

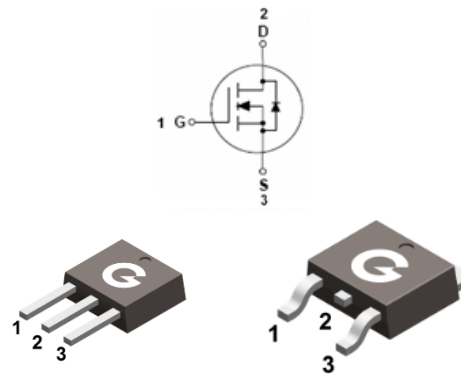
Features

- Super low gate charge
- Green device available
- Excellent C_{dv} / d_t effect decline
- Advanced high cell density trench technology
- JESD22-A114-B ESD rating of class 1A per human body model

HF

Mechanical Data

- Case: TO-251, TO-252
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



BL300N06I
TO-251

BL300N06D
TO-252

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL300N06I	TO-251	80 pcs / Tube	300N06I
BL300N06D	TO-252	80 pcs / Tube or 2500 pcs / Tape & Reel	300N06D

Maximum Ratings (@ $T_A = 25^\circ\text{C}$ 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	26	A
Continuous Drain Current ($T_C = 100^\circ\text{C}$)		16	A
Pulsed Drain Current ($t_p = 10\mu\text{s}$, $T_C = 25^\circ\text{C}$)	I_{DM}	104	A
Single Pulse Avalanche Energy ^{*3}	E_{AS}	8	mJ
Power Dissipation ($T_C = 25^\circ\text{C}$)	P_D	35	W
Operating Junction Temperature Range	T_J	$-55 \sim +150$	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	$-55 \sim +150$	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	-	2.4	3.5	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Air ^{*1}	$R_{\theta JA}$	-	22	30	$^\circ\text{C/W}$

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 = 250μA	60	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 60V, V _{GS} = 0V, T _C = 25°C	-	-	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 = 4A	-	24	30	mΩ
		V _{GS} = 4.5V,I _D = 2A	-	30	38	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = 250μA	1	1.5	2.5	V
R _G	Gate Resistance	V _{GS} = 0V, f = 1MHz	-	3.7	-	Ω
Dynamic Characteristics						
C _{ISS}	Input Capacitance	V _{GS} = 0V V _{DS} = 15V f = 1.0MHz	-	872	-	pF
C _{OSS}	Output Capacitance		-	86	-	
C _{RSS}	Reverse Transfer Capacitance		-	64	-	
Switching Characteristics						
t _{d(ON)}	Turn-on Delay Time *4	V _{DD} = 30V V _{GS} = 10V R _G = 3.3Ω I _D = 4A	-	8	-	ns
t _r	Turn-on Rise Time *4		-	14	-	
t _{d(OFF)}	Turn-Off Delay Time *4		-	25	-	
t _f	Turn-Off Fall Time *4		-	4.6	-	
Q _G	Total Gate-Charge	V _{DD} = 48V V _{GS} = 10V I _D = 4A	-	25	-	nC
Q _{GS}	Gate to Source Charge		-	2.8	-	
Q _{GD}	Gate to Drain (Miller) Charge		-	6	-	
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage *2	I _{SD} = 1A, V _{GS} = 0V, T _J = 25°C	-	0.7	1.2	V
t _{rr}	Reverse Recovery Time	I _F = 6A, V _{GS} = 0V	-	23	-	ns
Q _{rr}	Reverse Recovery Charge	di/dt = 100A/μs	-	17	-	nC

Notes:

- The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ 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 $V_{DD} = 25V, V_{GS} = 10V, L = 0.1mH$
- Guaranteed by design, not subject to production

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

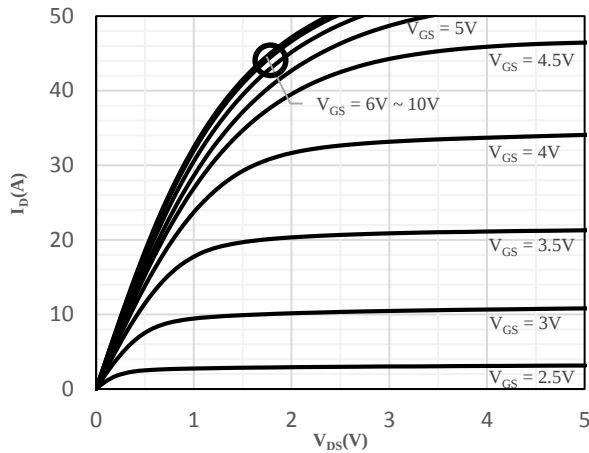


Fig 1 Typical Output Characteristics

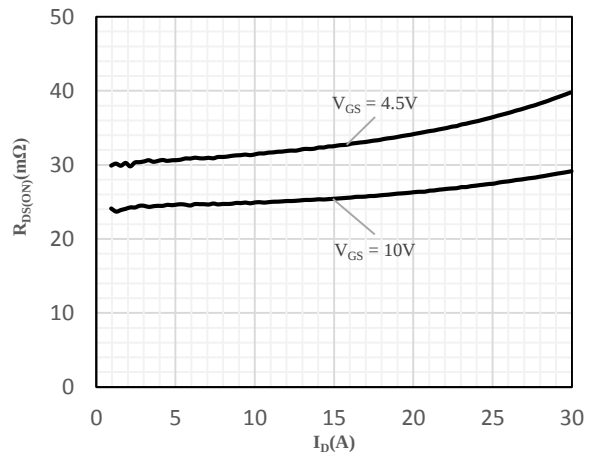


Fig 2 On-Resistance vs. Drain Current
and Gate Voltage

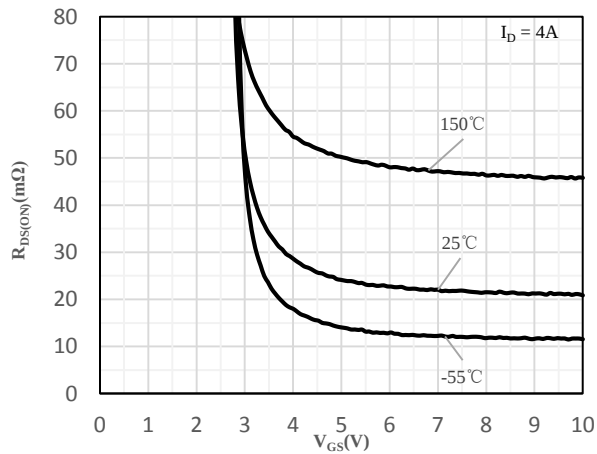


Fig 3 On-Resistance vs. Gate-Source Voltage

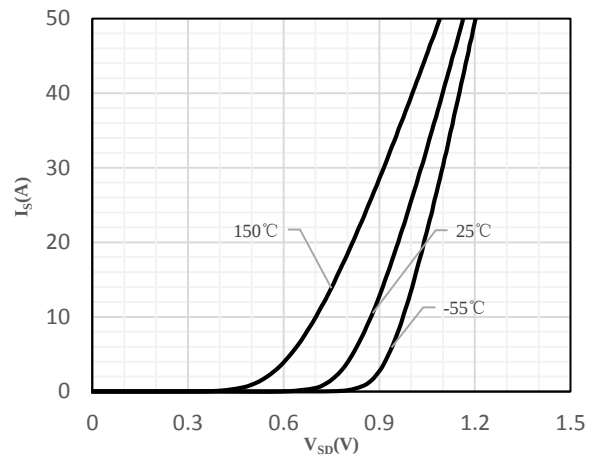


Fig 4 Body-Diode Characteristics

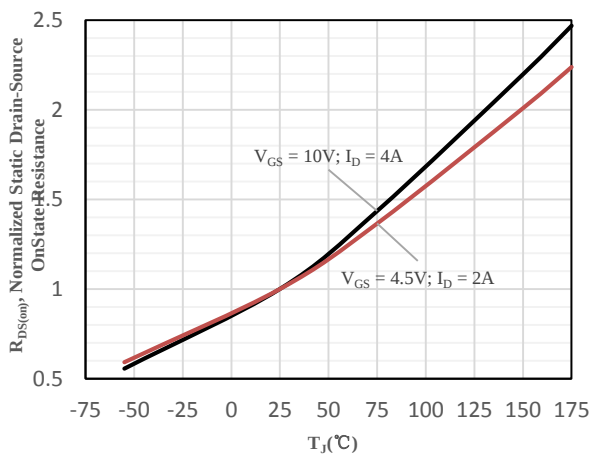


Fig 5 Normalized On-Resistance vs. Junction
Temperature

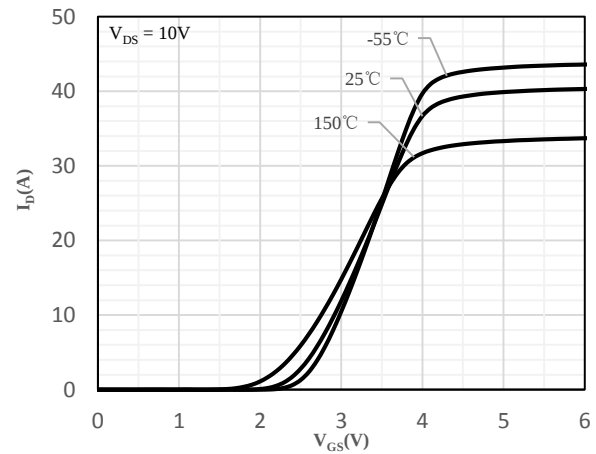


Fig 6 Transfer Characteristics

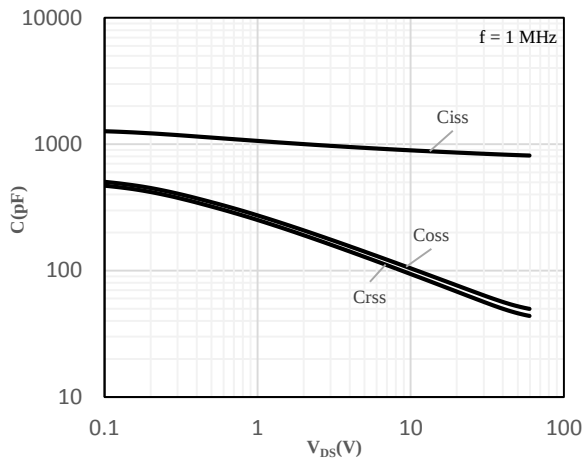


Fig 7 Capacitance Characteristics

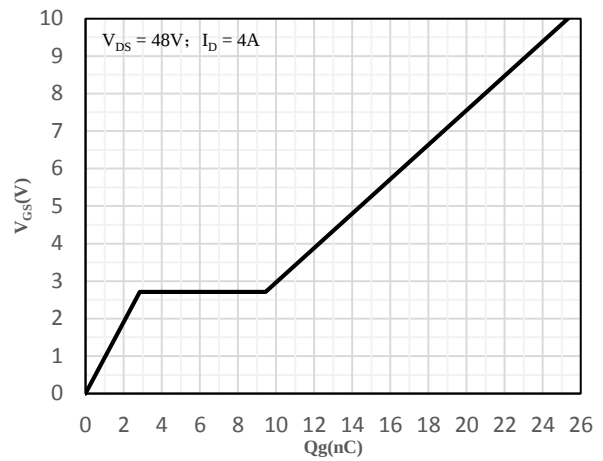


Fig 8 Gate-Charge Characteristics

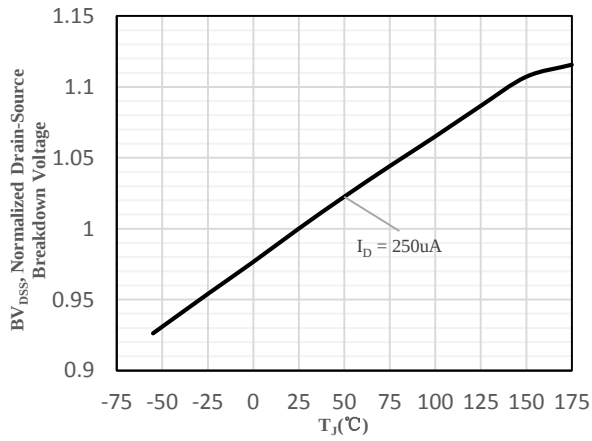


Fig 9 Normalized Breakdown Voltage
vs. Junction Temperature

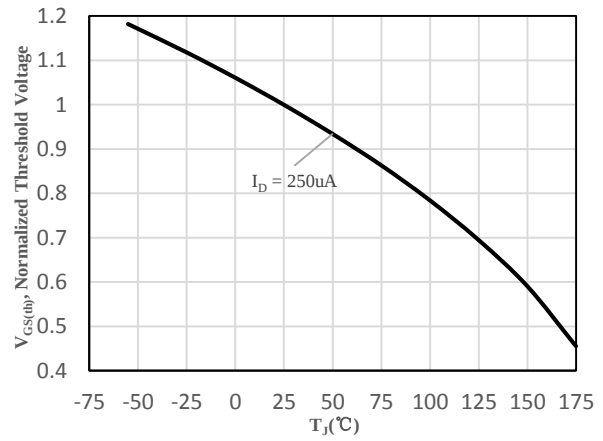


Fig 10 Normalized $V_{GS(th)}$ vs. Junction Temperature

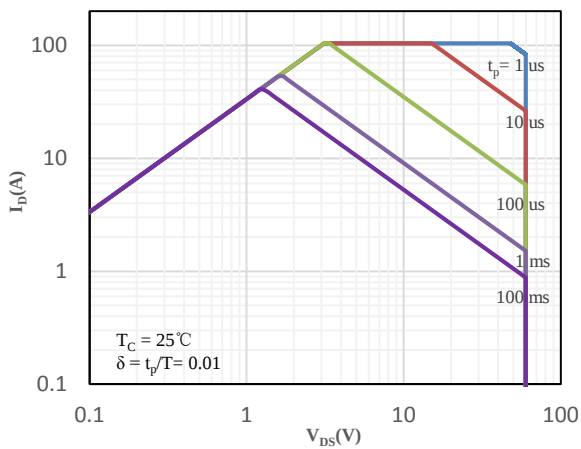


Fig 11 Safe Operation Area

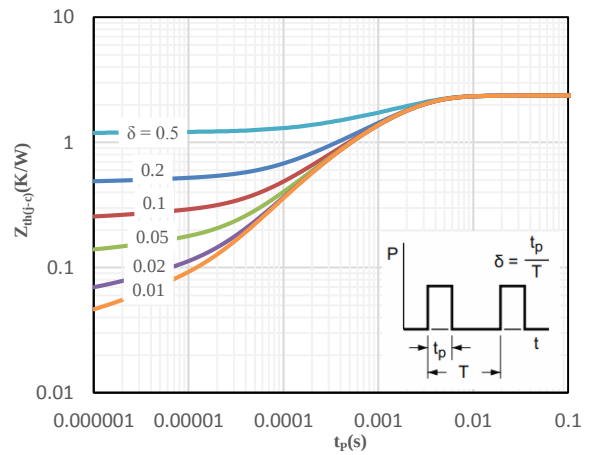
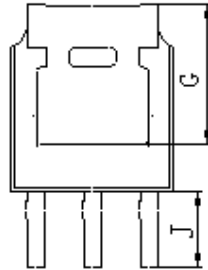
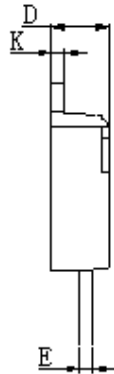
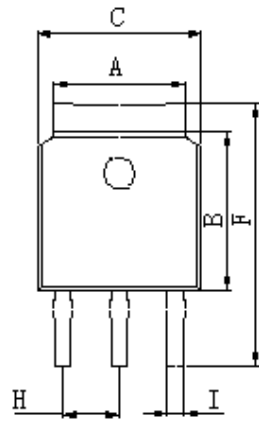
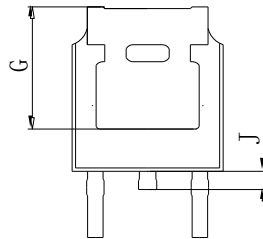
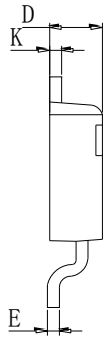
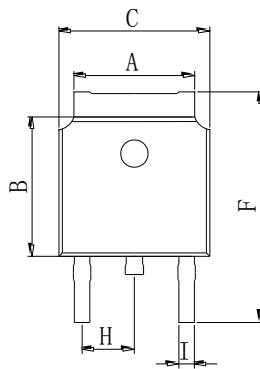


Fig 12 Maximum transient thermal impedance

Package Outline Dimensions (Unit: mm)



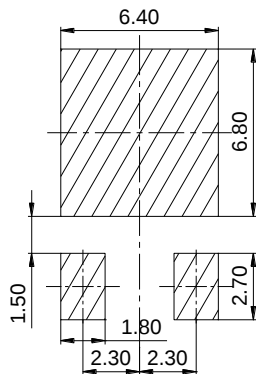
TO-251		
Dimension	Min.	Max.
A	5.05	5.65
B	5.80	6.40
C	6.25	6.85
D	2.20	2.40
E	0.40	0.60
F	11.00	11.60
G	5.05	5.65
H	2.10	2.50
I	0.70	0.90
J	4.00	4.40
K	0.40	0.60



TO-252		
Dimension	Min.	Max.
A	5.05	5.65
B	5.80	6.40
C	6.25	6.85
D	2.20	2.40
E	0.40	0.60
F	9.71	10.31
G	5.05	5.65
H	2.10	2.50
I	0.70	0.90
J	0.50	0.70
K	0.40	0.60

Mounting Pad Layout (Unit: mm)

TO-252



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.