

V _{DSS} (V)	R _{DS (ON)}	I _{D(A)}
30	7mΩ(Typ)@V _{GS} =10V	60
	10mΩ(Typ)@V _{GS} =4.5V	

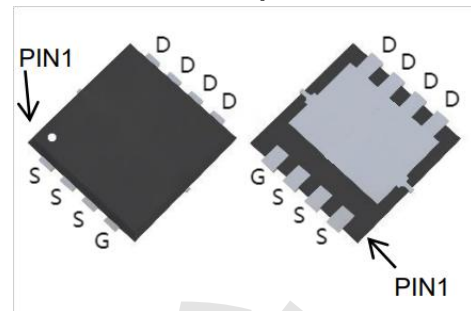
FEATURE:

- The GN07N03N3 is the high cell density trenched N-ch MOSFETS, which provides excellent R_{DS ON} and efficiency for most of the small power switching and load switch applications.

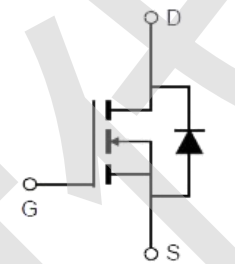
APPLICATIONS:

- Load Switch

Pin Description



PDFN3*3-8L



Ordering and Marking Information

Product ID	Marking	Package	Packaging	Quantity
GN07N03N3		PDFN3*3-8L	Tape&Reel	5000

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V _{DSS}	Drain-Source Voltage	30	V
V _{GSS}	Gate-Source Voltage	±20	V
I _D	Continuous Drain Current(V _{GS} = -4.5V)	T _A =25°C	60
		T _A =70°C	30
T _J	Maximum Junction Temperature	150	°C
T _{STG}	Storage Temperature Range	-55 to 150	°C
I _{DM}	Pulsed Drain Current	120	A
P _D	Maximum Power Dissipation	T _A =25°C	18
		T _A =70°C	---
E _{AS}	Avalanche Energy, Single Pulsed	39	mJ
R _{θJC}	Thermal Resistance-Junction to Case	4.32	°C/W
R _{θJA}	Thermal Resistance-Junction to Ambient	75	°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	$V_{GS}=0V, I_D=250\mu A$	30	---	---	V
$V_{GS(th)}$	Gate threshold voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.5	2.5	V
RDS(on)	Drain-Source On-state Resistance	$V_{GS}=10V, I_D=10A$	---	7	8.5	m Ω
		$V_{GS}=4.5V, I_D=5A$	---	10	14	m Ω
IGSS	Gate-source leakage current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 100	μA
IDSS	Zero gate voltage drain current	$V_{DS}=30V, V_{GS}=0V, T_J=25^\circ\text{C}$	---	---	1	μA
		$T_J=55^\circ\text{C}$	---	---	---	
Dynamic Characteristic						
Ciss	Input Capacitance	$V_{GS}=0V, V_{DS}=15V,$ Frequency=1.0MHz	---	1200	---	pF
Coss	Output Capacitance		---	163	---	
Crss	Reverse Transfer Capacitance		---	131	---	
QG	Gate Total Charge	$V_{DS}=20V, V_{GS}=4.5V,$ $I_{DS}=12A$	---	12.8	---	nC
Qgs	Gate-Source charge		---	3.3	---	
Qgd	Gate-Drain charge		---	6.5	---	
td(on)	Turn-on delay time	$V_{DD}=12V, V_{GS}=10V,$ $R_G=3\Omega, I_D=5A$	---	4.5	---	ns
tr	Turn-on Rise Time		---	10.8	---	
td(off)	Turn-off Delay Time		---	25.5	---	
tf	Turn-off Fall Time		---	9.6	---	
RG	Gate Resistance	$V_{GS}=0V, V_{DS}=0V, F=1\text{MHz}$	---	1.7	---	Ω
Diode Characteristics						
VSD	Diode Forward Voltage	$V_{GS}=0V, I_S=1A, T_J=25^\circ\text{C}$	---	---	1.2	V
trr	Reverse Recovery Time	$I_{SD}=4.1A,$ $dI_{SD}/dt=-100A/\mu s$	---	---	---	ns
Qrr	Reverse Recovery Charge		---	---	---	nC

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

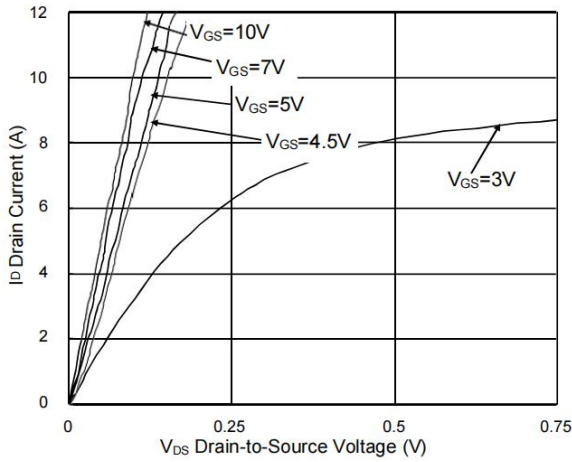


Fig.1 Typical Output Characteristics

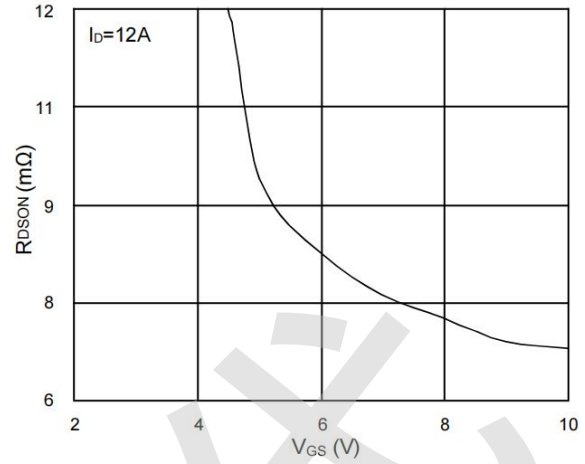


Fig.2 On-Resistance vs. G-S Voltage

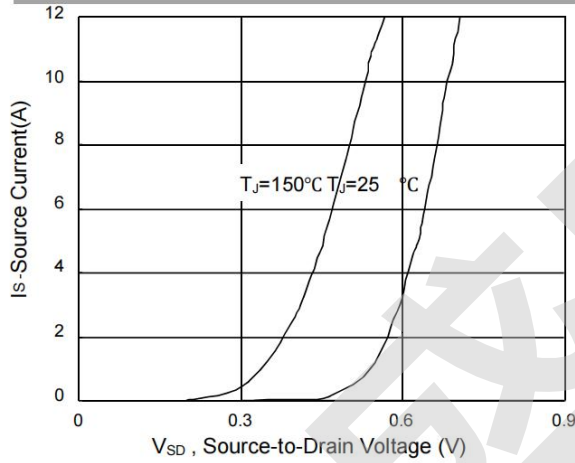


Fig.3 Forward Characteristics of Reverse

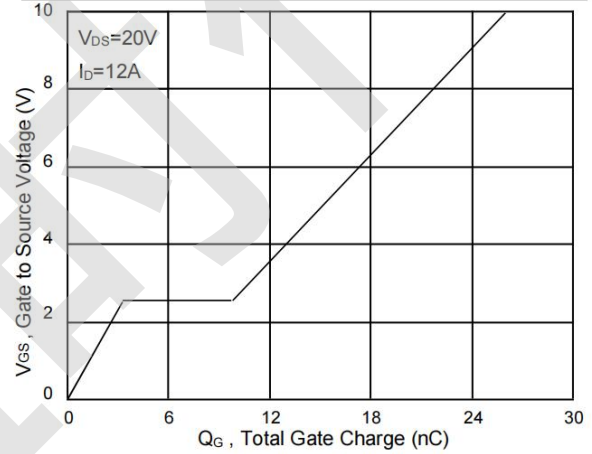


Fig.4 Gate-Charge Characteristics

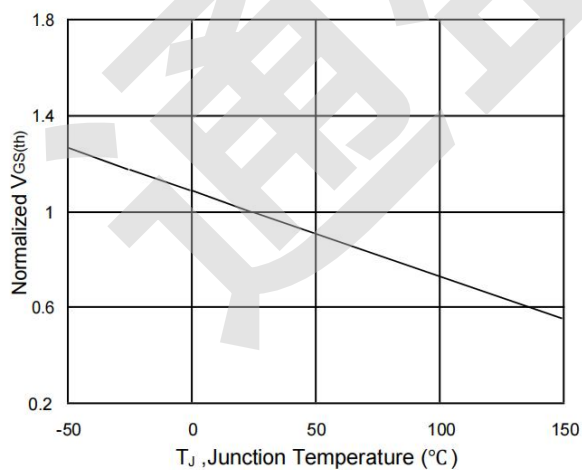


Fig.5 Normalized $V_{GS(th)}$ vs. T_J

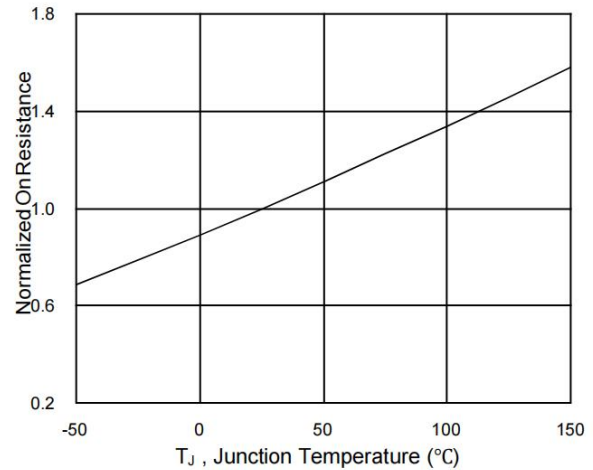


Fig.6 Normalized $R_{DS(on)}$ vs. T_J

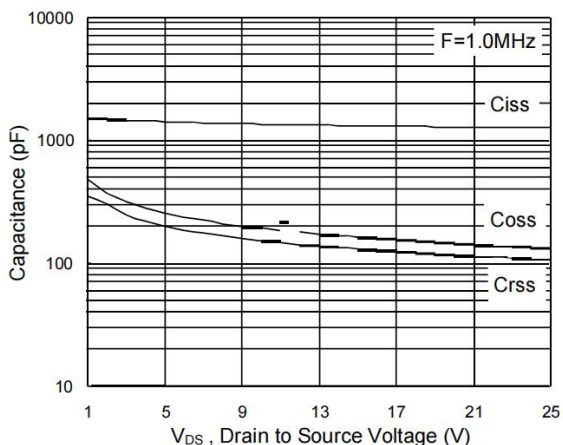


Fig.7 Capacitance

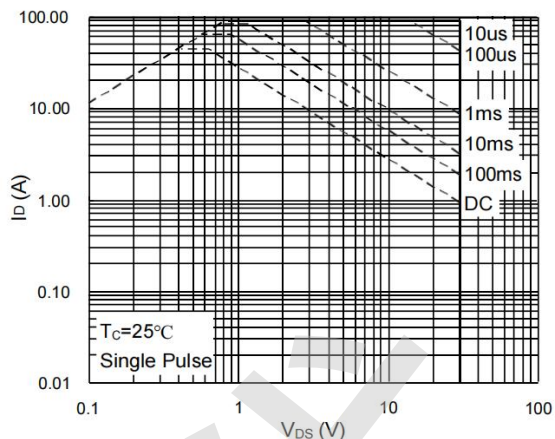


Fig.8 Safe Operating Area

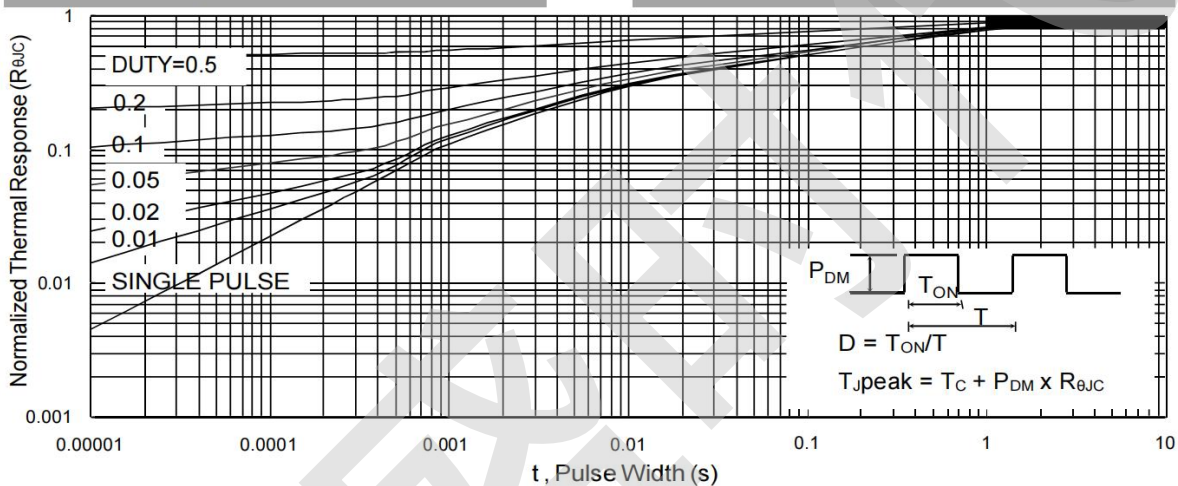


Fig.9 Normalized Maximum Transient Thermal Impedance

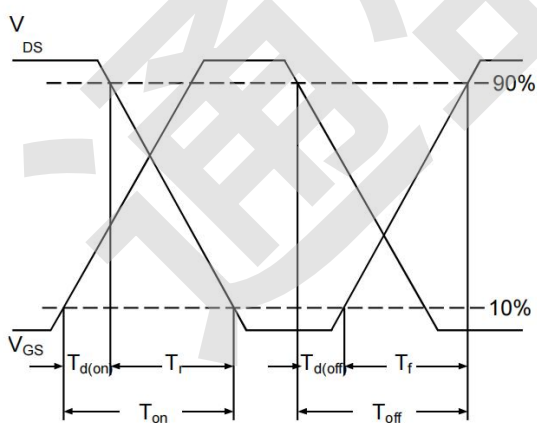


Fig.10 Switching Time Waveform

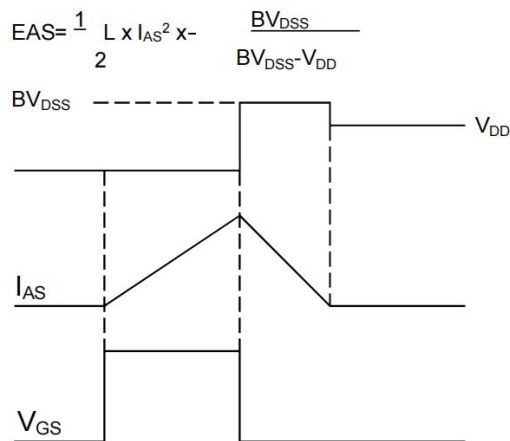
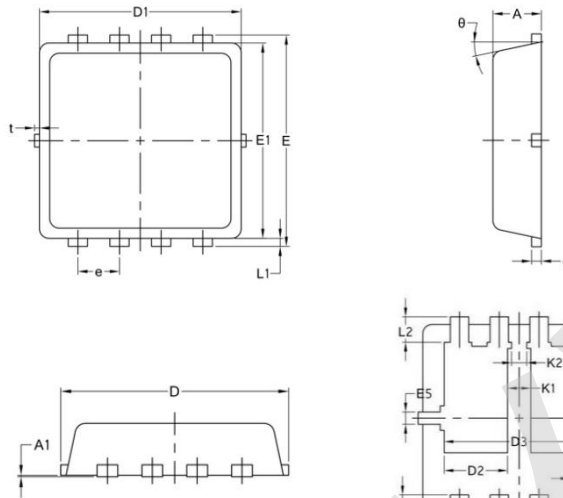


Fig.11 Unclamped Inductive Switching Waveform

Package Mechanical Data-PDFN3*3-8L Double



Symbol	Common		
	Mm		
	Min	Nom	Max
A	0.70	0.75	0.85
A1	/	/	0.05
b	0.25	0.30	0.39
c	0.14	0.152	0.20
D	3.20	3.30	3.45
D1	3.05	3.15	3.25
D2	0.84	1.04	1.24
D3	2.30	2.45	2.60
E	3.20	3.30	3.40
E1	2.95	3.05	3.15
E2	1.60	1.74	1.90
E3	0.28	0.48	0.65
E4	0.37	0.57	0.77
E5	0.10	0.20	0.30
e	0.60	0.65	0.70
K	0.50	0.69	0.80
K1	0.30	0.38	0.53
K2	0.15	0.25	0.35
L	0.30	0.40	0.50
L1	0.06	0.125	0.20
L2	0.27	0.42	0.57
t	0	0.075	0.13
Φ	10°	12°	14°

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GN07N03N3

Single N-Channel Power MOSFET

Edition	Date	Change
Rve1.0	2022/11	Initial release

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