

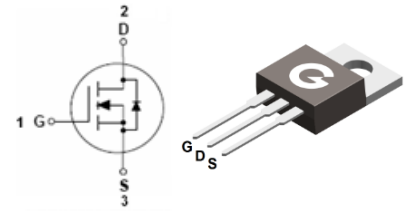
Features

- Low gate charge minimize switching loss
- Fast recovery body diode

HF

Mechanical Data

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



TO-220AB

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL2N100	TO-220AB	50 pcs / Tube	2N100

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

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DSS}	1000	V
Gate-to-Source Voltage	V_{GSS}	± 30	V
Continuous Drain Current	I_D	2	A
Pulsed Drain Current ($V_{GS} = 10\text{V}$)	I_{DM}	8	A
Single Pulse Avalanche Energy ^{*1}	E_{AS}	24	mJ

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation ($T_c = 25^\circ\text{C}$)	P_D	70	W
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	62.5	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	1.79	$^\circ\text{C/W}$
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 (@ $T_J = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
V _{DS}	Drain-Source Breakdown Voltage	V _{GS} = 0V, I _D = 1mA	1000	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 1000V, V _{GS} = 0V	-	-	1	μA
		V _{DS} = 800V, V _{GS} = 0V, T _J = 125°C	-	-	250	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±30V, V _{DS} = 0V	-	-	±100	nA
On Characteristics						
R _{DS(ON)}	Static Drain-Source On-resistance	V _{GS} = 10V, I _D = 1A	-	-	10	Ω
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = 250μA	2	-	4	V
g _{fs}	Forward Threshold Voltage	V _{DS} = 15V, I _D = 2A	-	2.5	-	S
Dynamic Characteristics						
C _{ISS}	Input Capacitance	V _{GS} = 0V V _{DS} = 25V f = 1.0MHz	-	380	-	pF
C _{OSS}	Output Capacitance		-	40	-	
C _{RSS}	Reverse Transfer Capacitance		-	4	-	
Switching Characteristics						
t _{d(ON)}	Turn-on Delay Time	V _{DS} = 500V R _G = 12Ω I _D = 2A V _{GS} = 10V	-	8	-	ns
t _r	Turn-on Rise Time		-	6	-	
t _{d(OFF)}	Turn-Off Delay Time		-	36	-	
t _f	Turn-Off Fall Time		-	15	-	
Q _G	Total Gate-Charge	V _{DS} = 500V V _{GS} = 10V I _D = 2A	-	15	-	nC
Q _{GS}	Gate to Source Charge		-	2.1	-	
Q _{GD}	Gate to Drain (Miller) Charge		-	6	-	
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage	I _{SD} = 2A, V _{GS} = 0V	-	-	1.5	V
I _S	Continuous Source Current		-	-	2	A
I _{SM}	Maximum Pulsed Current		-	-	8	A
trr	Reverse Recovery Time	I _S = I _F , V _{GS} = 0V	-	320	-	ns
Qrr	Reverse Recovery Charge	dI _{SD} /d _t = 100A/μs	-	1000	-	nC

Note 1: The E_{AS} test condition is $V_{DS} = 50V, V_{GS} = 15V, L = 10mH$

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

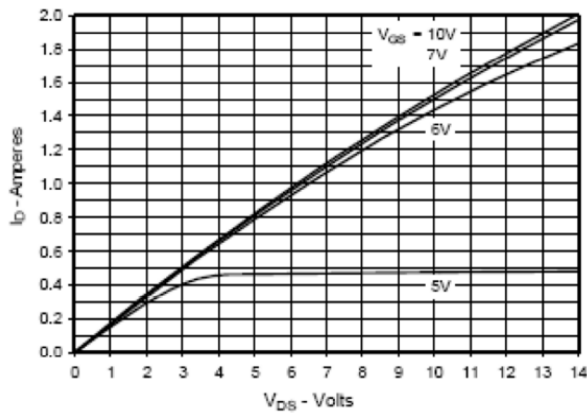


Fig 1 Typical Output Characteristics

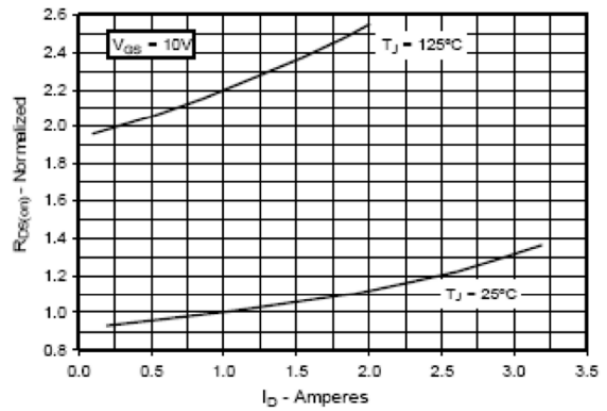


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

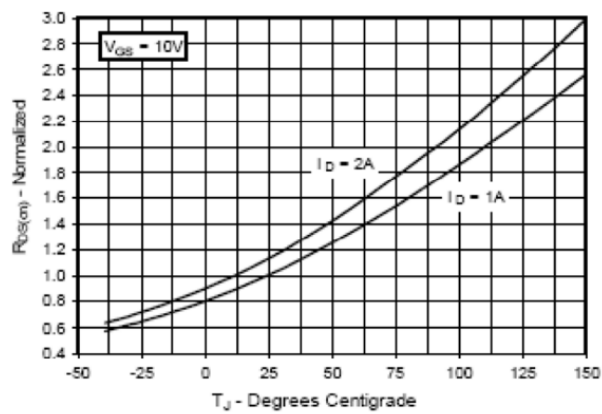


Fig 3 On-Resistance vs. Junction Temperature

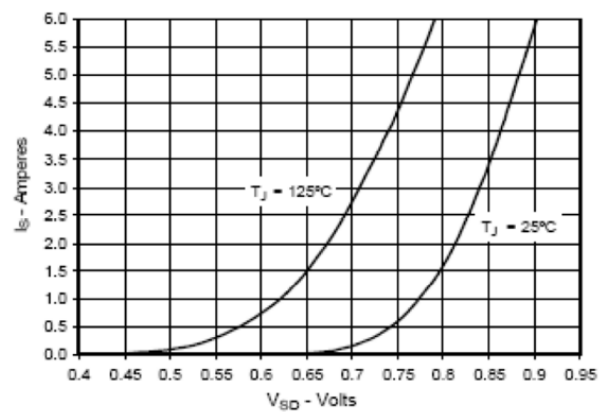


Fig 4 Body-Diode Characteristics

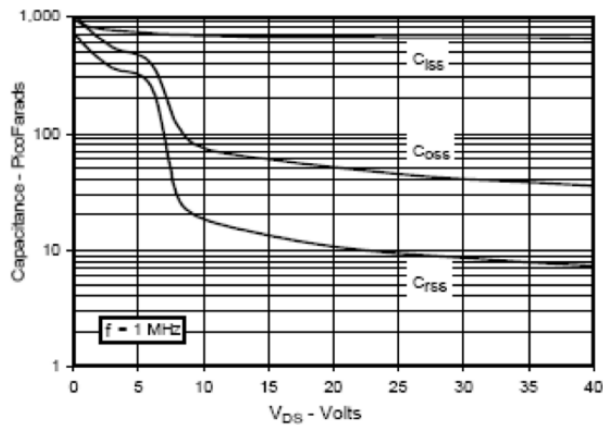


Fig 5 Capacitance Characteristics

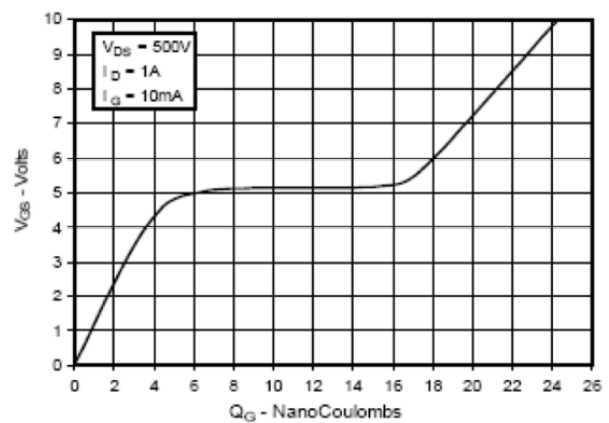


Fig 6 Gate-Charge Characteristics

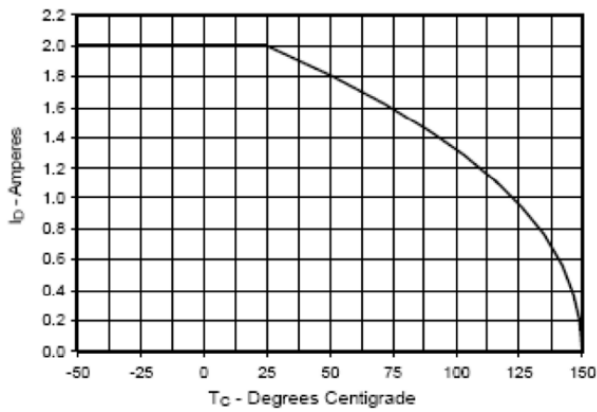


Figure 7 Maximum Continuous Drain Current
 vs. Case Temperature

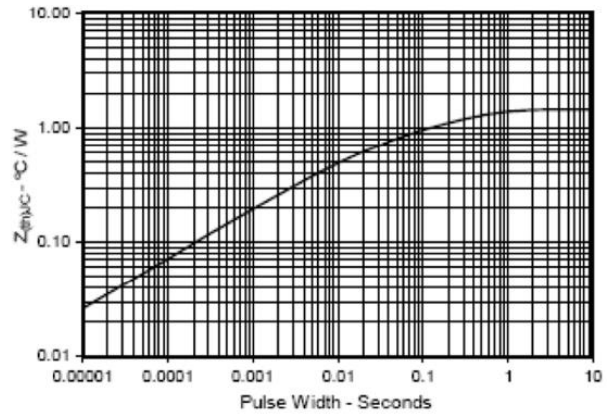
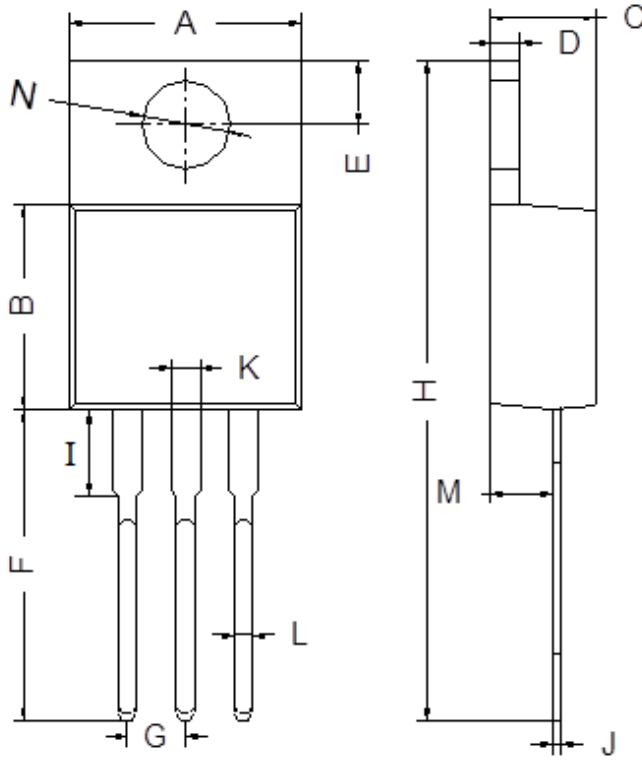


Figure 8 Maximum Effective Transient Thermal
 Impedance, Junction-to-Case

Package Outline Dimensions (Unit: mm)



TO-220AB		
Dimension	Min.	Max.
A	9.80	10.30
B	8.70	9.10
C	4.37	4.77
D	1.07	1.47
E	2.64	2.84
F	13.14	13.74
G	2.44	2.64
H	28.03	28.83
I	3.50	4.00
J	0.28	0.48
K	1.22	1.32
L	0.71	0.91
M	2.40	2.60
N	3.76	3.96

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.