

V _{DS} (V)	R _{DS} (ON)	I _D (A)
100	4.6mΩ(Typ)@V _{GS} =10V	100

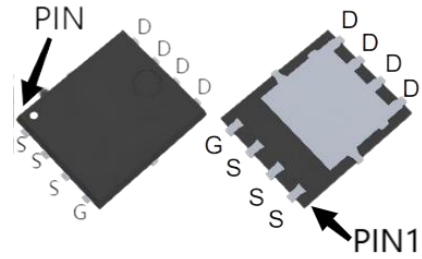
FEATURE:

- The GNJ04N10N5 uses super trench technology and design to provide excellent R_{DS}(ON) with low gate charge. It can be used in a wide variety of applications. The package form is PDFN5060-8L, which accords with the ROHS standard and Halogen Free standard.

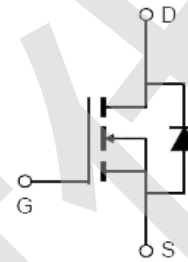
Applications:

- DC-DC converter
- Power management functions
- Synchronous-rectification applications

Pin Description



PDFN5X6-8L



Ordering and Marking Information

Product ID	Marking	Package	Packaging	Quantity
GNJ04N10N5		PDFN5X6-8L	Tape&Reel	5000

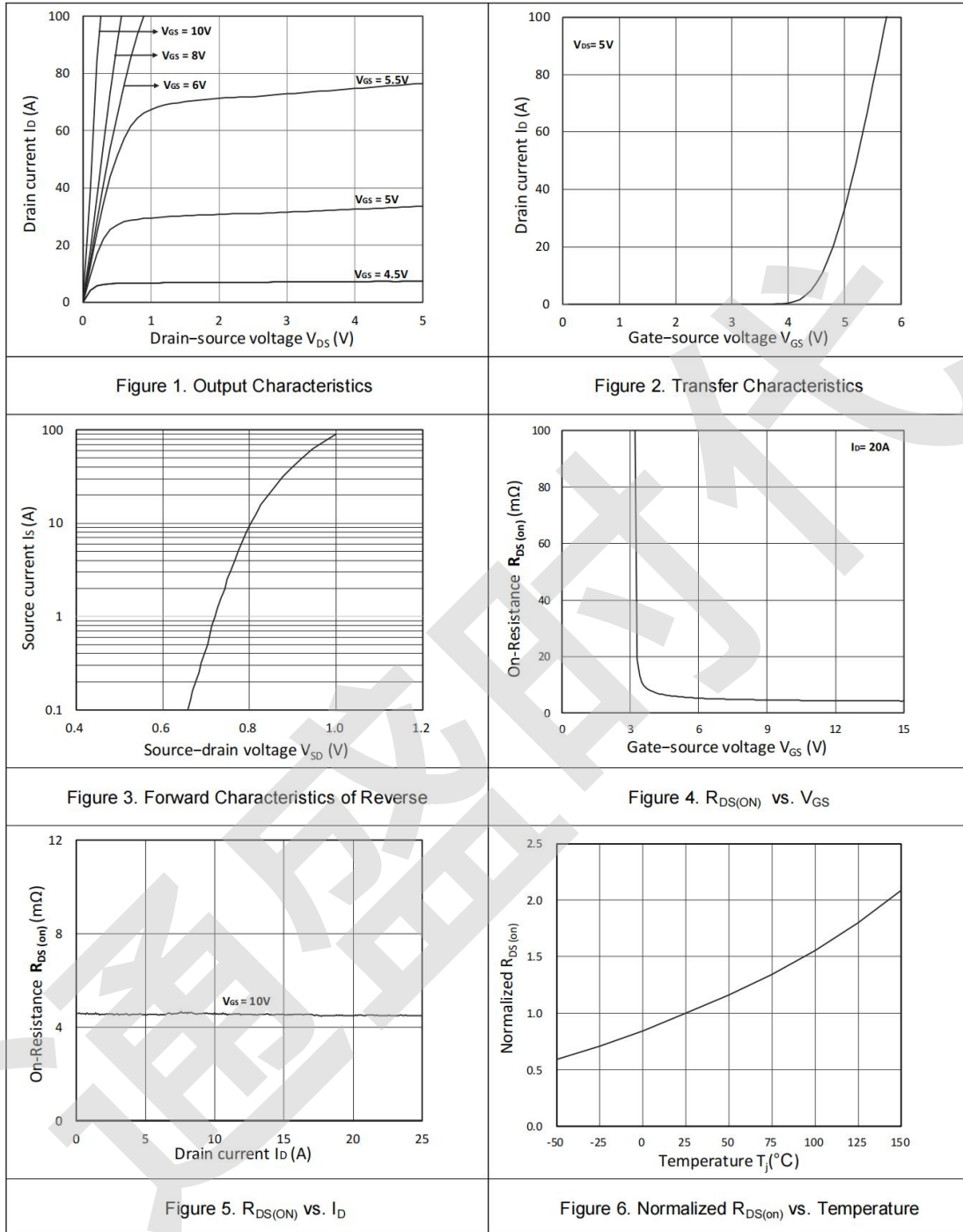
Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	100	V
V _{GS}	Gate-Source Voltage	±20	V
I _D	Continuous Drain Current(V _{GS} = -4.5V)	TC=25°C	100
		TC=70°C	60
T _J	Maximum Junction Temperature	150	°C
T _{STG}	Storage Temperature Range	-55 to 150	°C
I _{DM}	Pulsed Drain Current	380	A
P _D	Maximum Power Dissipation	TC=25°C	113.6
		TC=70°C	---
E _{AS}	Avalanche Energy, Single Pulsed	245	mJ
R _{θJC}	Thermal Resistance-Junction to Case	1.1	°C/W
R _{θJA}	Thermal Resistance-Junction to Ambient	60	°C/W

Electrical Characteristics ($T_A=25^\circ\text{C}$ Unless Otherwise Noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BVDSS	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	100	---	---	V
$V_{GS(th)}$	Gate threshold voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1.2	1.6	2.5	V
$R_{DS(on)}$	Drain-Source On-state Resistance	$V_{GS}=10V, I_D=20A$	---	4.6	6	$m\Omega$
IGSS	Gate-source leakage current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 100	nA
IDSS	Zero gate voltage drain current	$V_{DS}=100V, V_{GS}=0V, T_J=25^\circ\text{C}$	---	---	1	μA
		$T_J=100^\circ\text{C}$	---	---	100	
Dynamic Characteristic						
Ciss	Input Capacitance	$V_{GS}=0V, V_{DS}=50V,$ $\text{Frequency}=1\text{MHz}$	---	5518	---	μF
Coss	Output Capacitance		---	655	---	
Crss	Reverse Transfer Capacitance		---	23	---	
QG	Gate Total Charge	$V_{DS}=50V, V_{GS}=10V,$ $I_{DS}=20A$	---	81.8	---	nC
Qgs	Gate-Source charge		---	23.5	---	
Qgd	Gate-Drain charge		---	22.5	---	
td(on)	Turn-on delay time	$V_{DD}=50V, V_{GS}=10V,$ $R_G=3\Omega, I_D=20A$	---	15.4	---	ns
tr	Turn-on Rise Time		---	13	---	
td(off)	Turn-off Delay Time		---	34	---	
tf	Turn-off Fall Time		---	6.2	---	
RG	Gate Resistance	$V_{GS}=0V, V_{DS}=0V, F=1\text{MHz}$	---	1.4	---	Ω
Diode Characteristics						
VSD	Diode Forward Voltage	$V_{GS}=0V, I_S=1A, T_J=25^\circ\text{C}$	---	---	1.2	V
I_S	Maximum Continuous Drain to Source Diode Forward Current		---	---	100	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		---	---	---	A
trr	Reverse Recovery Time	$I_{SD}=12A,$	---	55	---	ns
Qrr	Reverse Recovery Charge	$dI_{SD}/dt=-100A/\mu s$	---	101	---	nC

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS



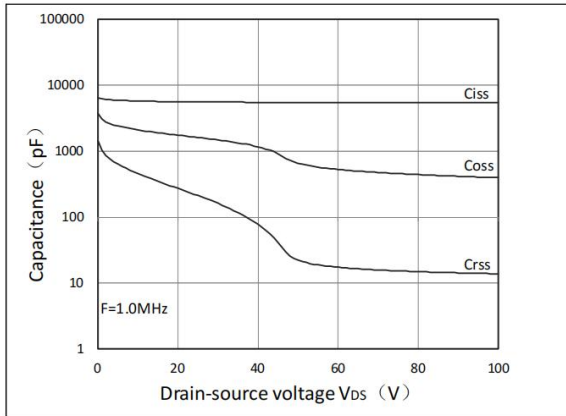


Figure 7. Capacitance Characteristics

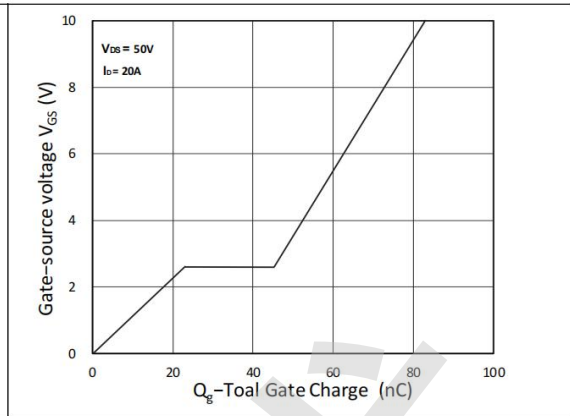


Figure 8. Gate Charge Characteristics

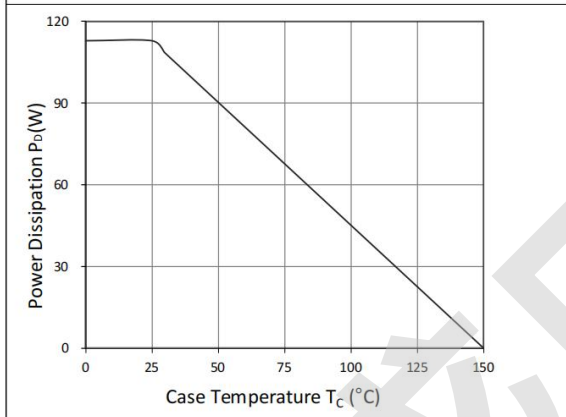


Figure 9. Power Dissipation

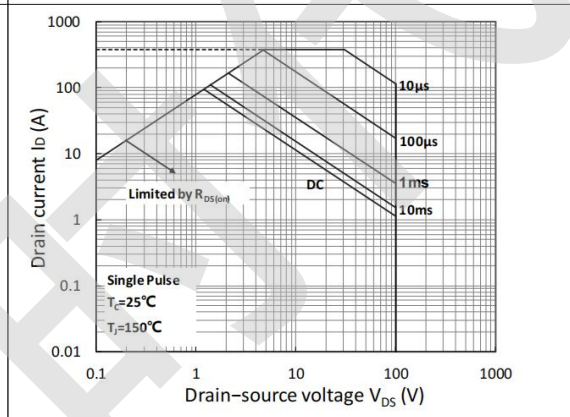


Figure 10. Safe Operating Area

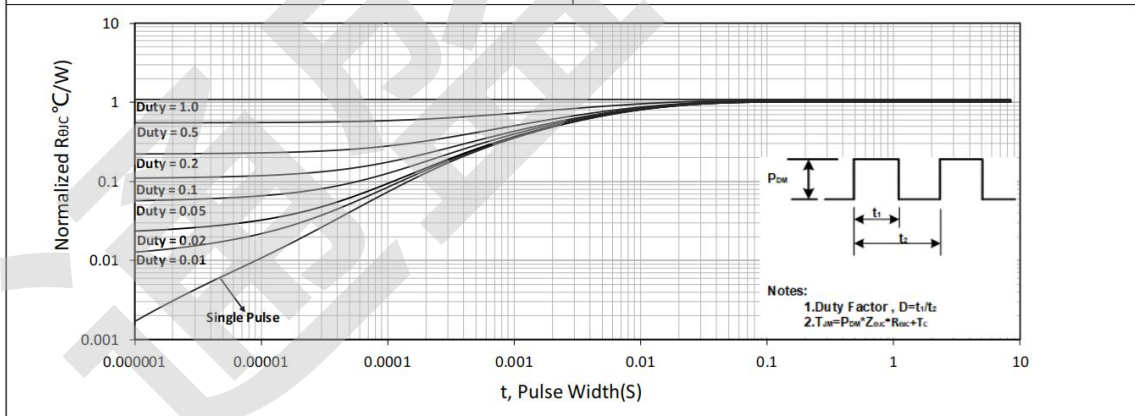
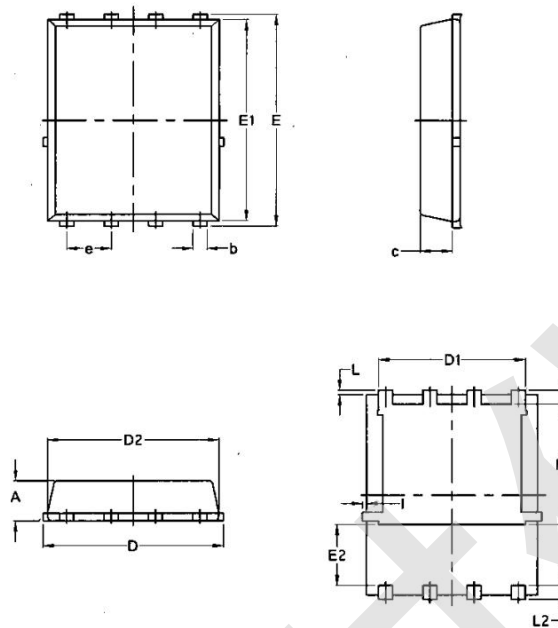


Figure 11. Normalized Maximum Transient Thermal Impedance

Package Mechanical Data-PDFN5*6-8L-JQ



Symbol	Common		
	mm		
	Mim	Nom	Max
A	0.90	1.00	1.10
b	0.33	0.41	0.51
C	0.20	0.25	0.30
D1	4.80	4.90	5.00
D2	3.61	3.81	3.96
E	5.90	6.00	6.10
E1	5.66	5.76	5.83
E2	3.37	3.47	3.58
e	1.27BSC		
H	0.41	0.51	0.61
K	1.10	--	--
L	0.51	0.61	0.71
L1	0.06	0.13	0.20
M	0.50	--	--
a	0°	--	12°

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GNJ04N10N5

Single N-Channel Power MOSFET

Edition	Date	Change
Rve1.0	2022/11	Initial release

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