银河微电子 Galaxy Microelectronics

P+N-Channel Enhancement Mode MOSFET

GBLH2203-3DL8

Features

HF

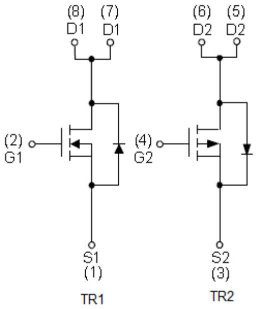
- Reliable and Rugged
- Green device available

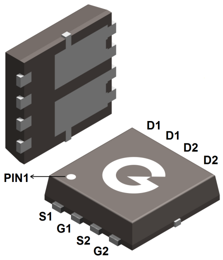
Applications

- Synchronous Rectification
- Motor Control
- Protable equipment application

Mechanical Data

- Case: PDFN3×3-8LC
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208





PDFN3×3-8LC

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
GBLH2203-3DL8	PDFN3×3-8LC	5000 pcs / Tape & Reel	GBLH2203

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

Parameter	Symbol	TR1	TR2	Unit
Drain-to-Source Voltage	V_{DSS}	20	-20	V
Gate-to-Source Voltage	V_{GSS}	±12	±12	V
Continuous Drain Current (T_C = 25°C)	I_D	24	-24	A
Continuous Drain Current (T_C = 100°C)		15	-15	A
Pulsed Drain Current (t_p = 10μs, T_C = 25°C)	I_{DM}	48	-48	A
Power Dissipation (T_C = 25°C)	P_D	18	18	W
Operating Junction Temperature Range	T_J	-55 ~ +150		°C
Storage Temperature Range	T_{STG}	-55 ~ +150		°C

Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	-	-	7	°C/W
Thermal Resistance Junction-to-Air *1	$R_{\theta JA}$	-	-	60	°C/W

Electrical Characteristics-TR1 (@ 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	20	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 20V, V_{GS} = 0V	-	-	1	μA
I_{GSS}	Gate-Body Leakage Current	V_{GS} = ±12V, V_{DS} = 0V	-	-	±100	nA
On Characteristics						
$R_{DS(ON)}$	Drain-Source On-resistance [*2]	V_{GS} = 4.5V,I_D = 5A	-	-	20	mΩ
		V_{GS} = 2.5V,I_D = 3A	-	-	25	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250μA	0.4	-	1.0	V
Dynamic Characteristics						
C_{ISS}	Input Capacitance	V_{GS} = 0V V_{DS} = 10V f = 1.0MHz	-	760	-	pF
C_{OSS}	Output Capacitance		-	136	-	
C_{RSS}	Reverse Transfer Capacitance		-	84	-	
Switching Characteristics						
$t_{d(ON)}$	Turn-on Delay Time [*3]	V_{DD} = 10V V_{GS} = 4.5V R_G = 3Ω I_D = 5A	-	8	-	ns
t_r	Turn-on Rise Time [*3]		-	31	-	
$t_{d(OFF)}$	Turn-Off Delay Time [*3]		-	36	-	
t_f	Turn-Off Fall Time [*3]		-	11	-	
Q_G	Total Gate-Charge	V_{DD} = 10V V_{GS} = 4.5V I_D = 5A	-	10	-	nC
Q_{GS}	Gate to Source Charge		-	2.4	-	
Q_{GD}	Gate to Drain (Miller) Charge		-	2.7	-	
Source-Drain Diode Characteristics						
V_{SD}	Diode Forward Voltage [*2]	I_{SD} = 5A, V_{GS} = 0V	-	-	1.2	V

Electrical Characteristics-TR2 (@ 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	-20	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = -20V, V_{GS} = 0V	-	-	-1	μA
I_{GSS}	Gate-Body Leakage Current	V_{GS} = ±12V, V_{DS} = 0V	-	-	±100	nA
On Characteristics						
$R_{DS(ON)}$	Drain-Source On-resistance [*2]	V_{GS} = -4.5V, I_D = -5A	-	-	20	mΩ
		V_{GS} = -2.5V, I_D = -3A	-	-	25	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = -250μA	-0.4	-	-1.0	V
Dynamic Characteristics						
C_{ISS}	Input Capacitance	V_{GS} = 0V V_{DS} = -10V f = 1.0MHz	-	1500	-	pF
C_{OSS}	Output Capacitance		-	233	-	
C_{RSS}	Reverse Transfer Capacitance		-	198	-	
Switching Characteristics						
$t_{d(ON)}$	Turn-on Delay Time [*3]	V_{GS} = -4.5V V_{DD} = -10V I_D = -12A R_G = 2.5Ω	-	10	-	ns
t_r	Turn-on Rise Time [*3]		-	31	-	
$t_{d(OFF)}$	Turn-Off Delay Time [*3]		-	28	-	
t_f	Turn-Off Fall Time [*3]		-	8	-	
Q_G	Total Gate-Charge	V_{DD} = -10V V_{GS} = -4.5V I_D = -5A	-	15.3	-	nC
Q_{GS}	Gate to Source Charge		-	2.2	-	
Q_{GD}	Gate to Drain (Miller) Charge		-	4.4	-	
Source-Drain Diode Characteristics						
V_{SD}	Diode Forward Voltage [*2]	I_{SD} = -5A, V_{GS} = 0V	-	-	-1.2	V

Notes:

1. The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper
2. The data tested by pulsed, pulse width ≤ 300μs, duty cycle ≤ 2%
3. Guaranteed by design, not subject to production

Ratings and Characteristics Curves-TR1 (@ T_A = 25°C unless otherwise specified)

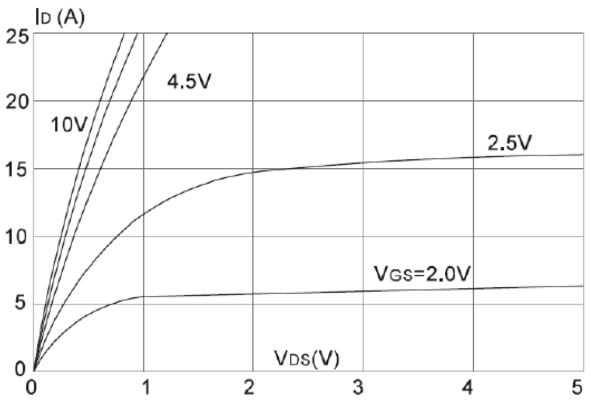


Fig 1 Typical Output Characteristics

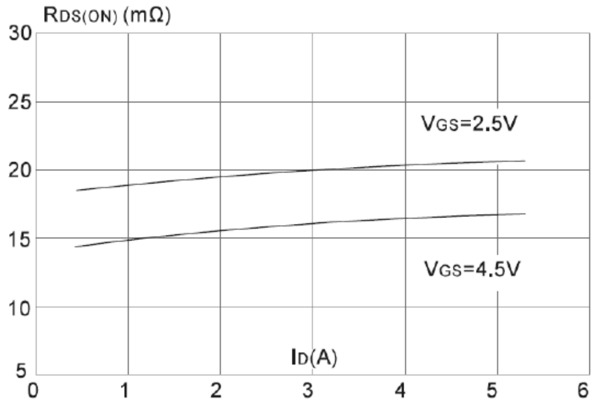


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

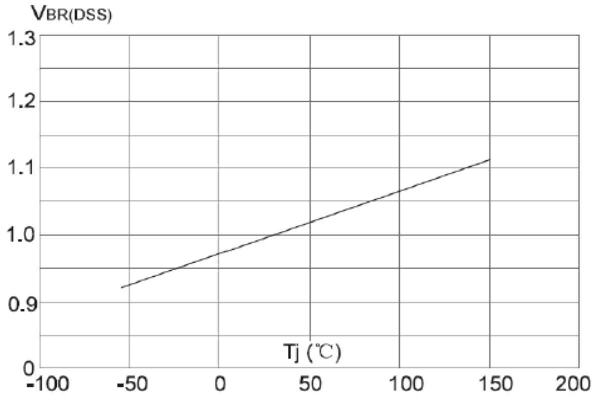


Fig 3 Normalized Breakdown Voltage vs. Junction Temperature

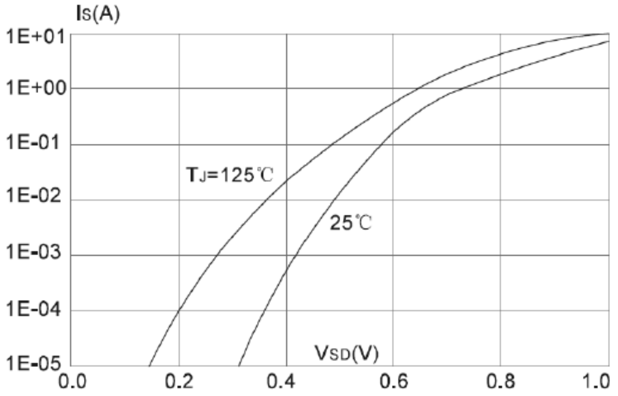


Fig 4 Body-Diode Characteristics

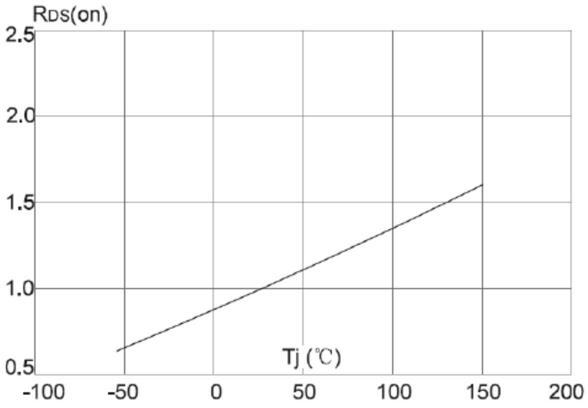


Fig 5 Normalized On-Resistance vs. Junction Temperature

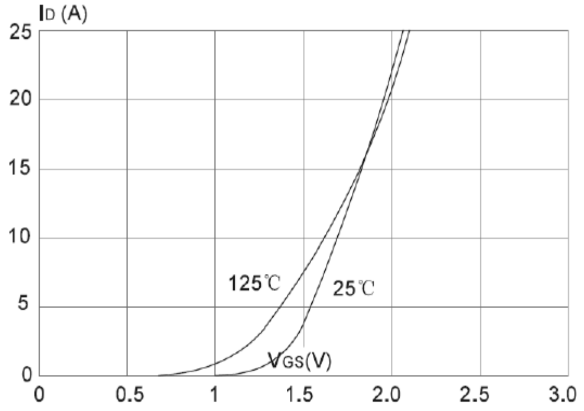


Fig 6 Transfer Characteristics

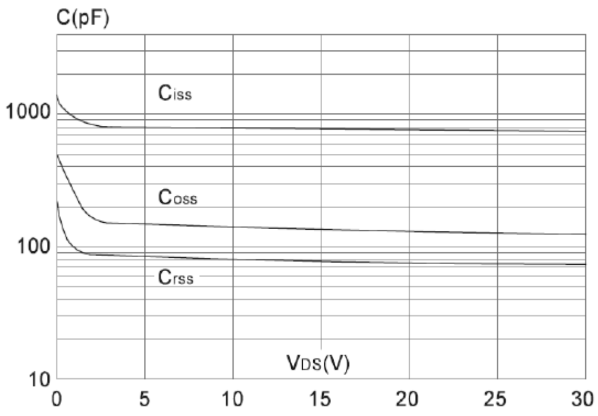


Fig 7 Capacitance Characteristics

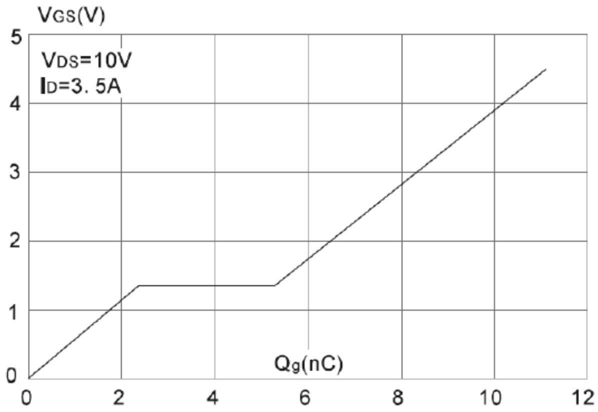


Fig 8 Gate-Charge Characteristics

Ratings and Characteristics Curves-TR2 (@ T_A = 25°C unless otherwise specified)

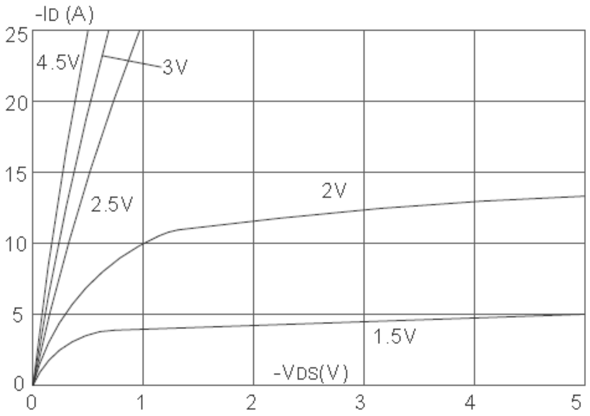


Fig 1 Typical Output Characteristics

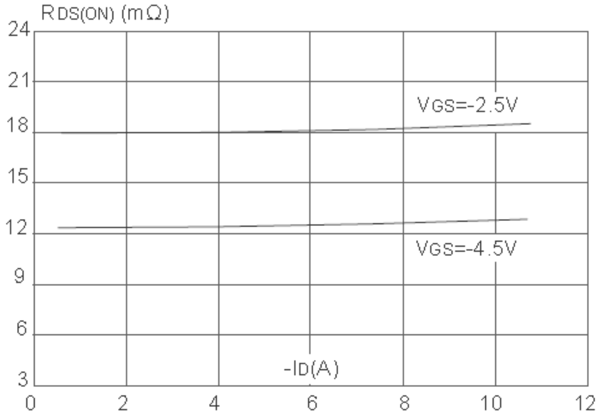


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

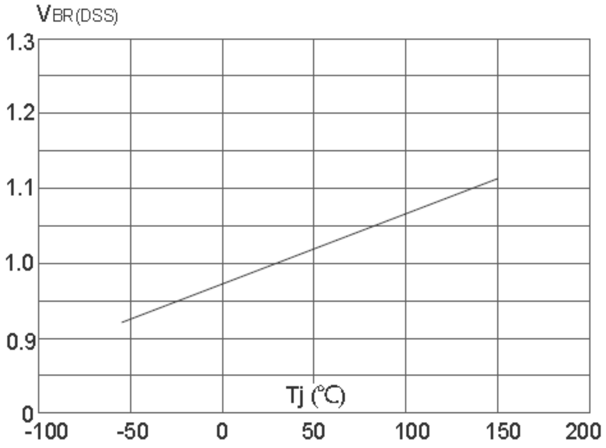


Fig 3 Normalized Breakdown Voltage vs. Junction Temperature

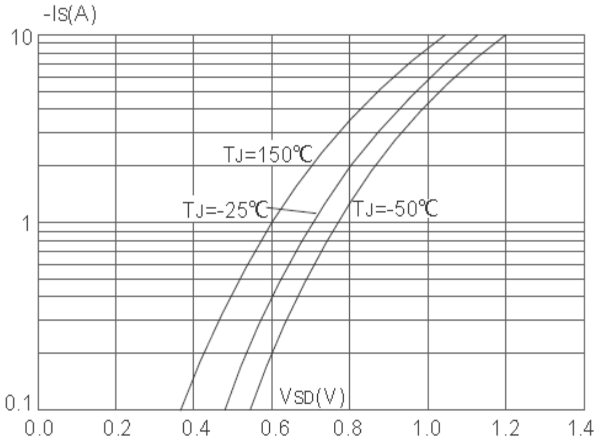


Fig 4 Body-Diode Characteristics

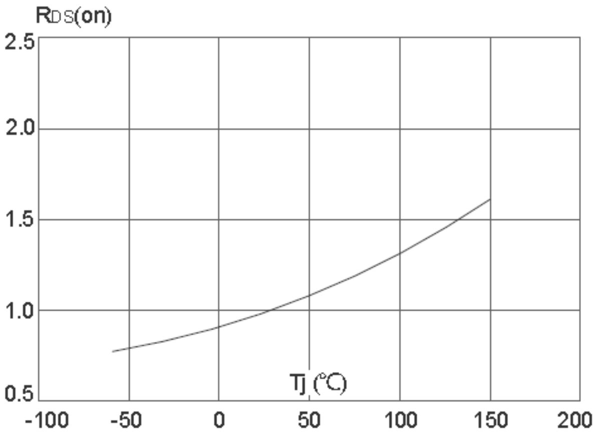


Fig 5 Normalized On-Resistance vs. Junction Temperature

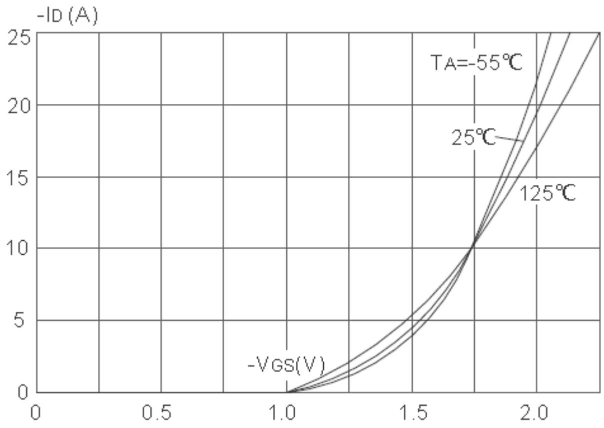
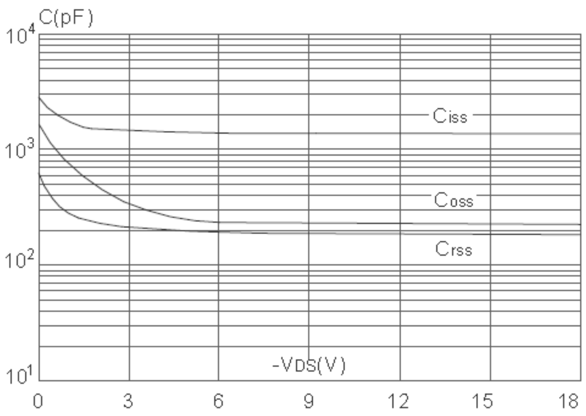


Fig 6 Transfer Characteristics



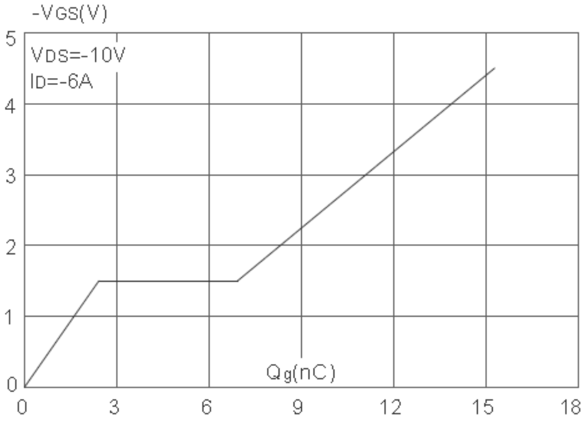
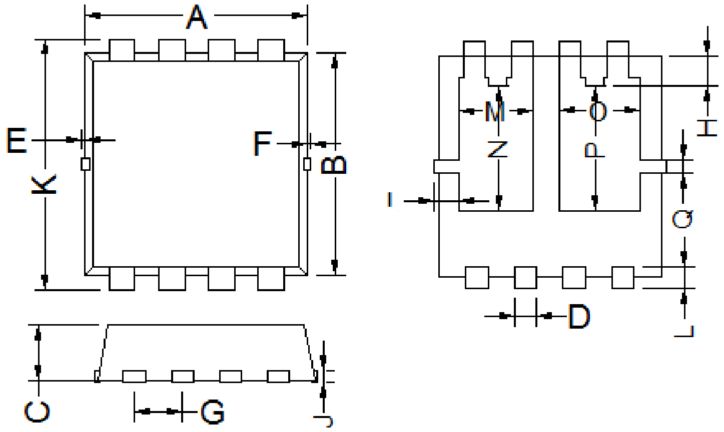


Fig 7 Capacitance Characteristics

Fig 8 Gate-Charge Characteristics

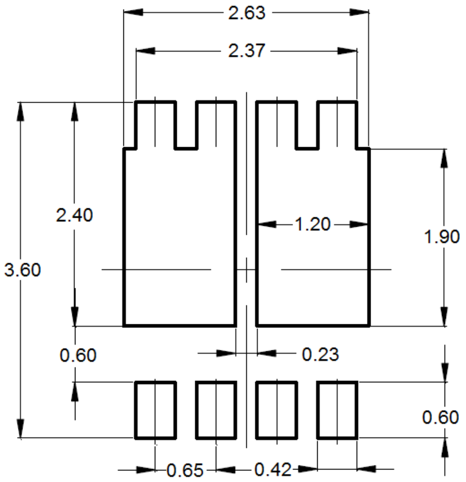
Package Outline Dimensions (Unit: mm)



PDFN3×3-8LC		
Dimension	**Min.**	**Max.**
A	2.90	3.10
B	2.90	3.10
C	0.55	0.75
D	0.20	0.40
E	0.00	0.20
F	0.00	0.20
G	0.55	0.75
H	0.20	0.40
I	0.20	0.40
J	0.10	0.20
K	3.15	3.45
L	0.25	0.45
M/O	0.90	1.20
N/P	1.65	1.85
Q	0.10	0.30

Mounting Pad Layout (Unit: mm)

PDFN3×3-8LC



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