N-Channel Enhancement Mode MOSFET

BL1014L

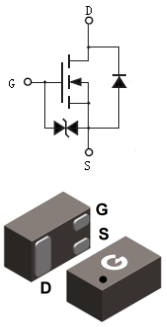
Features

HF

- N-Channel switch with low $R_{DS(on)}$
- Operated at low logic level gate drive

Mechanical Data

- Case: DFN1006-3
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



DFN1006-3

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL1014L	DFN1006-3	10000 pcs / Tape & Reel	KM

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

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DSS}	30	V
Gate-to-Source Voltage	V_{GSS}	±12	V
Continuous Drain Current	I_D	0.6	A
Pulsed Drain Current *1	I_{DM}	1.8	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation *2	P_D	0.15	W
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	833	°C/W
Operating Junction Temperature Range	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Electrical Characteristics (@ T_A = 25°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	30	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 30V, V_{GS} = 0V	-	-	1	μA
I_{GSS}	Gate-Body Leakage Current	V_{GS} = ±10V, V_{DS} = 0V	-	-	±3	μA
On Characteristics						
$R_{DS(ON)}$	Static Drain-Source On-resistance *3	V_{GS} = 4.5V,I_D = 0.6A	-	335	420	mΩ
		V_{GS} = 2.5V,I_D = 0.3A	-	404	540	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250μA	0.5	0.95	1.5	V
Dynamic Characteristics						
C_{ISS}	Input Capacitance	V_{GS} = 0V V_{DS} = 10V f = 1.0MHz	-	73	-	pF
C_{OSS}	Output Capacitance		-	29	-	
C_{RSS}	Reverse Transfer Capacitance		-	16	-	
Q_G	Total Gate-Charge	V_{DS} = 15V V_{GS} = 4.5V I_D = 0.8A	-	2.23	-	nC
Q_{GS}	Gate to Source Charge		-	0.63	-	
Q_{GD}	Gate to Drain (Miller) Charge		-	0.38	-	
Switching Characteristics *4						
$t_{d(ON)}$	Turn-on Delay Time	V_{DS} = 15V V_{GS} = 4.5V R_G = 51Ω I_D = 0.7A	-	5	-	ns
t_r	Turn-on Rise Time		-	8.2	-	
$t_{d(OFF)}$	Turn-Off Delay Time		-	23	-	
t_f	Turn-Off Fall Time		-	41	-	
Source-Drain Diode Characteristics						
V_{SD}	Diode Forward Voltage *3	I_{SD} = 0.6A, V_{GS} = 0V	-	0.9	1.2	V

Notes:

1. Repetitive rating: Pulse width limited by maximum junction temperature
2. Device mounted on FR-4 PCB
3. The data tested by pulsed, pulse width ≤ 300μs, duty cycle ≤ 0.5%
4. These parameters have no way to verify

Ratings and Characteristic Curves (@ T_A = 25°C unless otherwise specified)

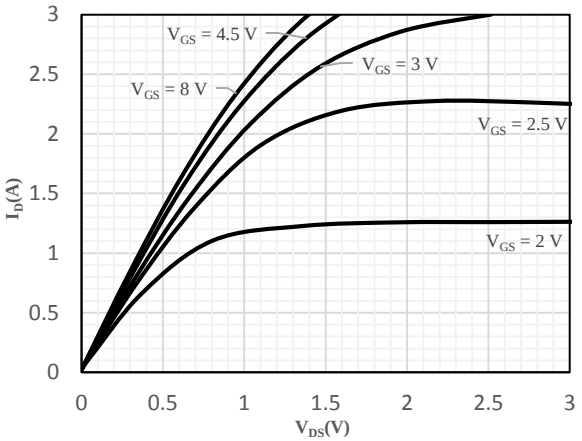


Fig 1 Output Characteristics

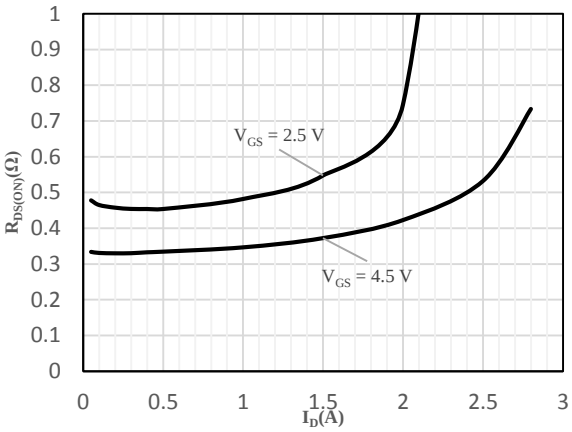


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

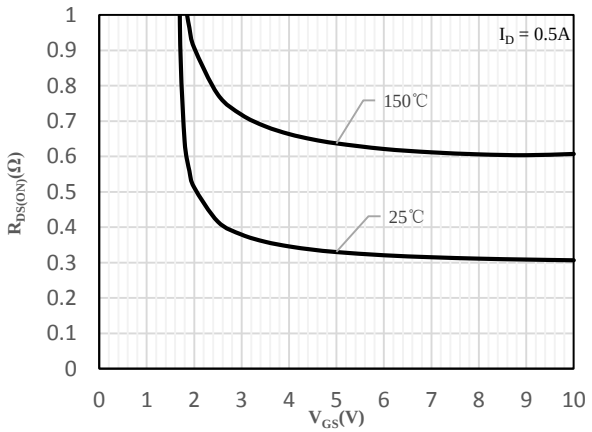


Fig 3 On-Resistance vs. Gate-Source Voltage

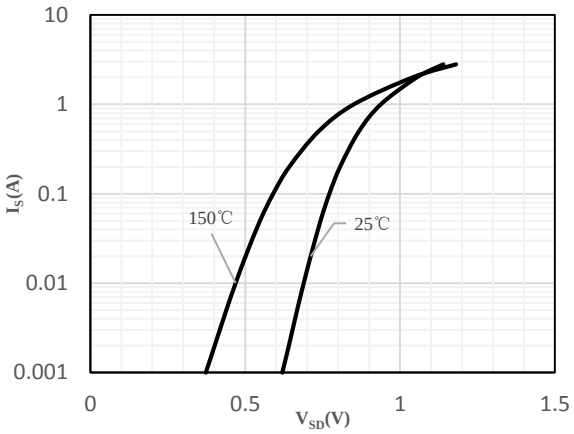


Fig 4 Body-Diode Characteristics

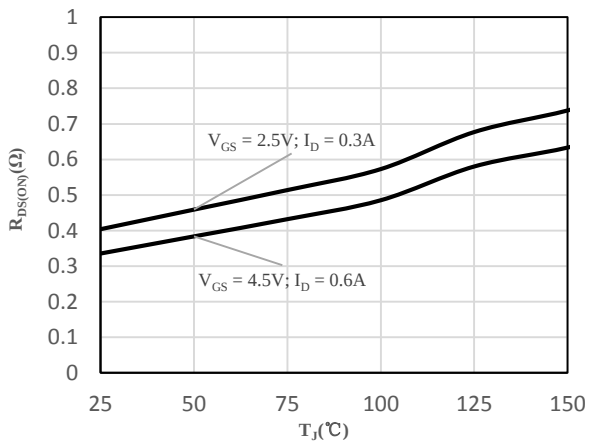


Fig 5 On-Resistance vs. Junction Temperature

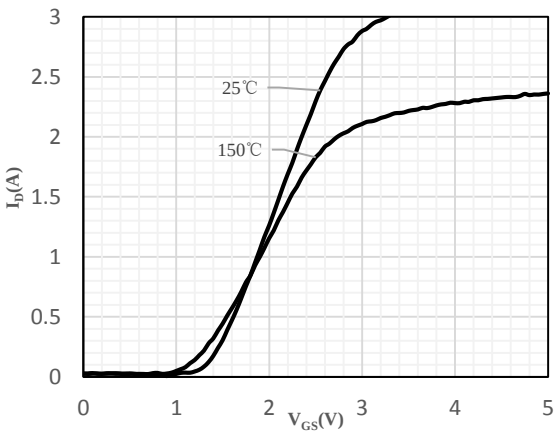


Fig 6 Transfer Characteristics

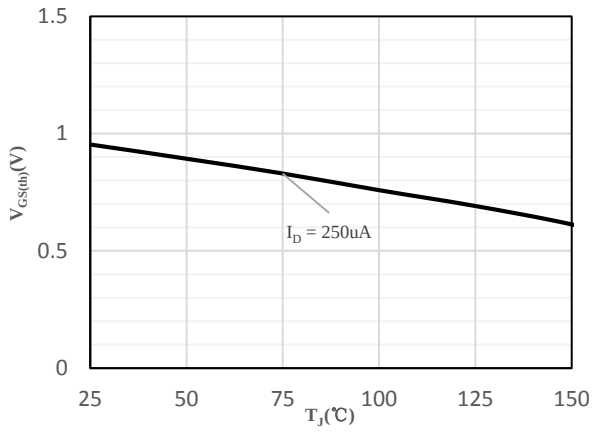


Fig 7 Gate Voltage vs. Junction Temperature

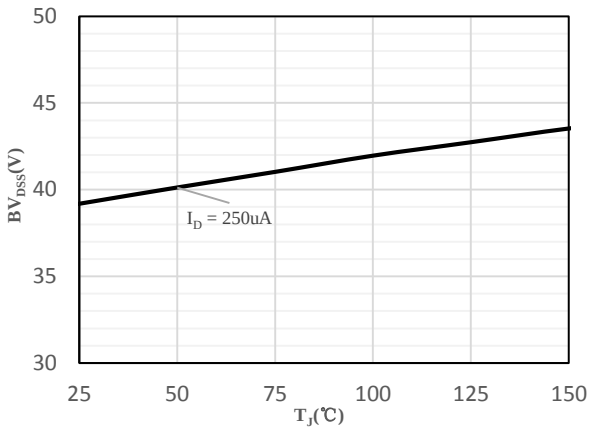


Fig 8 Drain-Source vs. Junction Temperature

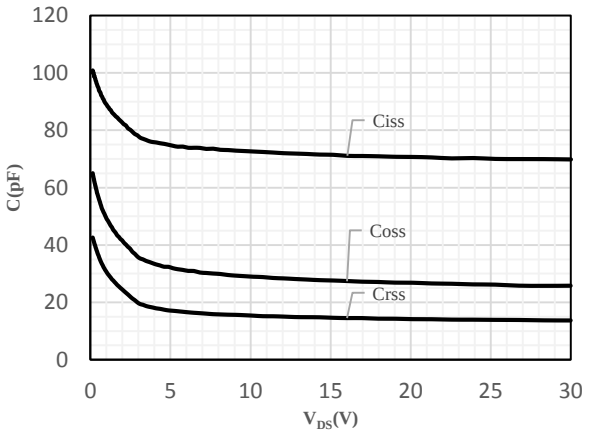


Fig 9 Capacitance Characteristics

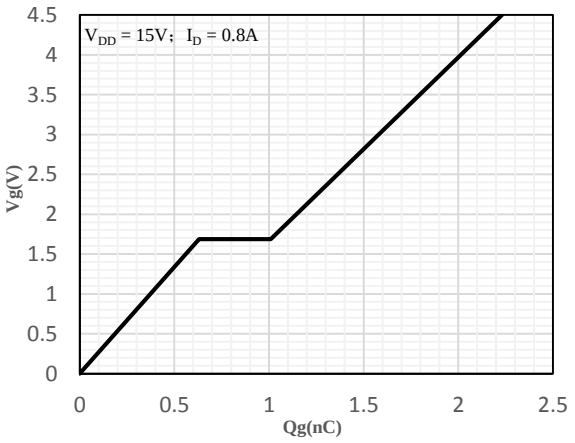
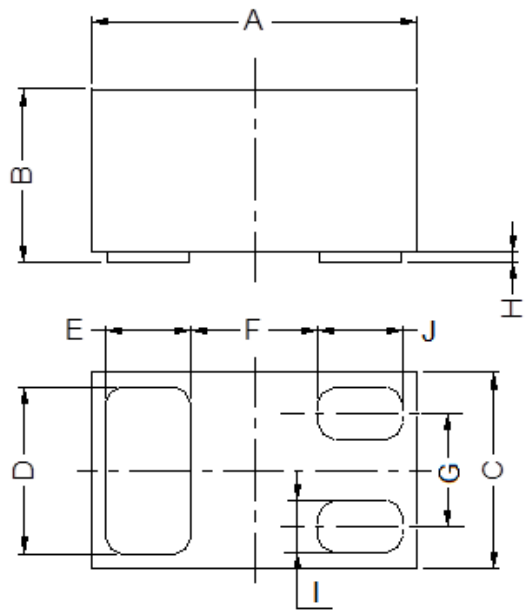


Fig 10 Gate-Charge Characteristics

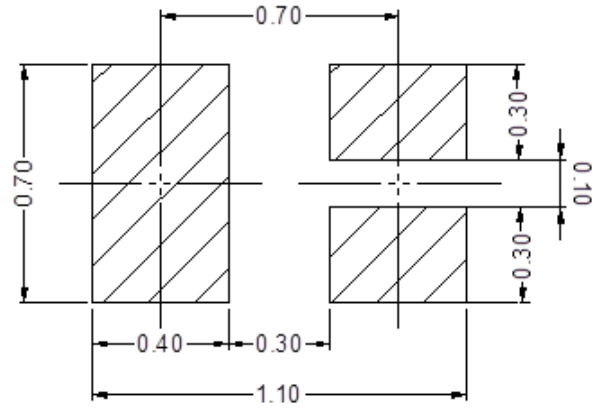
Package Outline Dimensions (Unit: mm)



DFN1006-3			
Dimension	**Min.**	**Typ.**	**Max.**
A	0.95	1.00	1.075
B	0.47	0.50	0.53
C	0.55	0.60	0.675
D	0.45	0.50	0.55
E/J	0.20	0.25	0.30
F	-	0.40	-
G	-	0.35	-
H	0	0.03	0.05
I	0.10	0.15	0.20

Package Outline Dimensions (Unit: mm)

DFN1006-3



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.