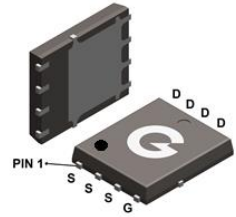
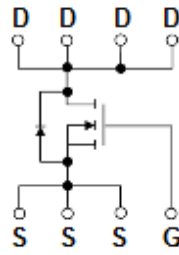


### Features

- Super low gate charge
- Green device available
- Excellent CdV/dt effect decline
- Advanced high cell density Trench technology

HF



PDFN5x6-8L

### Mechanical Data

- Case: PDFN5x6-8L
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matted-Tin plated; Solderable Per MIL-STD-202, Method 208

### Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL035N04-5DL8	PDFN5x6-8L	5000 pcs / Tape & Reel	035N04

### Maximum Ratings (@ T<sub>A</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>	40	V
Gate-to-Source Voltage	V <sub>GSS</sub>	±20	V
Continuous Drain Current (T <sub>C</sub> = 25°C) <sup>*1</sup>	I <sub>D</sub>	100	A
Continuous Drain Current (T <sub>C</sub> = 100°C) <sup>*1</sup>		68	A
Pulsed Drain Current <sup>*2</sup>	I <sub>DM</sub>	400	A
Single Pulse Avalanche Energy <sup>*3</sup>	E <sub>AS</sub>	230	mJ

### Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (T <sub>C</sub> = 25°C)	P <sub>D</sub>	61	W
Thermal Resistance Junction-to-Case <sup>*1</sup>	R <sub>θJC</sub>	2	°C/W
Operating Junction Temperature Range & Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 ~ +150	°C

### Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
$V_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250\mu A$	40	-	-	V
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS} = 40V, V_{GS} = 0V, T_C = 25^\circ\text{C}$	-	-	1	$\mu A$
		$V_{DS} = 40V, V_{GS} = 0V, T_C = 100^\circ\text{C}$	-	-	5	$\mu A$
$I_{GSS}$	Gate-Body Leakage Current	$V_{GS} = \pm 20V, V_{DS} = 0V$	-	-	$\pm 100$	nA
<b>On Characteristics</b>						
$R_{DS(ON)}$	Static Drain-Source On-resistance *2	$V_{GS} = 10V, I_D = 30A$	-	-	3.5	m $\Omega$
		$V_{GS} = 4.5V, I_D = 20A$	-	-	5.4	m $\Omega$
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	-	2.5	V
<b>Dynamic Characteristics</b>						
$C_{ISS}$	Input Capacitance	$V_{GS} = 0V$	-	5595	-	pF
$C_{OSS}$	Output Capacitance	$V_{DS} = 25V$	-	411	-	
$C_{RSS}$	Reverse Transfer Capacitance	$f = 1.0\text{MHz}$	-	340	-	
<b>Switching Characteristics</b>						
$t_{d(ON)}$	Turn-on Delay Time	$V_{DD} = 30V$	-	12	-	ns
$t_r$	Turn-on Rise Time	$V_{GS} = 10V$	-	16	-	
$t_{d(OFF)}$	Turn-Off Delay Time	$R_G = 3\Omega$	-	39	-	
$t_f$	Turn-Off Fall Time	$R_L = 2.5\Omega$	-	15	-	
$Q_G$	Total Gate-Charge	$V_{DD} = 30V$	-	65	-	nC
$Q_{GS}$	Gate to Source Charge	$I_D = 15A$	-	12.5	-	
$Q_{GD}$	Gate to Drain (Miller) Charge	$V_{GS} = 10V$	-	15	-	
<b>Source-Drain Diode Characteristics</b>						
$V_{SD}$	Diode Forward Voltage *2	$I_{SD} = 1A, V_{GS} = 0V, T_J = 25^\circ\text{C}$	-	-	1.2	V
$I_S$	Diode Continuous Forward Current *1, 4		-	-	100	A
$t_{rr}$	Body Diode Reverse Recovery Time	$I_F = 15A, dI/dt = 100A/\mu s$	-	22	-	ns
$Q_{rr}$	Body Diode Reverse Recovery Charge	$T_J = 25^\circ\text{C}$	-	11	-	nC

Notes:

- The data tested by surface mounted on a 1 inch<sup>2</sup> 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  $V_{DD} = 25V, V_{GS} = 10V, L = 0.1\text{mH}$
- The data is theoretically the same as  $I_D$  and  $I_{DM}$  , in real applications , should be limited by total power dissipation

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

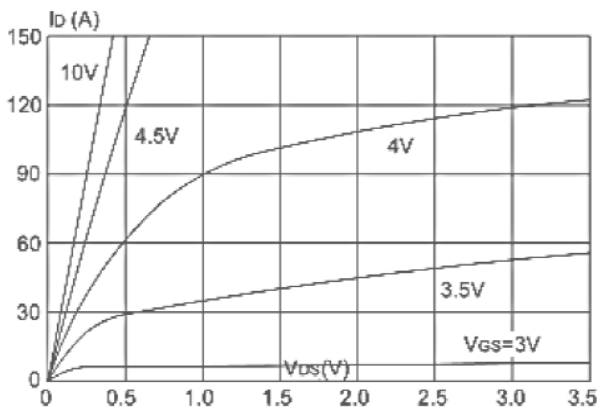


Fig 1 Typical Output Characteristics

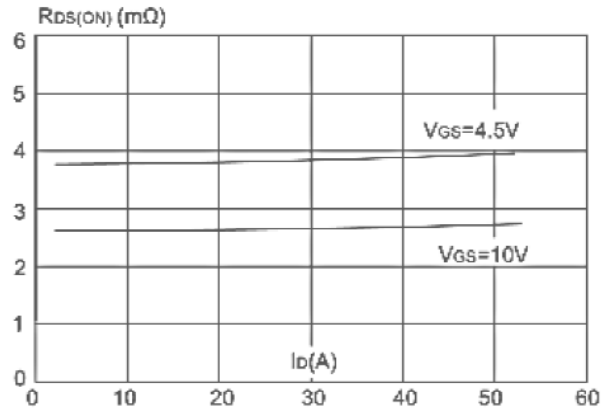


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

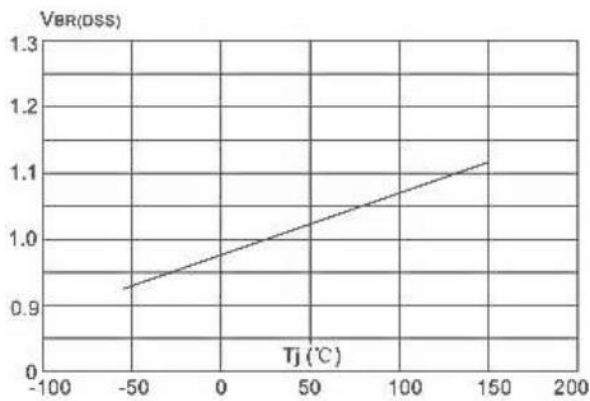


Fig 3 Breakdown Voltage vs. Junction Temperature

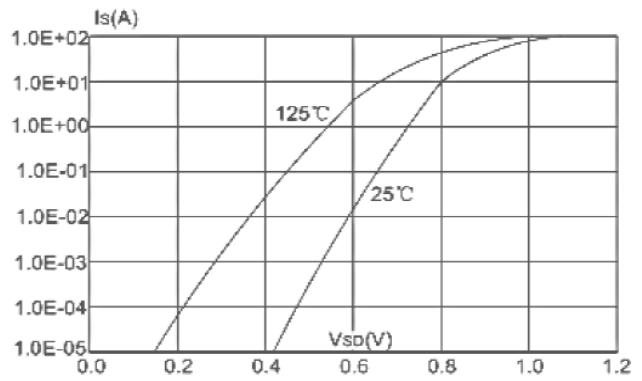


Fig 4 Body-Diode Characteristics

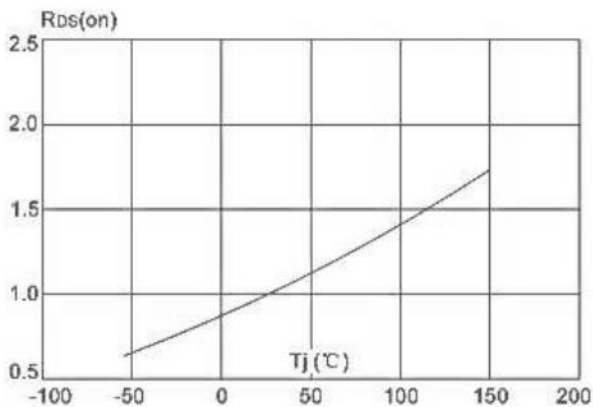


Fig 5 On-Resistance vs. Junction Temperature

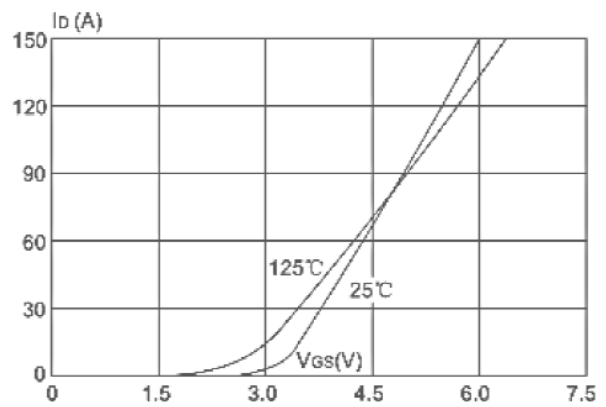


Fig 6 Transfer Characteristics

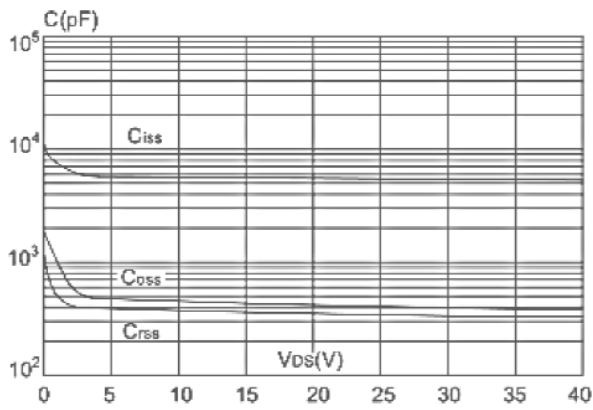


Fig 7 Capacitance Characteristics

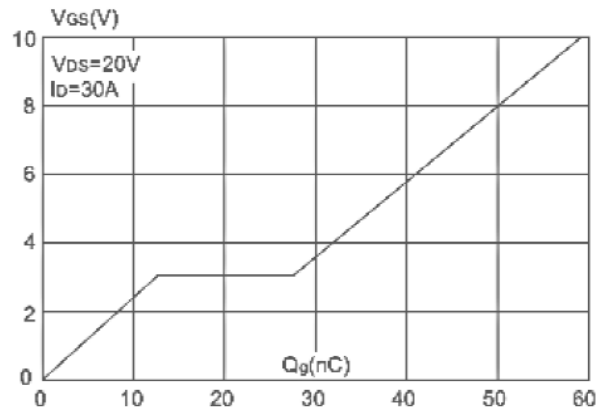


Fig 8 Gate-Charge Characteristics

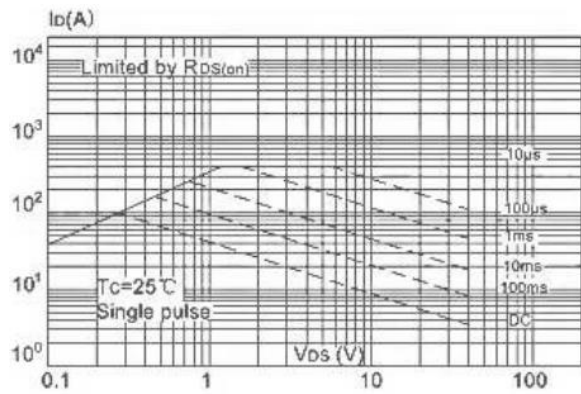


Figure 9 Maximum Safe Operating Area

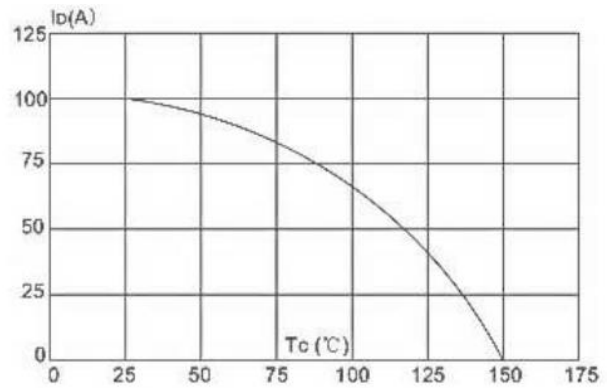


Figure 10 Maximum Continuous Drain Current vs. Case Temperature

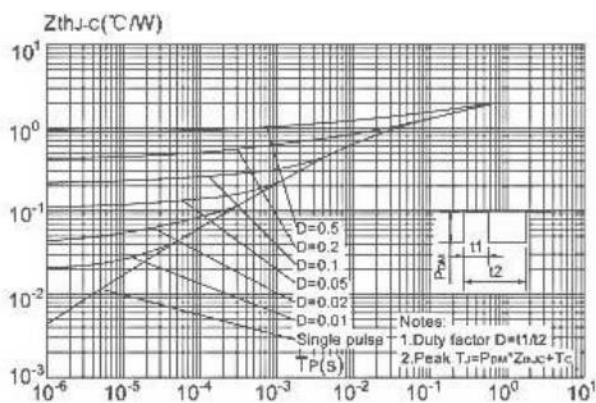
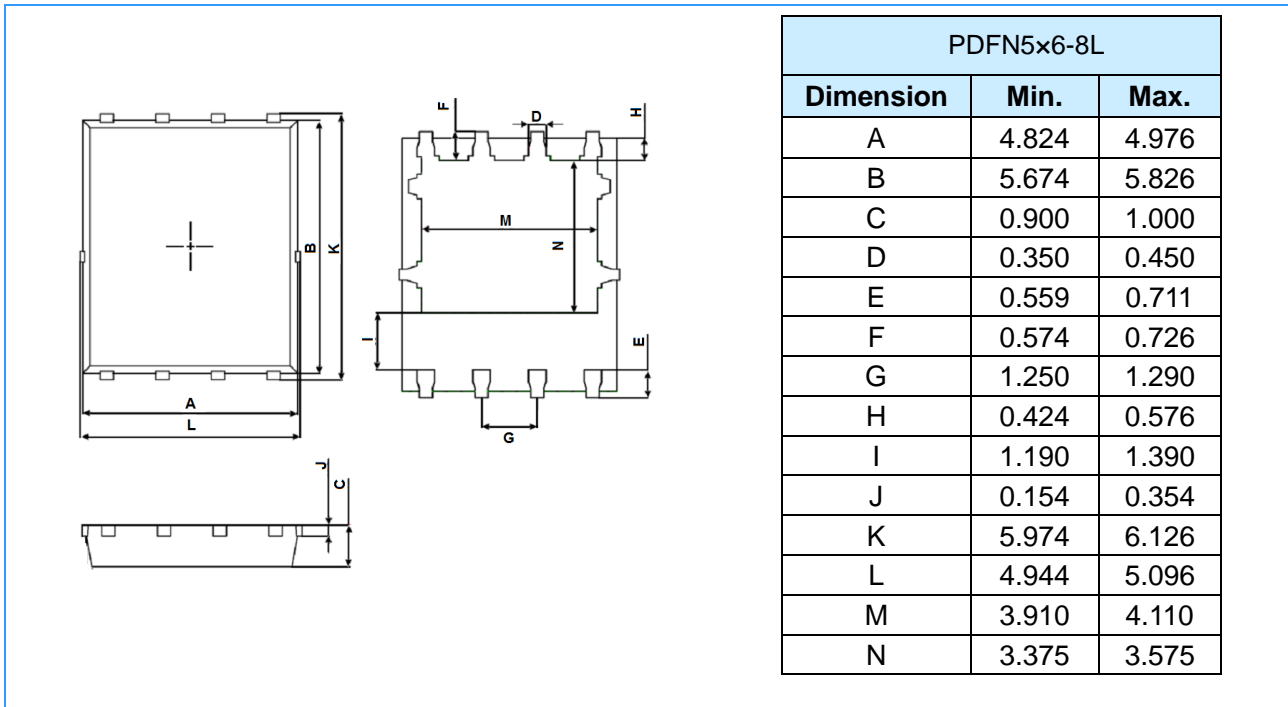
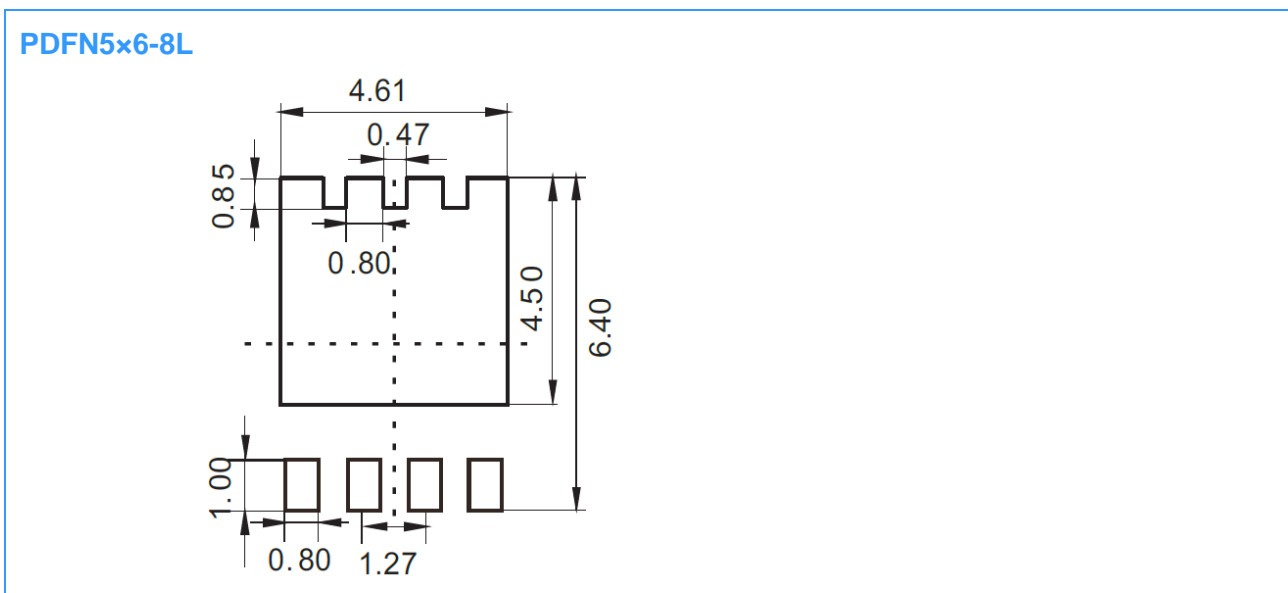


Figure 11 Max. transient thermal impedance

Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)



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