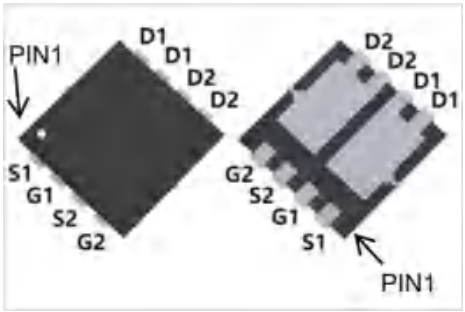
TS14V06N3

Dual N-Channel Power MOSFET

V_{DSS}（V）	$R_{DS(ON)}$	$I_{D(A)}$
60	16mΩ(Typ)@VGS=10V	20
	19mΩ(Typ)@VGS=4.5V	

Pin Description



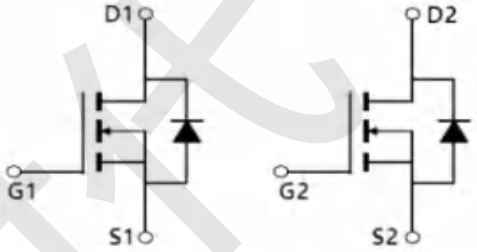
PDFN3X3-8L

FEATURE:

• The GNJ14V06N is the high cell density trenched Dual N-ch MOSFETS, which provides excellent RDSON and efficiency for most of the small power switching and load switch applications.

Applications

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



Ordering and Marking Information

Product ID	Marking	Package	Packaging	Quantity
TS14V06N3		PDFN3X3-8L	Tape&Reel	5000

Absolute Maximum Ratings

Symbol	Parameter		Rating	Units
V_{DSS}	Drain-Source Voltage		60	V
V_{GSS}	Gate-Source Voltage		±20	V
I_D	Continuous Drain Current(V_{GS}= -4.5V)	Tc=25°C	20	A
		Tc=70°C	14	
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-55 to 150	°C
I_{DM}	Pulsed Drain Current		100	A
P_D	Maximum Power Dissipation	Tc=25°C	30	W
		T_A=25°C	---	
E_{AS}	Avalanche Energy, Single Pulsed		33.8	mJ
RθJC	Thermal Resistance-Junction to Case		4.1	°C/W
RθJA	Thermal Resistance-Junction to Ambient		---	°C/W

电话:0755-83387360 手机：13826508770（王先生） 邮箱：3007605919@qq.com 网址：www.sztssd.com 地址:深圳市福田区中航路鼎诚国际南座18楼1814室

Electrical Characteristics (T_A=25°C Unless Otherwise Noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BVDSS	Drain-Source Breakdown Voltage	VGS=0V, ID=250uA	60	---	---	V
VGS(th)	Gate threshold voltage	VDS=VGS,ID=250uA	1.0	1.5	2.5	V
RDS(ON)	Drain-Source On-state Resistance	VGS=10V , ID=4.9A	---	16	21	mΩ
		VGS=4.5V , ID=3.4A	---	19	26	mΩ
IGSS	Gate-source leakage current	VGS=±20V , VDS=0V	---	---	±100	nA
IDSS	Zero gate voltage drain current	VDS=60V,VGS=0V,TJ=25℃	---	---	1	μA
		TJ=55℃	---	---	5	
Dynamic Characteristic						
Ciss	Input Capacitance	VGS=0V, VDS=25V, Frequency=1.0MHz	---	500	---	pF
Coss	Output Capacitance		---	204	---	
Crss	Reverse Transfer Capacitance		---	6.8	---	
QG	Gate Total Charge	VDS=30V, VGS=10V, IDS=20A	---	12.1	---	nC
Qgs	Gate-Source charge		---	1.3	---	
Qgd	Gate-Drain charge		---	2.6	---	
td(on)	Turn-on delay time	VDD=30V , VGS=10V , RG=6Ω, ID=20A	---	3.3	---	ns
tr	Turn-on Rise Time		---	4	---	
td(off)	Turn-off Delay Time		---	14	---	
tf	Turn-off Fall Time		---	5.5	---	
RG	Gate Resistance	VGS=0V,VDS=0V,F=1MHz	---	---	---	Ω
Diode Characteristics						
Is	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	20	A
VSD	Diode Forward Voltage	VGS=0V , IS=1A , TJ=25℃	---	---	1.2	V
trr	Reverse Recovery Time	ISD=6A, dISD/dt=-100A/μs	---	20	---	ns
Qrr	Reverse Recovery Charge		---	8.1	---	nC

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

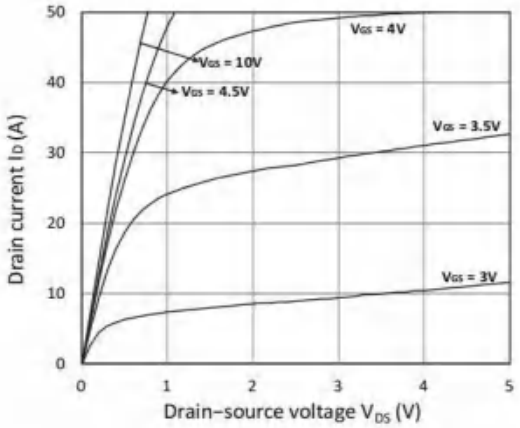


Figure 1. Output Characteristics

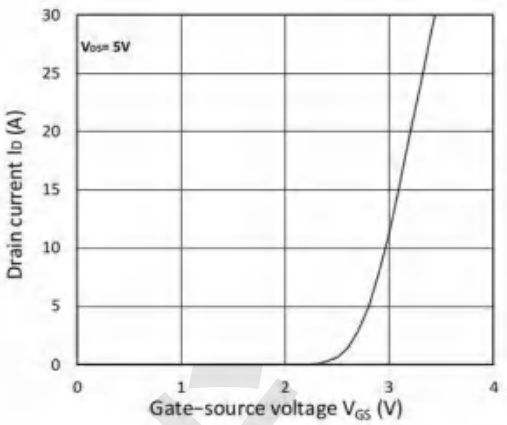


Figure 2. Transfer Characteristics

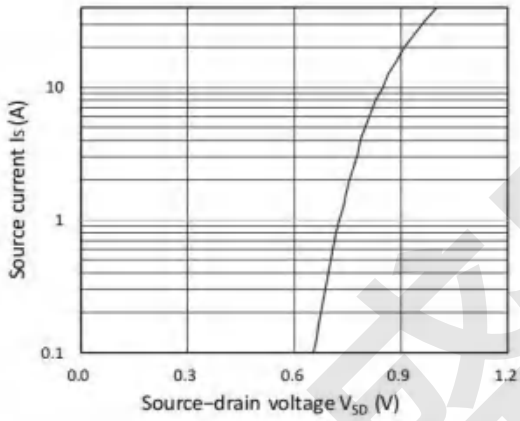


Figure 3. Forward Characteristics of Reverse

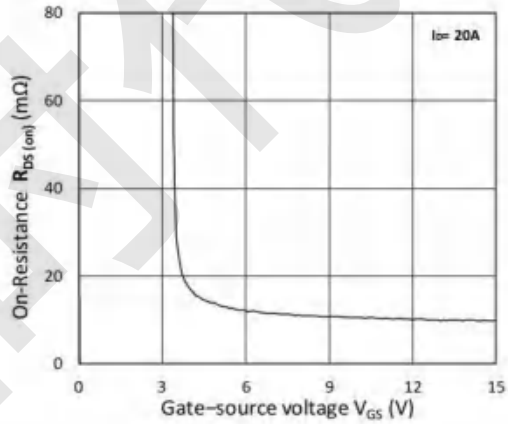


Figure 4. $R_{DS(ON)}$ vs. V_{GS}

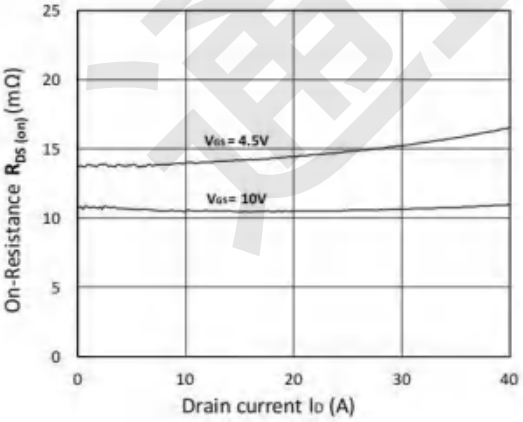


Figure 5. $R_{DS(ON)}$ vs. I_D

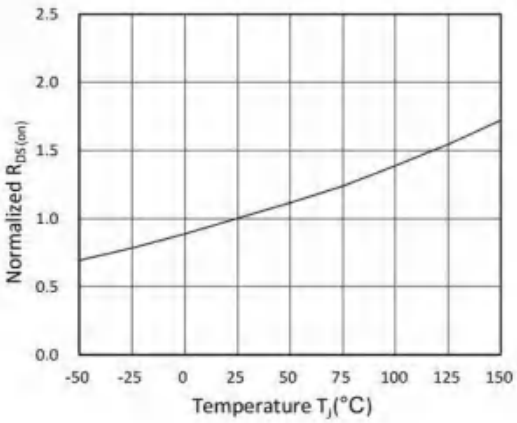


Figure 6. Normalized $R_{DS(on)}$ vs. Temperature

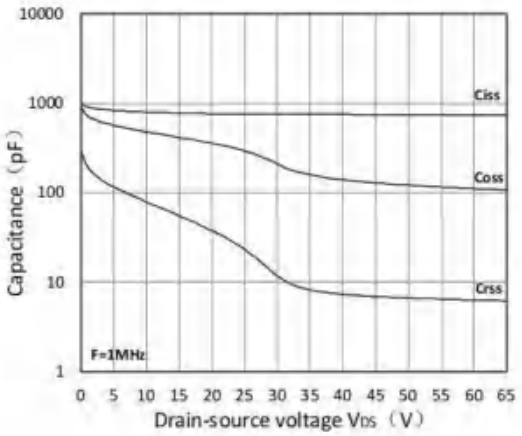


Figure 7. Capacitance Characteristics

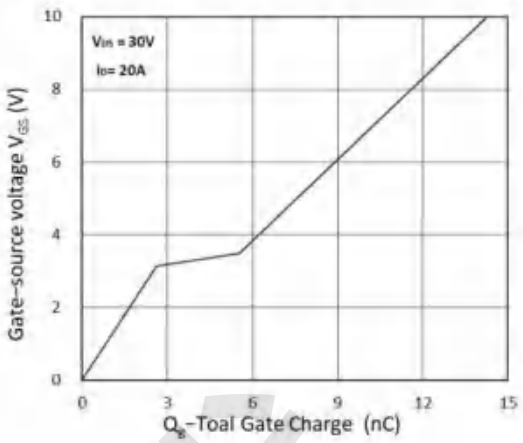


Figure 8. Gate Charge Characteristics

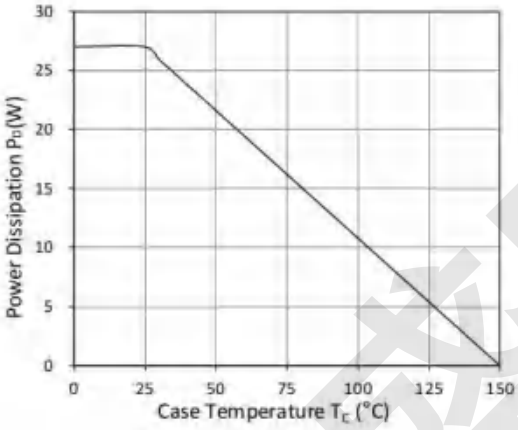


Figure 9. Power Dissipation

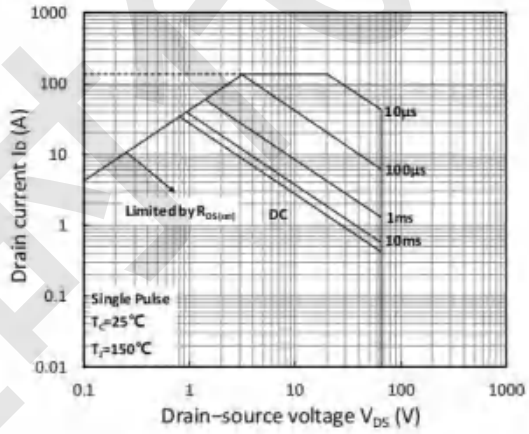


Figure10. Safe Operating Area

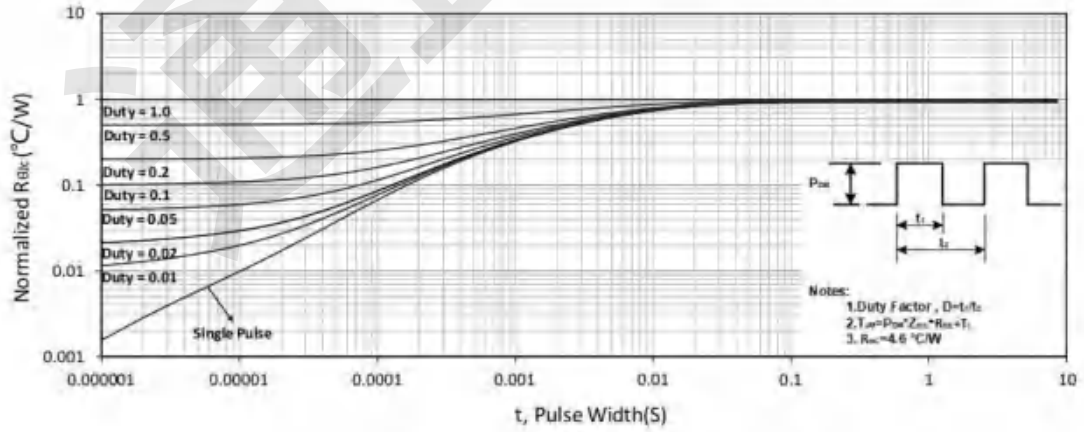
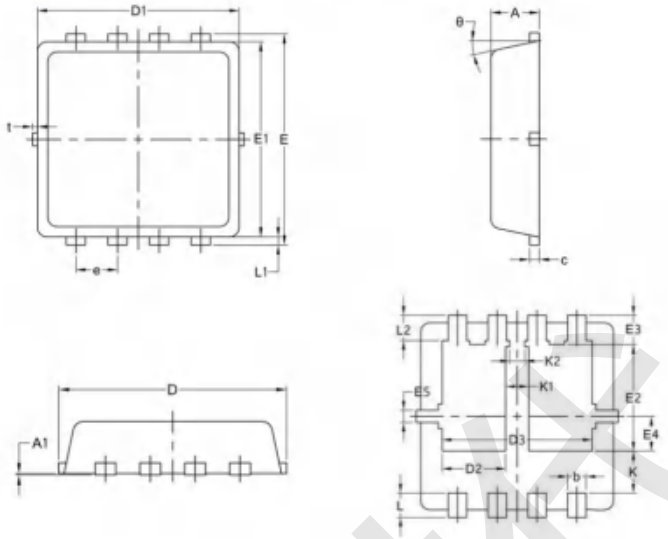


Figure 11. Normalized Maximum Transient Thermal Impedance

电话:0755-83387360 手机：13826508770（王先生） 邮箱: 3007605919@qq.com 网址：www.sztssd.com 地址:深圳市福田区中航路鼎诚国际南座18楼1814室

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°

Edition	Date	Change
Rve1.0	2022/11	Initial release

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