

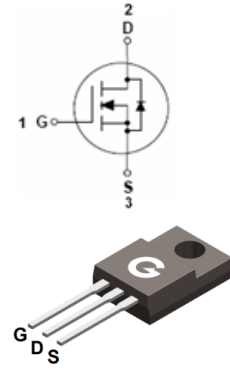
Features

- Low $R_{DS(ON)}$
- Fast switching
- Low gate charge
- Low Reverse transfer capacitances

HF

Mechanical Data

- Case: ITO-220AB
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matted-Tin plated; Solderable Per MIL-STD-202, Method 208



ITO-220AB

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL4N70F	ITO-220AB	50 pcs / Tube	4N70F

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

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DSS}	700	V
Gate-to-Source Voltage	V_{GSS}	± 30	V
Continuous Drain Current ($T_C = 25^\circ\text{C}$)	I_D	4	A
Continuous Drain Current ($T_C = 100^\circ\text{C}$)		2.5	A
Pulsed Drain Current ($t_p = 10\mu\text{s}$, $T_C = 25^\circ\text{C}$)	I_{DM}	28	A
Single Pulse Avalanche Energy ²	E_{AS}	80	mJ
Power Dissipation ($T_C = 25^\circ\text{C}$)	P_D	30	W
Operating Junction Temperature Range	T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	-	-	4.2	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	-	-	62	$^\circ\text{C/W}$

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	$V_{GS} = 0V, I_D = 250\mu A$	700	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 700V, V_{GS} = 0V$	-	-	1	μA
I_{GSS}	Gate-Body Leakage Current	$V_{GS} = \pm 30V, V_{DS} = 0V$	-	-	± 100	nA
On Characteristics						
$R_{DS(ON)}$	Drain-Source On-resistance *1	$V_{GS} = 10V, I_D = 2A$	-	-	3	Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	2	-	4	V
Dynamic Characteristics						
C_{ISS}	Input Capacitance	$V_{GS} = 0V$	-	606	-	pF
C_{OSS}	Output Capacitance	$V_{DS} = 25V$	-	48	-	
C_{RSS}	Reverse Transfer Capacitance	$f = 1\text{MHz}$	-	2.7	-	
Switching Characteristics						
$t_{d(ON)}$	Turn-on Delay Time *3	$V_{DD} = 350V$ $I_D = 4A$ $R_G = 10\Omega$	-	14	-	ns
t_r	Turn-on Rise Time *3		-	15	-	
$t_{d(OFF)}$	Turn-Off Delay Time *3		-	30	-	
t_f	Turn-Off Fall Time *3		-	9	-	
Q_G	Total Gate-Charge	$V_{DD} = 560V$	-	12.7	-	nC
Q_{GS}	Gate to Source Charge	$V_{GS} = 10V$	-	3.0	-	
Q_{GD}	Gate to Drain (Miller) Charge	$I_D = 4A$	-	5.1	-	
Source-Drain Diode Characteristics						
V_{SD}	Diode Forward Voltage *1	$I_{SD} = 4A, V_{GS} = 0V$	-	-	1.5	V
t_{rr}	Reverse Recovery Time	$I_F = 4A, V_{GS} = 0V$	-	325	-	ns
Q_{rr}	Reverse Recovery Charge	$di/dt = 100A/\mu s$	-	1.47	-	μC

Notes:

- 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 $V_{DD} = 100V, V_{GS} = 15V, L = 10mH$
- Guaranteed by design, not subject to production

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

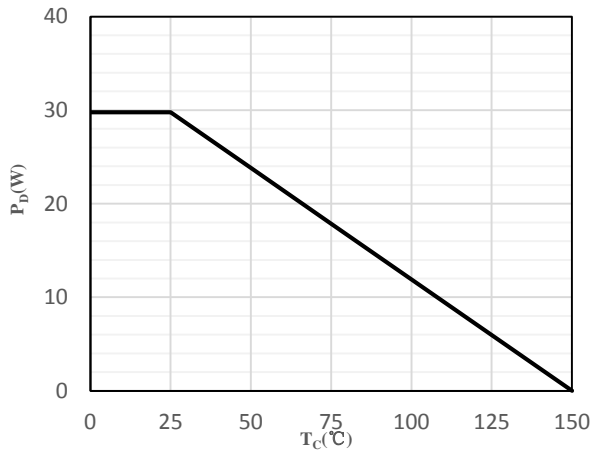


Fig 1 Power Dissipation

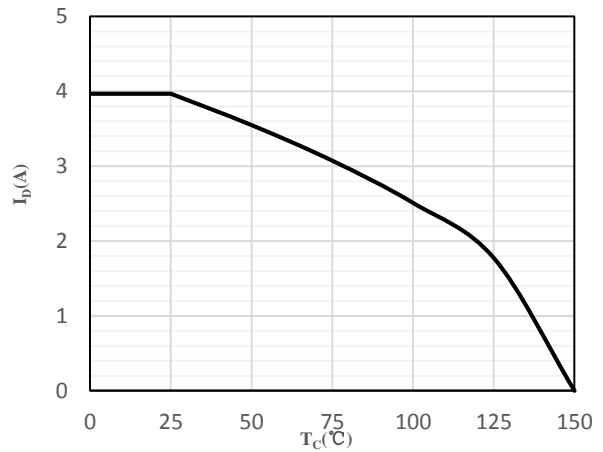


Fig 2 Drain Current

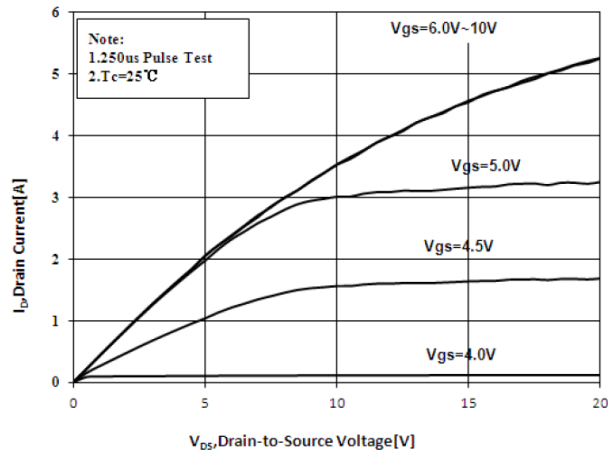


Fig 3 Typical Output Characteristics

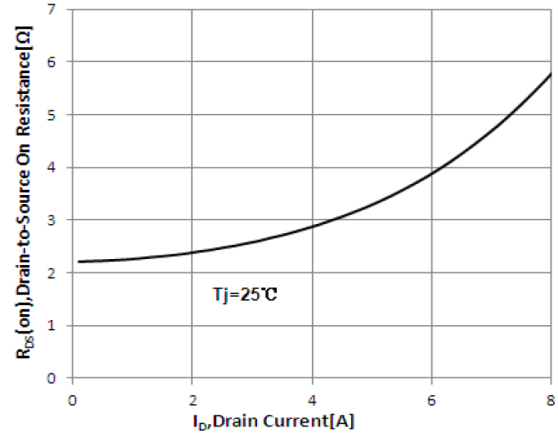


Fig 4 On-Resistance vs. Drain Current

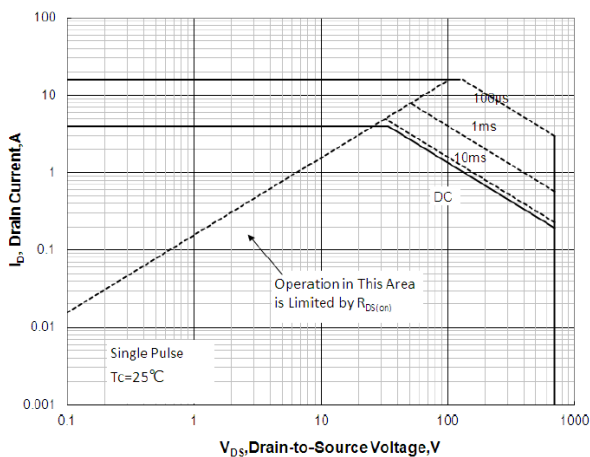


Fig 5 Safe Operation Area

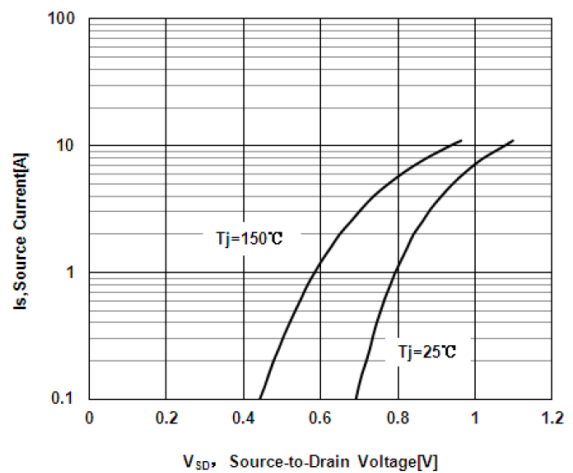


Fig 6 Body-Diode Characteristics

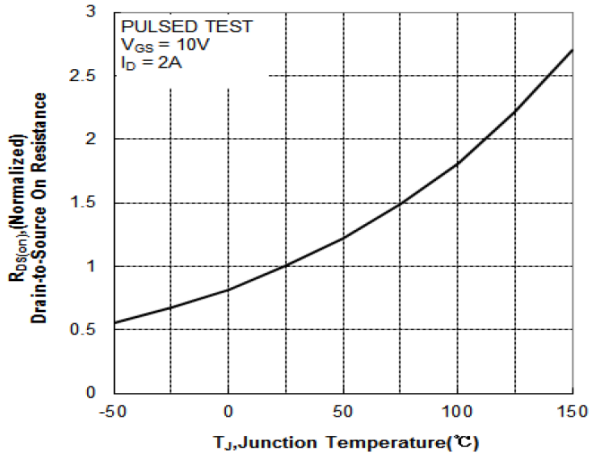


Fig 7 Normalized On-Resistance vs. Junction Temperature

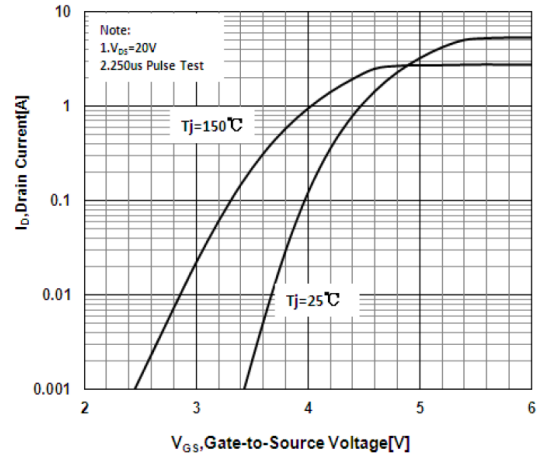


Fig 8 Transfer Characteristics

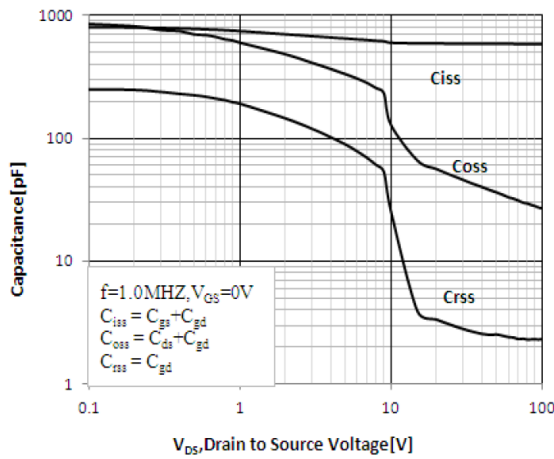


Fig 9 Capacitance Characteristics

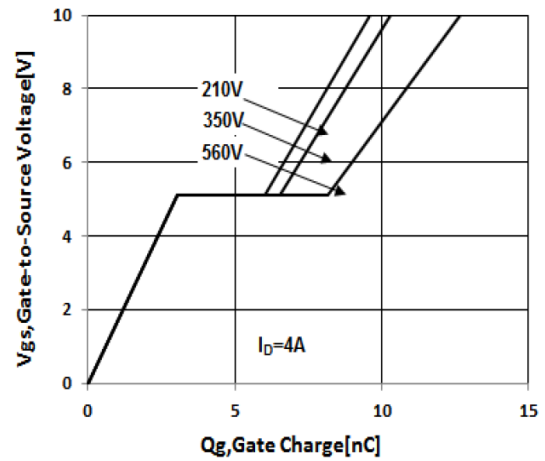


Fig 10 Gate-Charge Characteristics

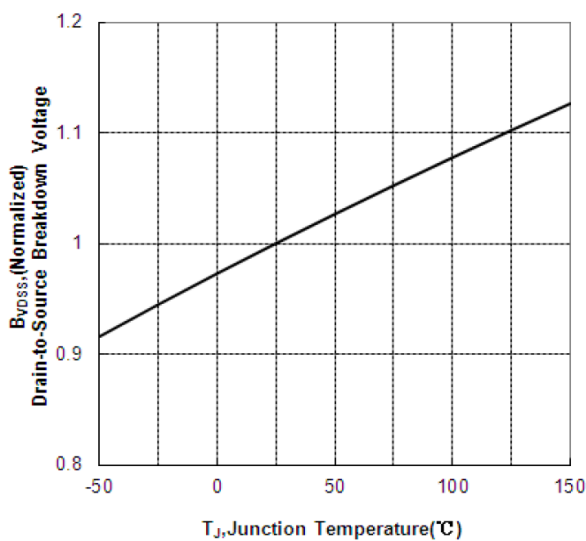


Fig 11 Normalized Breakdown Voltage vs. Junction Temperature

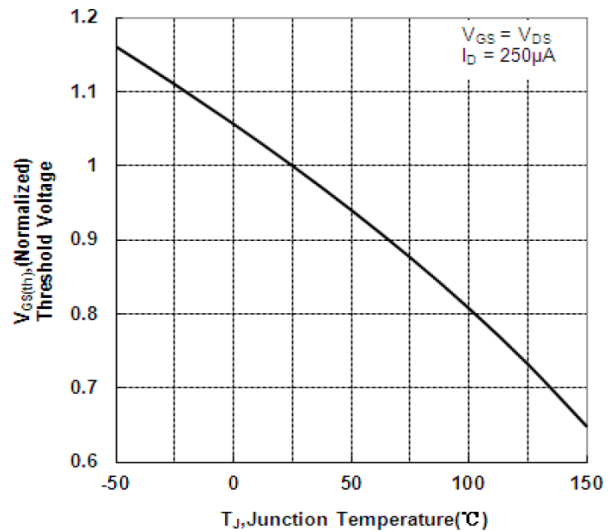
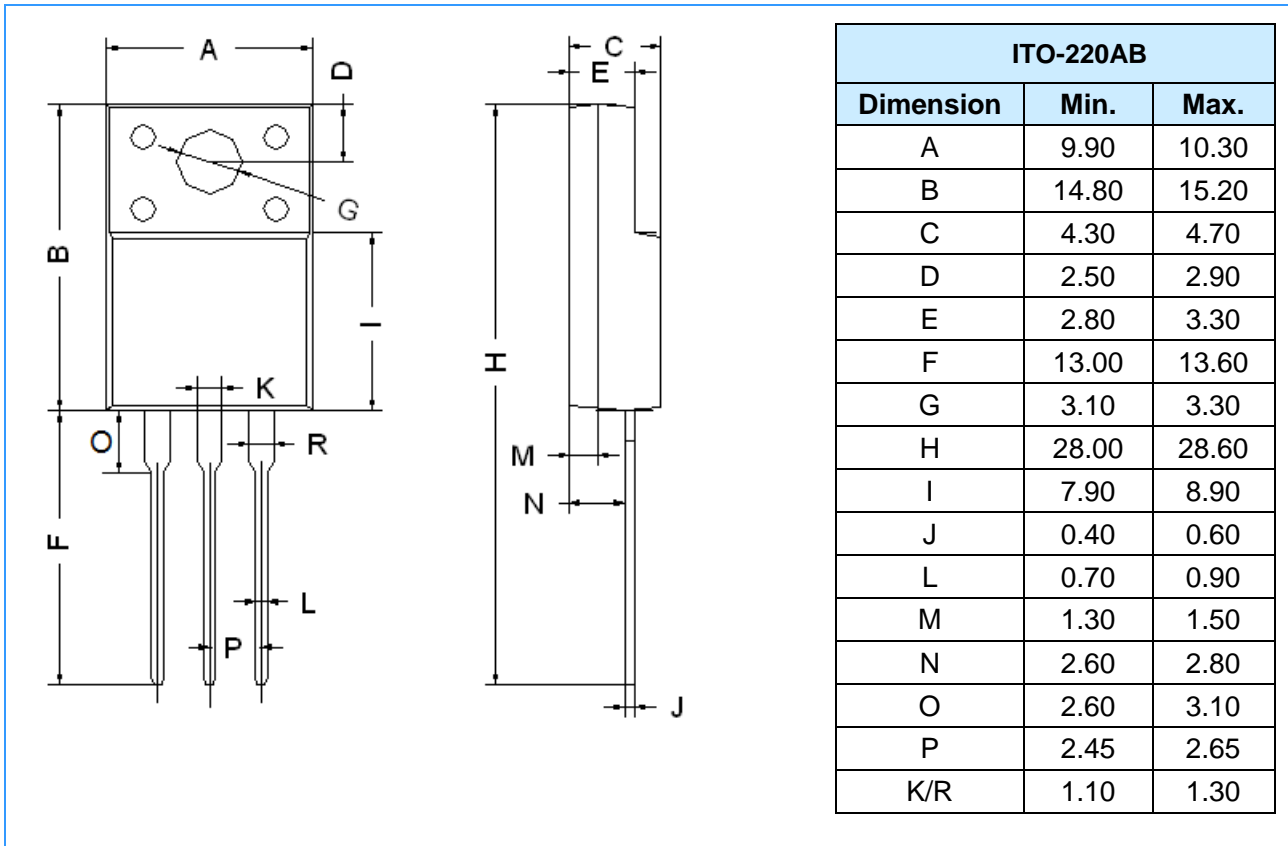


Fig 12 Normalized $V_{GS(th)}$ vs. Junction Temperature

Package Outline Dimensions (Unit: mm)



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.