Dual-N-Channel Enhancement Mode Power MOSFET

GBLN3302-5DL8

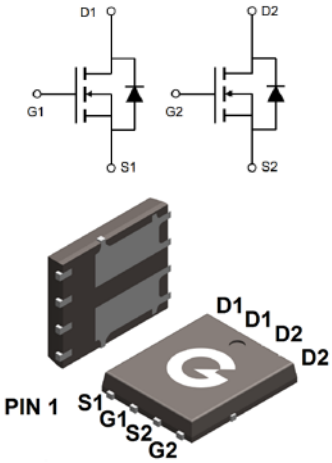
Features

HF

- Super Low Gate Charge
- Green Device Available
- Excellent CdV/dt Effect Decline
- Advanced High Cell Density Trench Technology

Mechanical Data

- Case: PDFN5×6-8LC
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



PDFN5×6-8LC

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
GBLN3302-5DL8	PDFN5×6-8LC	5000 pcs / Tape & Reel	GBLN3302

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}	±20	V
Continuous Drain Current (T_A = 25°C) *1, 2	I_D	4.5	A
Continuous Drain Current (T_A = 70°C) *1, 2		3.5	A
Pulsed Drain Current *3	I_{DM}	18	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (T_A= 25°C)	P_D	1.7	W
Operating Junction Temperature Range	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

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	30	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 30V, V_{GS} = 0V, T_J = 25°C	-	-	0.5	μA
		V_{DS} = 30V, V_{GS} = 0V, T_J = 55°C	-	-	10	μA
I_{GSS}	Gate-Body Leakage Current	V_{GS} = ±20V, V_{DS} = 0V	-	-	±100	nA
On Characteristics						
$R_{DS(ON)}$	Static Drain-Source On-resistance *3	V_{GS} = 10V,I_D = 3.5A	-	-	47	mΩ
		V_{GS} = 4.5V,I_D = 2.8A	-	-	65	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250μA	1	-	3	V
Dynamic Characteristics						
C_{ISS}	Input Capacitance	V_{GS} = 0V V_{DS} = 15V f = 1.0MHz	-	420	-	pF
C_{OSS}	Output Capacitance		-	60	-	
C_{RSS}	Reverse Transfer Capacitance		-	53	-	
Switching Characteristics						
$t_{d(ON)}$	Turn-on Delay Time	V_{GS} = 10V V_{DD} = 15V I_D = 1A R_G = 3.3Ω	-	2	-	ns
t_r	Turn-on Rise Time		-	34	-	
$t_{d(OFF)}$	Turn-Off Delay Time		-	13	-	
t_f	Turn-Off Fall Time		-	6	-	
Q_G	Total Gate-Charge	V_{DD} = 15V V_{GS} = 4.5V I_D = 1A	-	5	-	nC
Q_{GS}	Gate to Source Charge		-	1.1	-	
Q_{GD}	Gate to Drain (Miller) Charge		-	2.6	-	
Source-Drain Diode Characteristics						
V_{SD}	Diode Forward Voltage	I_{SD} = 1A, V_{GS} = 0V	-	-	1.2	V

Notes:

1. Surface Mounted on FR4 Board, t≤5 sec.
2. Pulse width limited by maximum junction temperature.
3. Pulse test: PW ≤300 us duty cycle≤2%.

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

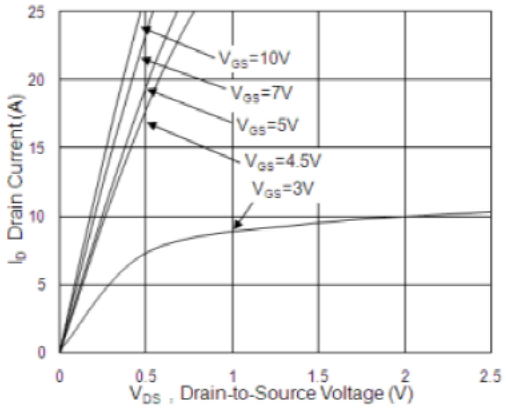


Fig.1 Typical Output Characteristics

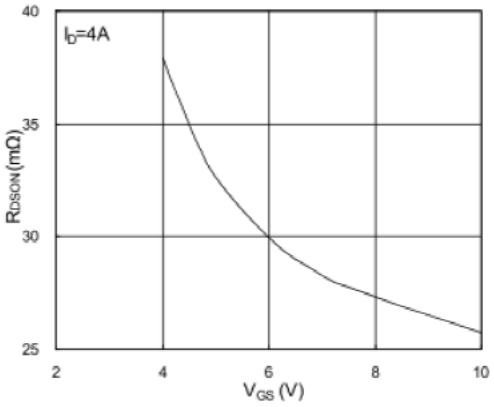


Fig.2 On-Resistance vs. G-S Voltage

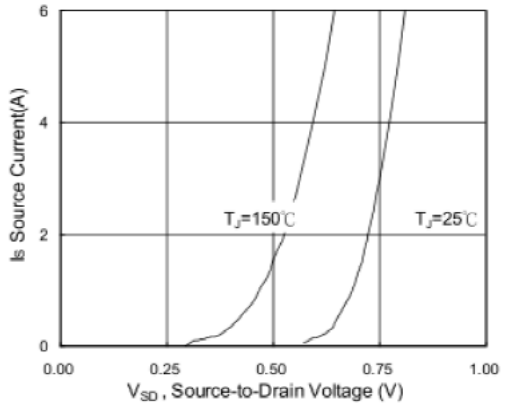


Fig.3 Forward Characteristics of Reverse Diode

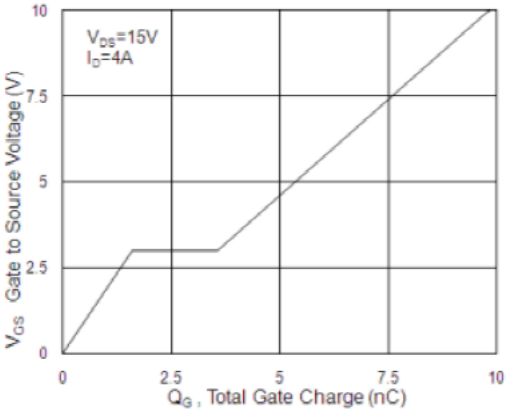


Fig.4 Gate-Charge Characteristics

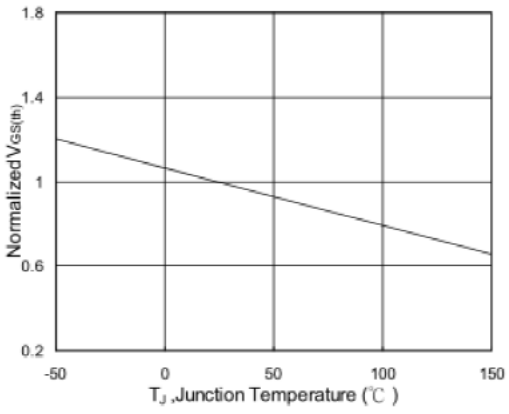


Fig.5 Normalized V GS(th) vs. T J

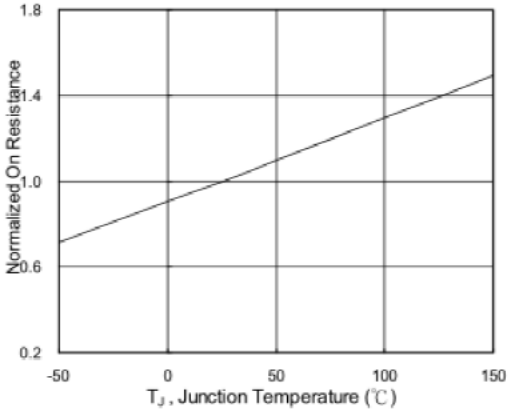


Fig.6 Normalized R DSON vs. T J

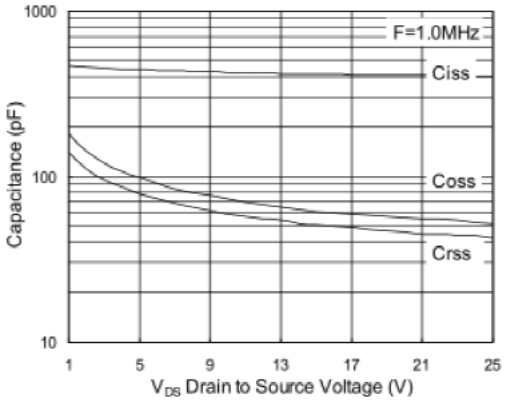


Fig.7 Capacitance

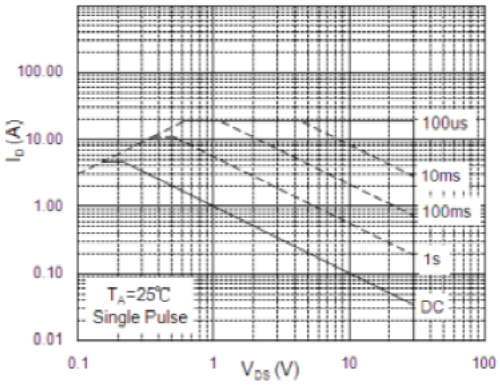
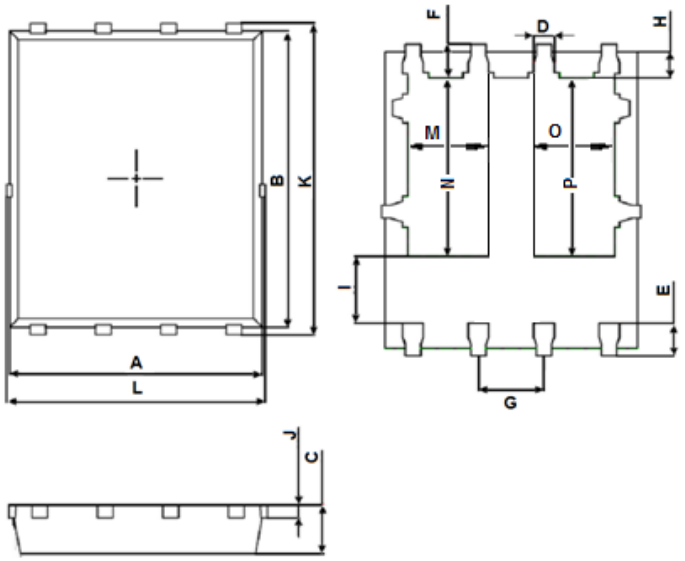


Fig.8 Safe Operating Area

Package Outline Dimensions (Unit: mm)



PDFN5×6-8LC		
Dimension	**Min.**	**Max.**
A	4.824	4.976
B	5.674	5.826
C	0.900	1.000
D	0.350	0.450
E	0.559	0.711
F	0.574	0.726
G	1.250	1.290
H	0.424	0.576
I	1.190	1.390
J	0.154	0.354
K	5.974	6.126
L	4.944	5.096
M/O	1.595	1.795
N/P	3.375	3.575

Important Notice