

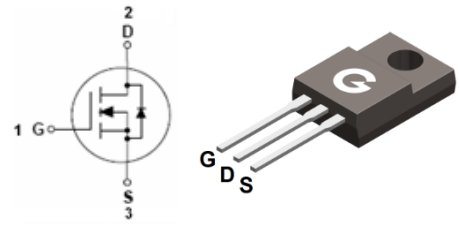
Features

- Fast switching
- Low gate charge
- Low reverse transfer capacitances

HF

Mechanical Data

- Case: ITO-220AB
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



ITO-220AB

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL10N80F	ITO-220AB	50 pcs / Tube	10N80F

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

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V _{DSS}	800	V
Gate-to-Source Voltage	V _{GSS}	±30	V
Continuous Drain Current (T _c = 25°C)	I _D	10	A
Continuous Drain Current (T _c = 100°C)	I _D	6.5	A
Pulsed Drain Current *1	I _{DM}	40	A
Single Pulse Avalanche Energy	E _{AS}	997	mJ

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (T _c = 25°C)	P _D	36	W
Thermal Resistance Junction-to-Air	R _{θJA}	62.5	°C/W
Thermal Resistance Junction-to-Case	R _{θJC}	3.47	°C/W
Operating Junction Temperature Range	T _J	-55 ~ +150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°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	$V_{GS} = 0V, I_D = 250\mu A$	800	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 800V, V_{GS} = 0V, T_A = 25^\circ\text{C}$	-	-	25	μA
		$V_{DS} = 640V, V_{GS} = 0V, T_A = 125^\circ\text{C}$	-	-	250	μA
I_{GSS}	Gate-Body Leakage Current	$V_{GS} = \pm 20V, V_{DS} = 0V$	-	-	± 10	μA
On Characteristics ^{*2}						
$R_{DS(ON)}$	Static Drain-Source On-resistance	$V_{GS} = 10V, I_D = 5A$	-	-	0.9	Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	2	-	4	V
gfs	Forward Transconductance	$V_{DS} = 15V, I_D = 10A$	-	20	-	S
Dynamic Characteristics						
C_{ISS}	Input Capacitance	$V_{GS} = 0V$ $V_{DS} = 25V$ $f = 1.0\text{MHz}$	-	2900	-	pF
C_{OSS}	Output Capacitance		-	200	-	
C_{RSS}	Reverse Transfer Capacitance		-	25	-	
Switching Characteristics						
$t_{d(ON)}$	Turn-on Delay Time	$V_{DD} = 400V$ $V_{GS} = 10V$ $R_G = 4.7\Omega$ $I_D = 10A$	-	19	-	ns
t_r	Turn-on Rise Time		-	10	-	
$t_{d(OFF)}$	Turn-Off Delay Time		-	68	-	
t_f	Turn-Off Fall Time		-	23	-	
Q_G	Total Gate-Charge	$V_{DD} = 640V$ $V_{GS} = 10V$ $I_D = 10A$	-	65	-	nC
Q_{GS}	Gate to Source Charge		-	13	-	
Q_{GD}	Gate to Drain (Miller) Charge		-	25	-	
Source-Drain Diode Characteristics						
V_{SD}	Diode Forward Voltage	$I_{SD} = 10A, V_{GS} = 0V$	-	-	1.5	V
I_S	Continuous Source Current		-	-	10	A
I_{SM}	Pulsed Source Current		-	-	40	A
t_{rr}	Reverse Recovery Time	$I_F = 10A, V_{GS} = 0V$ $dI_F/dt = 100A/\mu s$	-	200	-	ns
Q_{rr}	Reverse Recovery Charge		-	2200	-	nC

Notes:

1. Repetitive rating; pulse width limited by maximum junction temperature
2. The data tested by pulsed, pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$

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

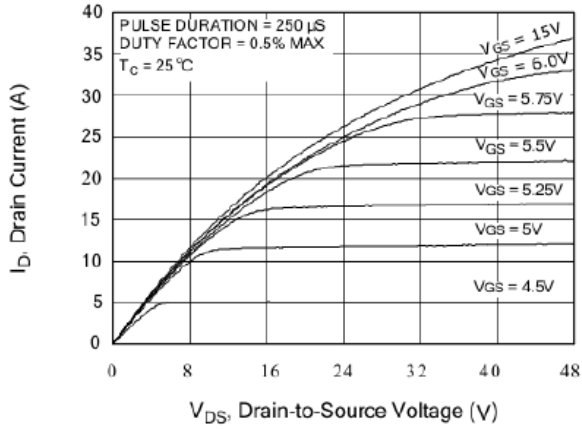


Fig 1 Typical Output Characteristics

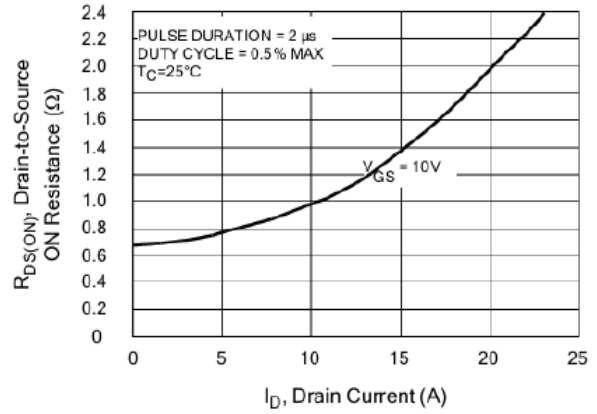


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

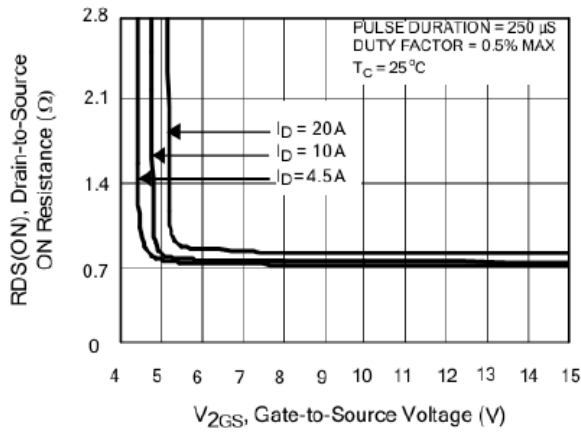


Fig 3 On-Resistance vs. Gate-Source Voltage

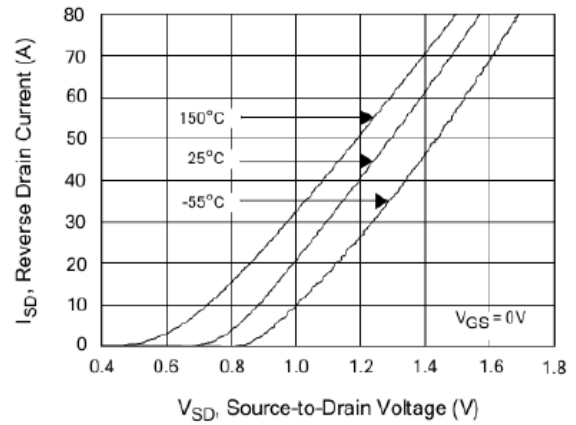


Fig 4 Body-Diode Characteristics

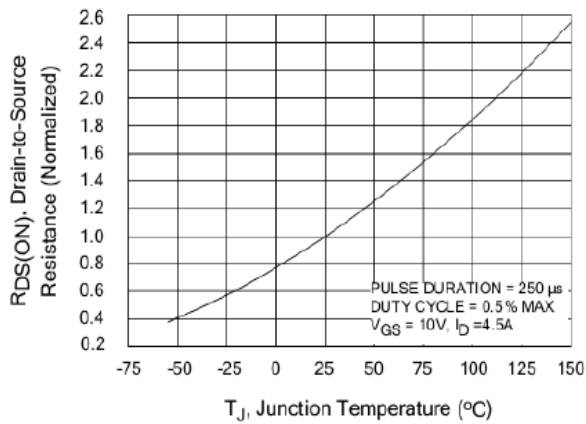


Fig 5 Normalized On-Resistance vs. Junction Temperature

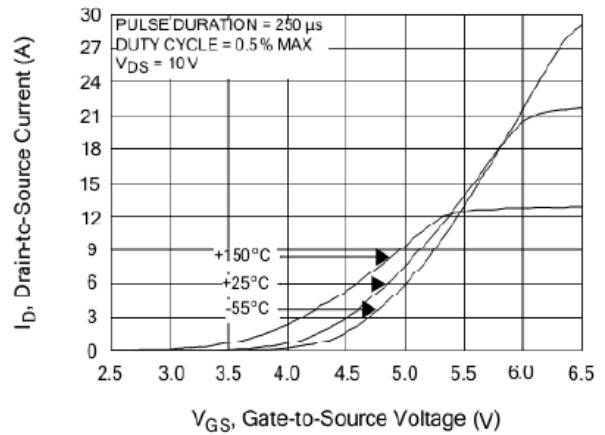


Fig 6 Transfer Characteristics

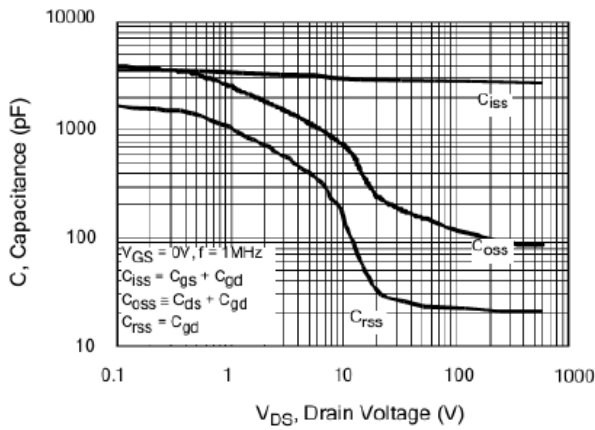


Fig 7 Capacitance Characteristics

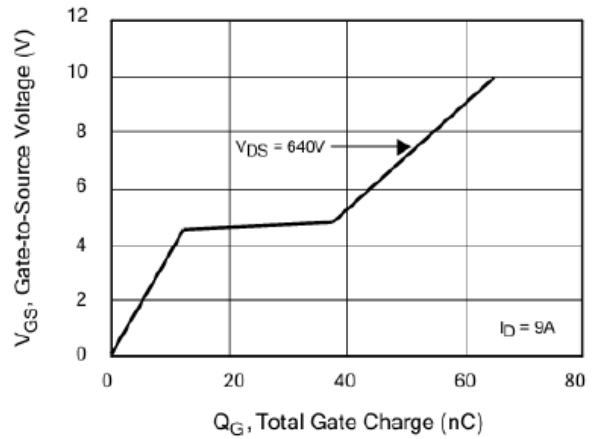


Fig 8 Gate-Charge Characteristics

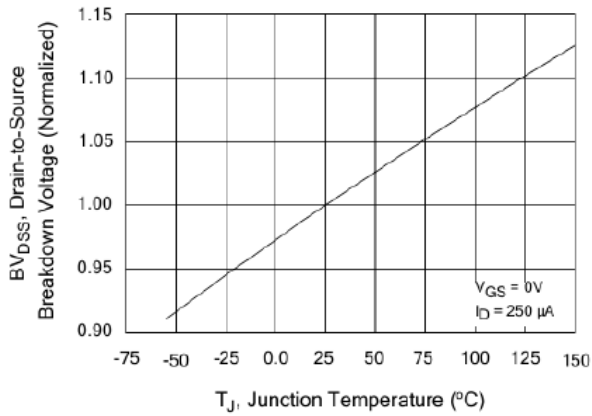


Fig 9 Normalized Breakdown Voltage vs. Junction Temperature

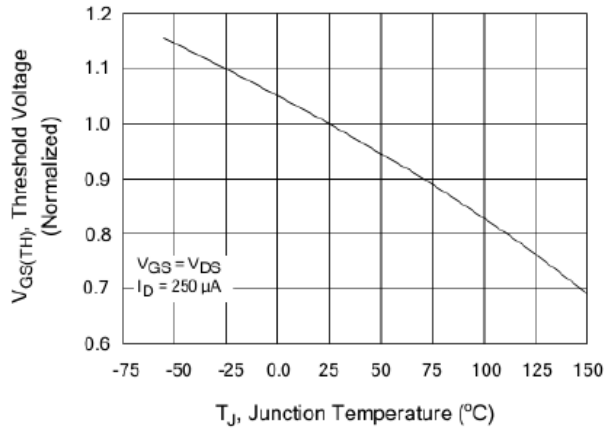


Fig 10 $V_{GS(th)}$ vs. Junction Temperature

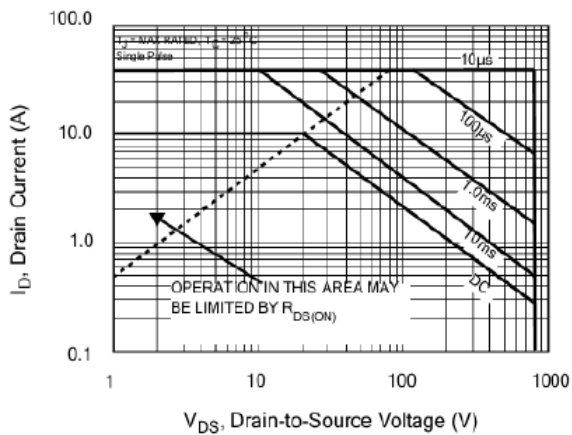


Fig 11 Safe Operation Area

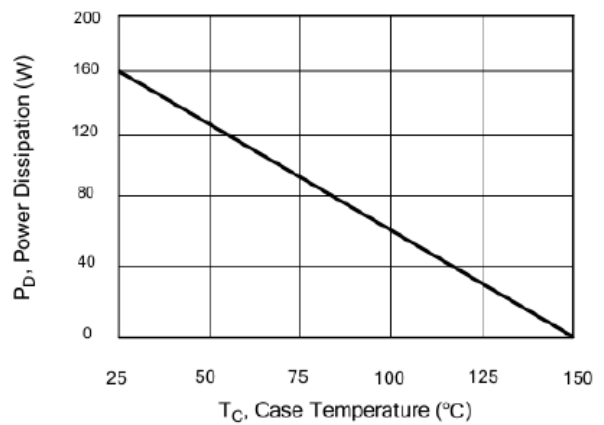


Fig 12 Maximum Power Dissipation vs Case Temperature

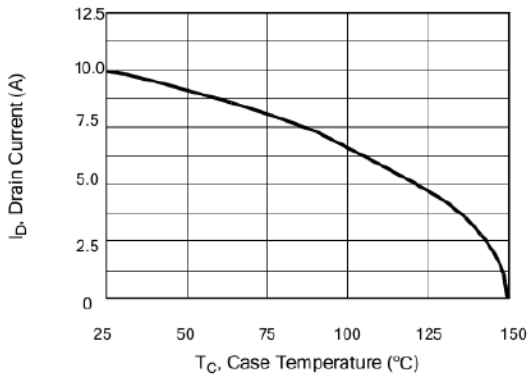


Fig 13 Maximum Continuous Drain Current vs Case Temperature

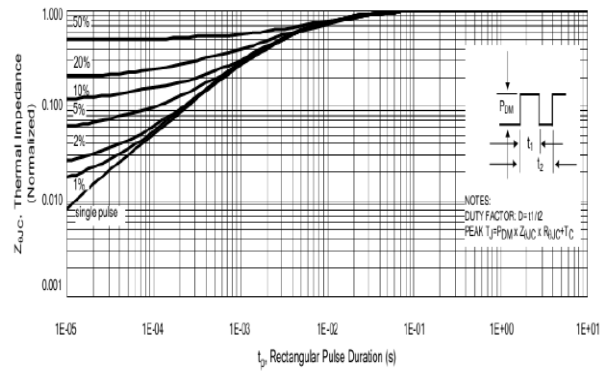
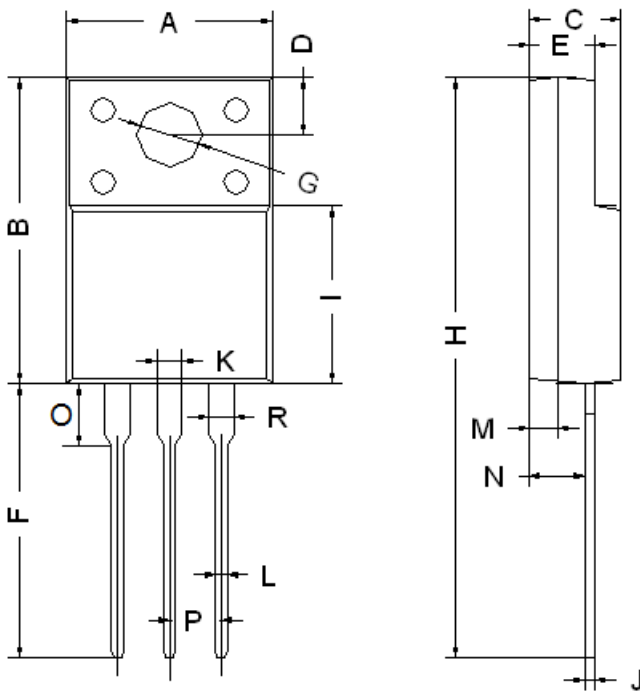


Fig 14 Maximum transient thermal impedance

Package Outline Dimensions (Unit: mm)



ITO-220AB		
Dimension	Min.	Max.
A	9.90	10.30
B	14.80	15.20
C	4.30	4.70
D	2.50	2.90
E	2.80	3.30
F	13.00	13.60
G	3.10	3.30
H	28.00	28.60
I	7.90	8.90
J	0.40	0.60
L	0.70	0.90
M	1.30	1.50
N	2.60	2.80
O	2.60	3.10
P	2.45	2.65
K/R	1.10	1.30

Important Notice

Changzhou Galaxy Century Microelectronics (GME) reserves the right to make changes without further notice to any product information (copyrighted) herein to make corrections, modifications, improvements, or other changes. GME does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others.