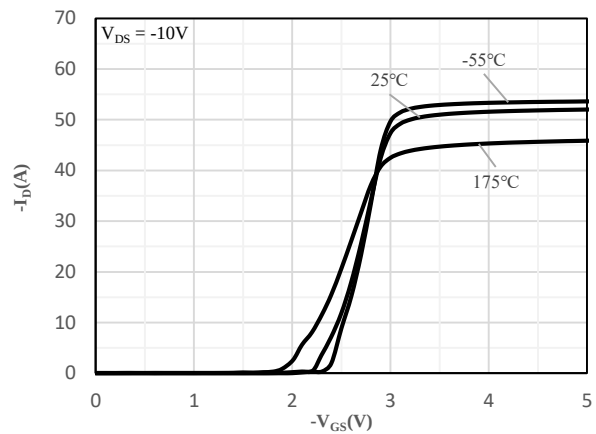


Fig 8 Transfer Characteristics

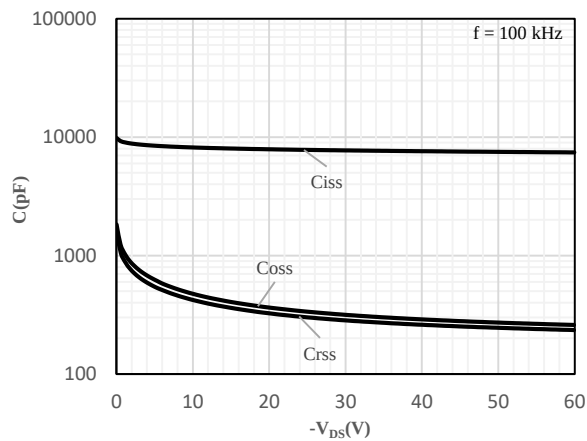


Fig 9 Capacitance Characteristics

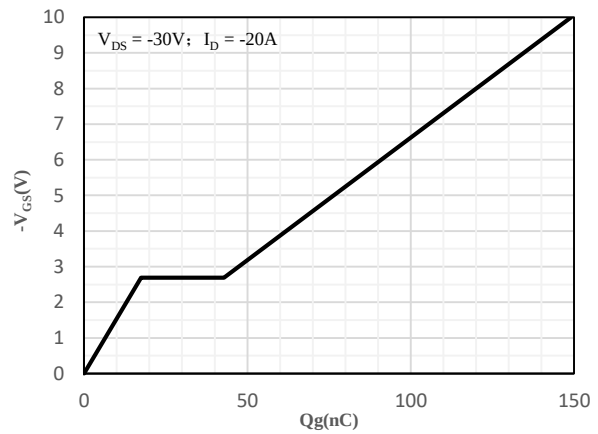


Fig 10 Gate-Charge Characteristics

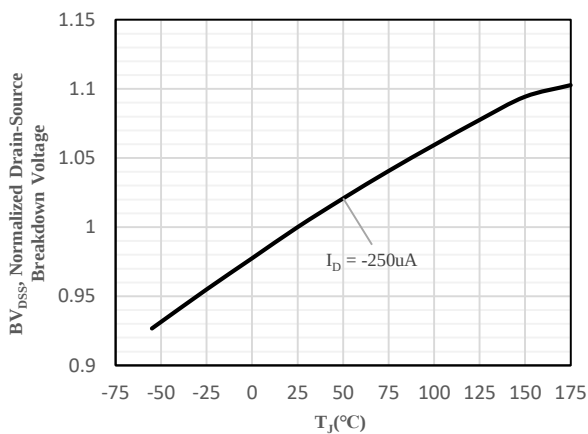


Fig 11 Normalized Breakdown Voltage vs. Junction Temperature

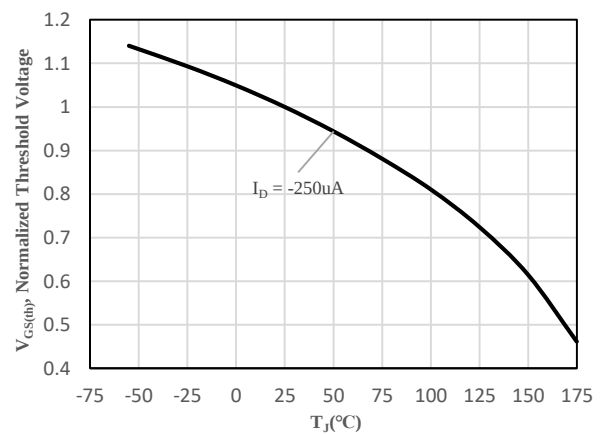
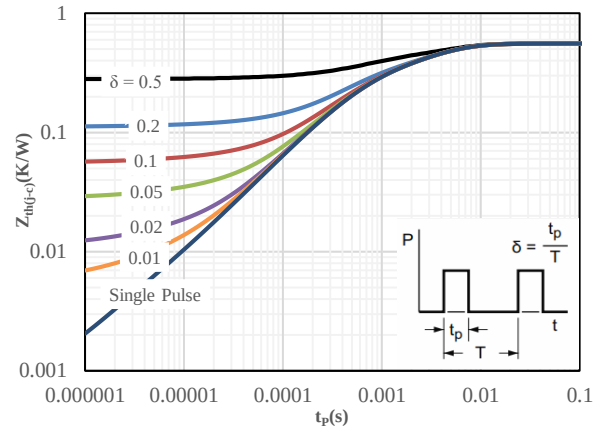
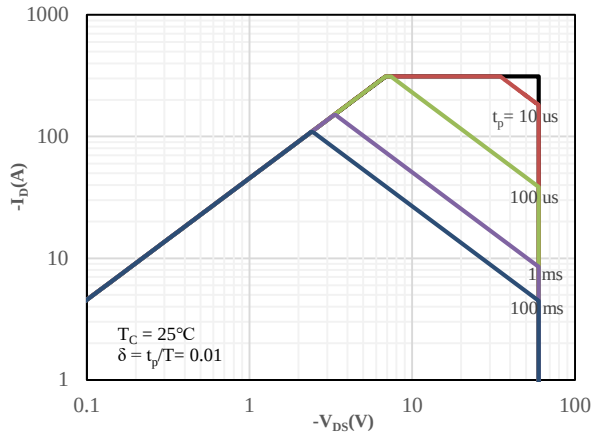
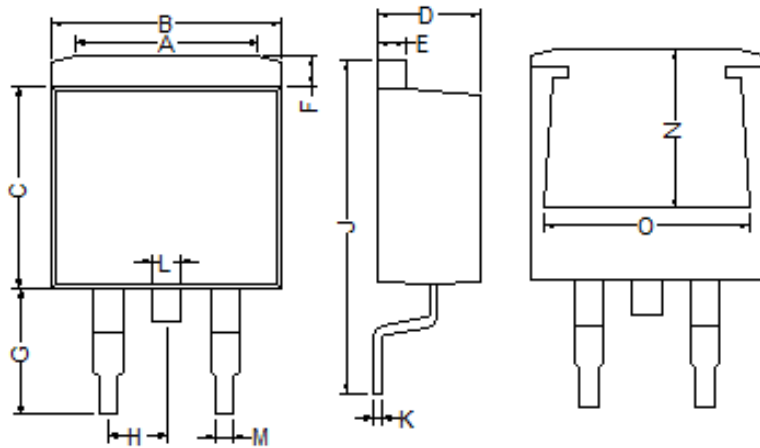


Fig 12 Normalized $V_{GS(th)}$ vs. Junction Temperature



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

