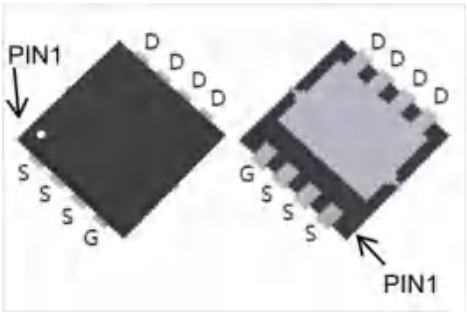
TS08N03N3

Single N-Channel Power MOSFET

V_{DSS}（V）	$R_{DS\ (ON)}$	$I_{D(A)}$
30	9mΩ(Typ)@VGS=10V	30
	11mΩ(Typ)@VGS=4.5V	

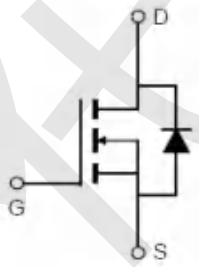
Pin Description



PDFN3*3-8L

FEATURE:

- The TS08N03N3 is the high cell density trenched N-ch MOSFETS, which provides excellent R_{DSON} and efficiency for most of the small power switching and load switch applications.



APPLICATIONS:

- Load Switch

Ordering and Marking Information

Product ID	Marking	Package	Packaging	Quantity
TS08N03N3		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	30	A
		T_A=70°C	15	
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-55 to 150	°C
I_{DM}	Pulsed Drain Current		90	A
P_D	Maximum Power Dissipation	T_A=25°C	10	W
		T_A=70°C	---	
E_{AS}	Avalanche Energy, Single Pulsed		19	mJ
RθJC	Thermal Resistance-Junction to Case		---	°C/W
RθJA	Thermal Resistance-Junction to Ambient		85	°C/W

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	30	---	---	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=10A	---	9	12	mΩ
		VGS=4.5V , ID=5A	---	11	18	mΩ
IGSS	Gate-source leakage current	VGS=±20V , VDS=0V	---	---	±100	μA
IDSS	Zero gate voltage drain current	VDS=30V,VGS=0V,TJ=25℃	---	---	1	μA
		TJ=55℃	---	---	---	
Dynamic Characteristic						
Ciss	Input Capacitance	VGS=0V, VDS=15V, Frequency=1.0MHz	---	816	---	pF
Coss	Output Capacitance		---	107.8	---	
Crss	Reverse Transfer Capacitance		---	82.6	---	
QG	Gate Total Charge	VDS=15V, VGS=4.5V, IDS=7A	---	8.4	---	nC
Qgs	Gate-Source charge		---	3.1	---	
Qgd	Gate-Drain charge		---	2.8	---	
td(on)	Turn-on delay time	VDD=15V , VGS=10V , RG=3Ω, ID=7A	---	2.4	---	ns
tr	Turn-on Rise Time		---	72	---	
td(off)	Turn-off Delay Time		---	36	---	
tf	Turn-off Fall Time		---	14.4	---	
RG	Gate Resistance	VGS=0V,VDS=0V,F=1MHz	---	1.04	---	Ω
Diode Characteristics						
VSD	Diode Forward Voltage	VGS=0V , IS=1A , TJ=25℃	---	---	1.2	V
trr	Reverse Recovery Time	ISD=4.1A, dISD/dt=-100A/μs	---	---	---	ns
Qrr	Reverse Recovery Charge		---	---	---	nC

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

Figure1: Output Characteristics

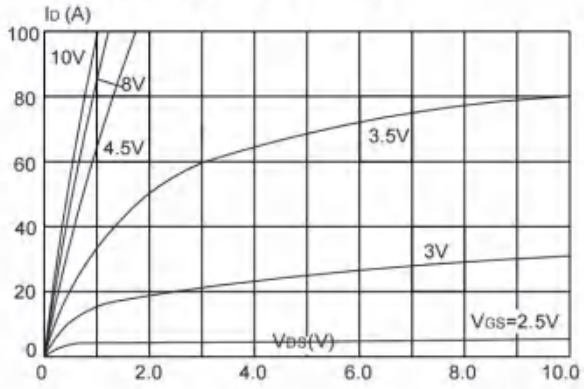


Figure 2: Typical Transfer Characteristics

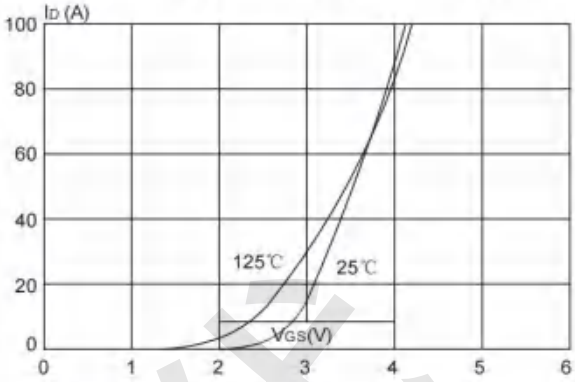


Figure 3: On-resistance vs. Drain Current

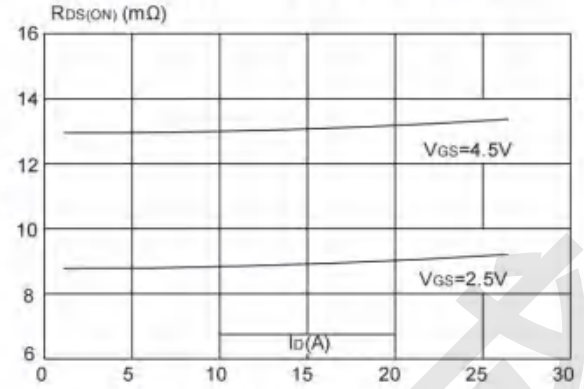


Figure 4: Body Diode Characteristics

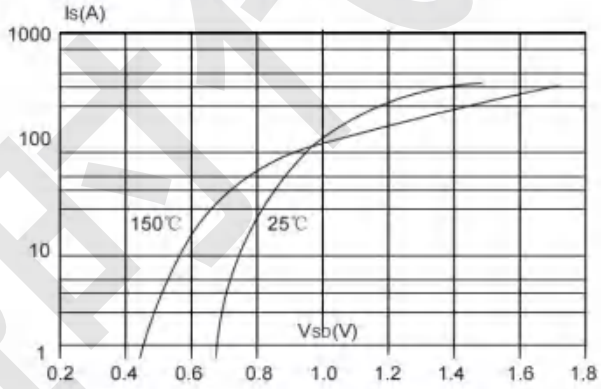


Figure 5: Gate Charge Characteristics

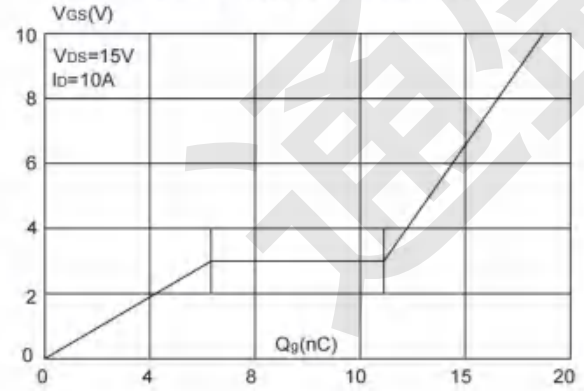


Figure 6: Capacitance Characteristics

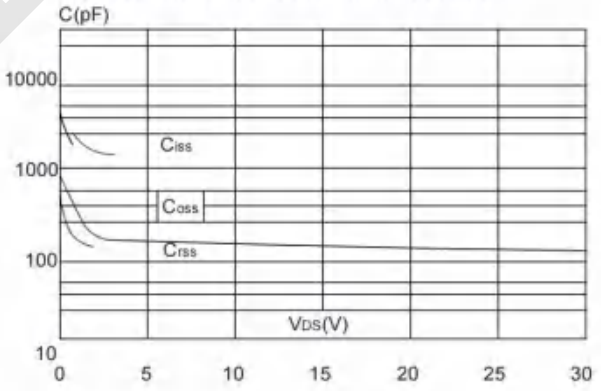


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

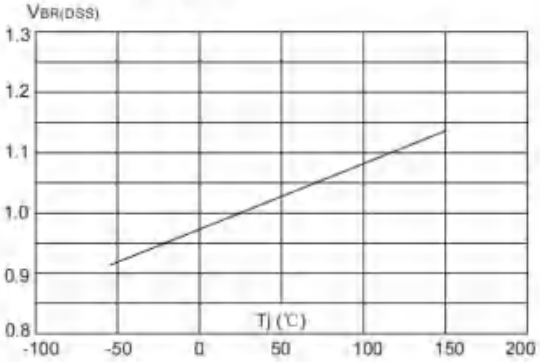


Figure 8: Normalized on Resistance vs. Junction Temperature

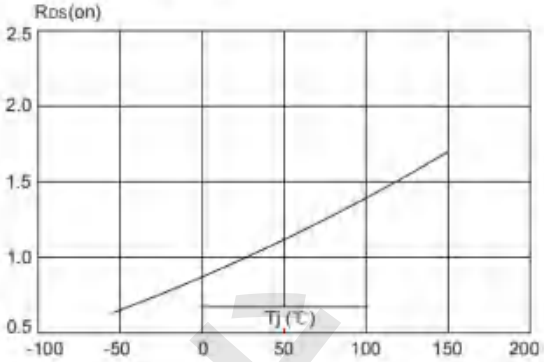


Figure 9: Maximum Safe Operating Area

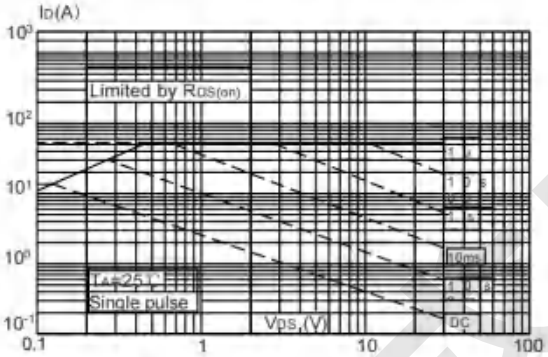


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

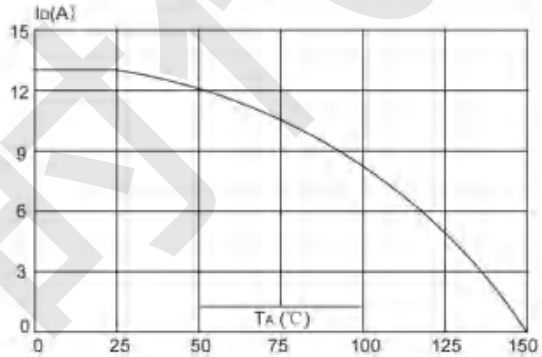
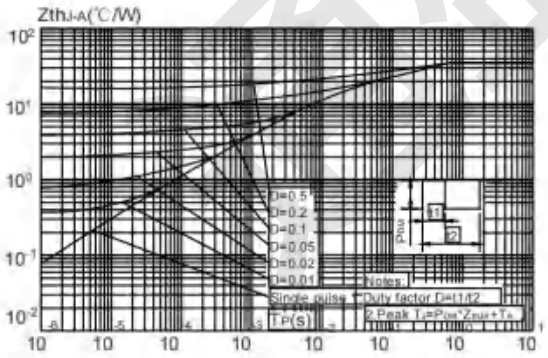
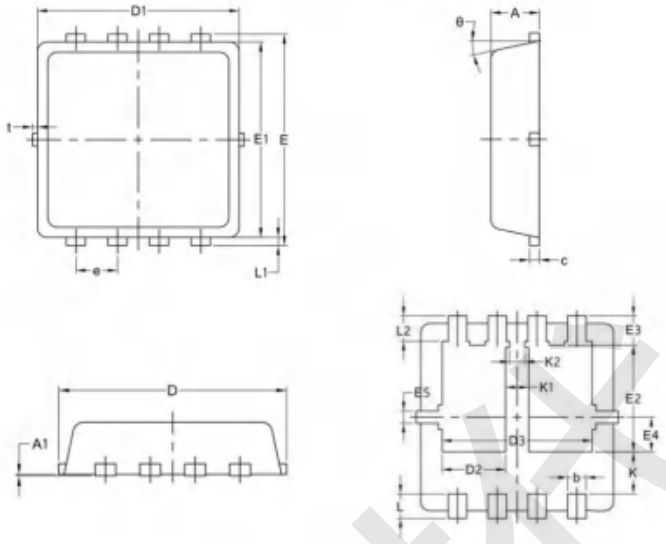


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambient



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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