STANSON

STN8822

Dual N Channel Enhancement Mode MOSFET

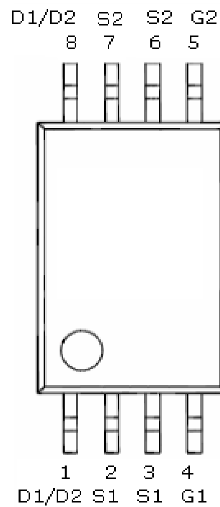
8.0A

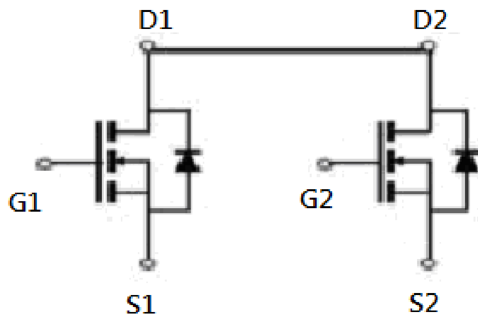
DESCRIPTION

STN8822 is the dual N-Channel enhancement mode power field effect transistor which is produced using high cell density, DMOS trench technology. This high density process is especially tailored to minimize on-state resistance. These devices are particularly suited for low voltage application, such as notebook computer power management and other battery powered circuits, where high-side switching is required.

PIN CONFIGURATION

TSSOP-8





FEATURE

- 20V/8.0A, $R_{DS(ON)}$ = 20m-ohm (Typ.) @V_{GS} =4.5V
- 20V/7.0A, $R_{DS(ON)}$ =24m-ohm @V_{GS} =2.5V
- 20V/3.0A, $R_{DS(ON)}$ =32m-ohm @V_{GS} =1.8V
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional low on-resistance and maximum DC current capability
- TSSOP-8 package design

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ABSOULTE MAXIMUM RATINGS (Ta = 25℃ unless otherwise noted)

Parameter		Symbol	Typical	Unit
Drain-Source Voltage		V_{DSS}	20	V
Gate-Source Voltage		V_{GSS}	+/-12	V
Continuous Drain Current (T_J=150℃)	T_A=25℃	I_D	7.4	A
	T_A=70℃		6.0	
Pulsed Drain Current		I_{DM}	30	A
Continuous Source Current (Diode Conduction)		I_S	1.5	A
Power Dissipation	T_A=25℃	P_D	2.0	W
	T_A=70℃		1.2	
Operation Junction Temperature		T_J	-40/140	℃
Storage Temperature Range		T_{STG}	-55/150	℃
Thermal Resistance-Junction to Ambient		$R_{\theta JA}$	105	℃/W

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ELECTRICAL CHARACTERISTICS (Ta = 25℃ unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250uA	20			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=VGS,I_D=250uA	0.4		1.0	V
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=+/-20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V,V_{GS}=0V			1	uA
		V_{DS}=20V,V_{GS}=0V T_J=85℃			5	
On-State Drain Current	$I_{D(on)}$	V_{DS}≦5V,V_{GS}=4.5V	6			A
Drain-source On-Resistance	$R_{DS(on)}$	V_{GS}=4.5V,I_D=8.0A		0.020	0.024	Ω
		V_{GS}=2.5V,I_D=7.0A		0.024	0.032	
		V_{GS}=1.8V,I_D=3.0A		0.032	0.042	
Forward Transconductance	g_{fs}	V_{DS}=5V,I_D=3.6A		30		S
Diode Forward Voltage	V_{SD}	I_S=1.7A,V_{GS}=0V		0.8	1.2	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=10V,V_{GS}=4.5V,I_D=6.0A		2		nC
Gate-Source Charge	Q_{gs}			2.5		
Gate-Drain Charge	Q_{gd}			2.1		
Input Capacitance	C_{iss}	V_{DS}=8V,V_{GS}=0V f=1MHz		575		pF
Output Capacitance	C_{oss}			120		
Reverse Transfer Capacitance	C_{rss}			100		
Turn-On Time	$T_{d(on)}$	V_{DD}=10V, RL=10Ω, I_D=1.0A, V_{GEN}=4.5V, RG=10Ω		14		nS
	t_r			40		
Turn-Off Time	$T_{d(off)}$			45		
	t_f			30		

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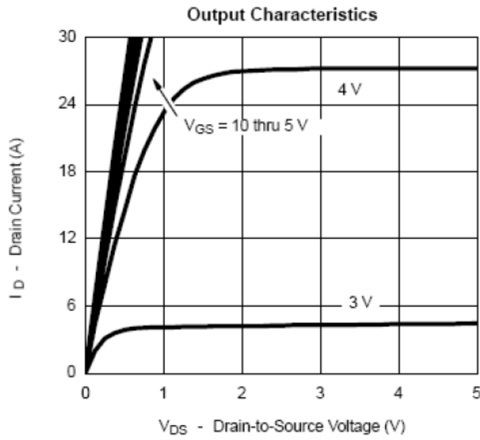
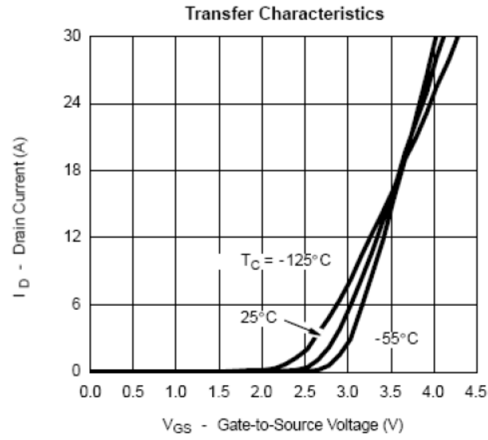
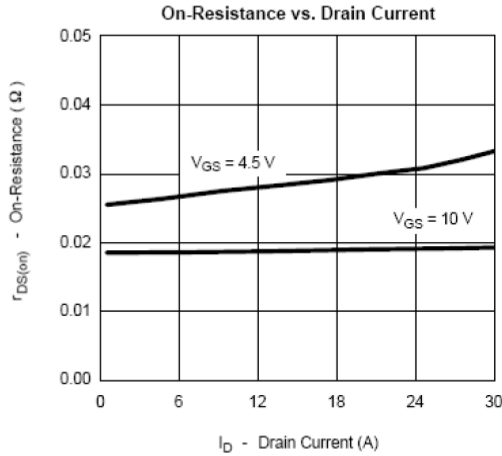
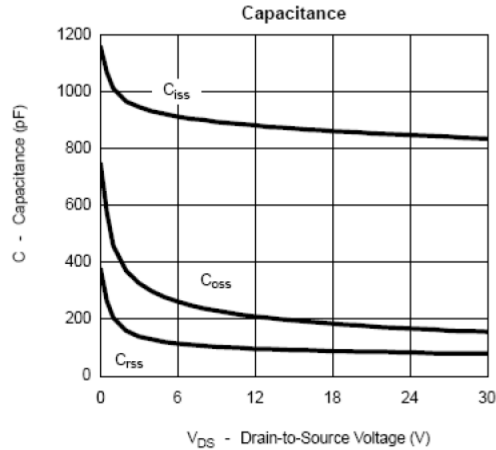
TYPICAL CHARACTERICTICS









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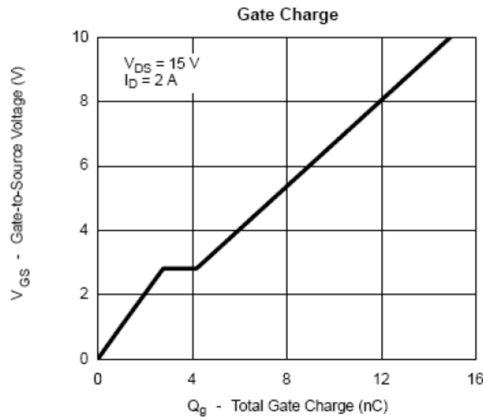

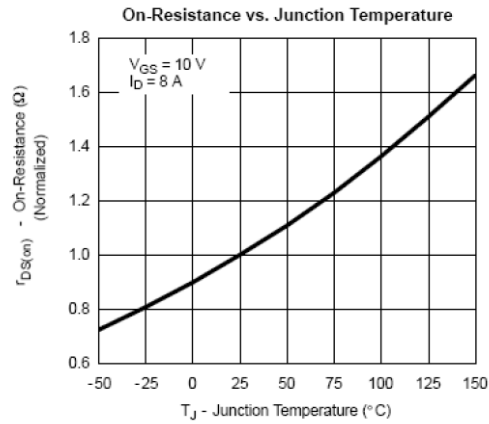

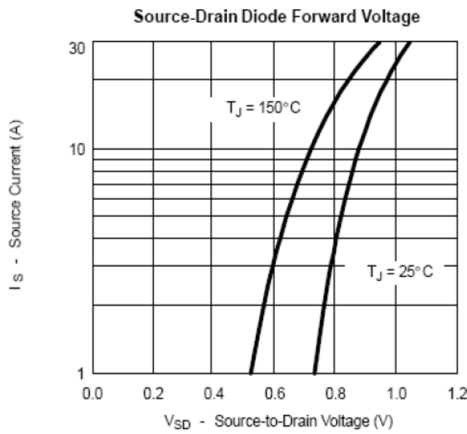

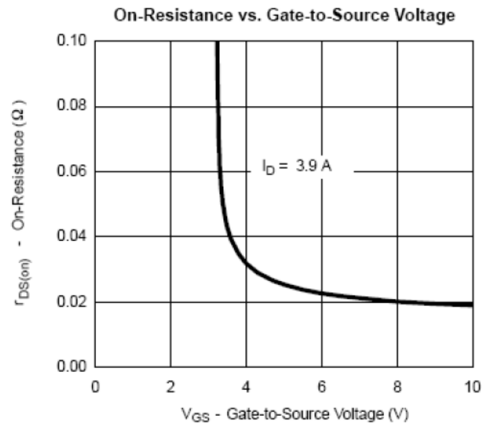

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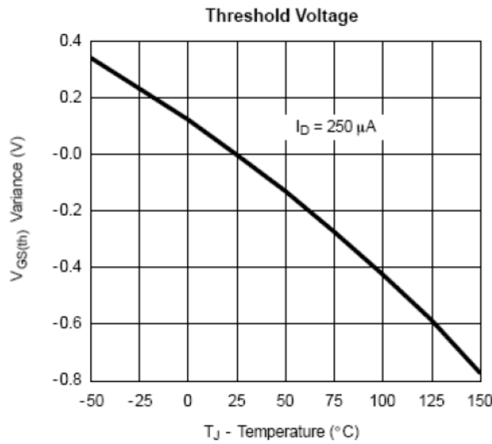

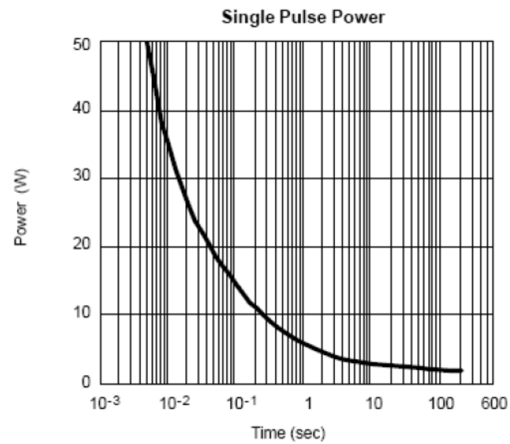

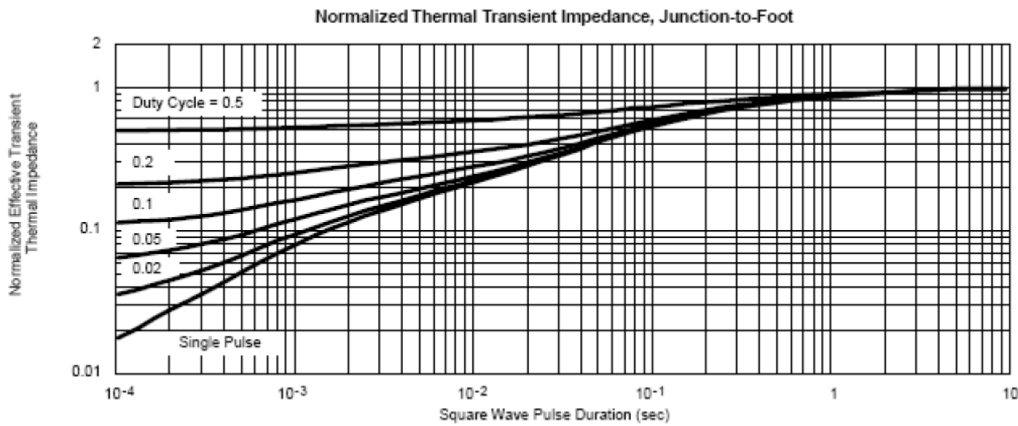

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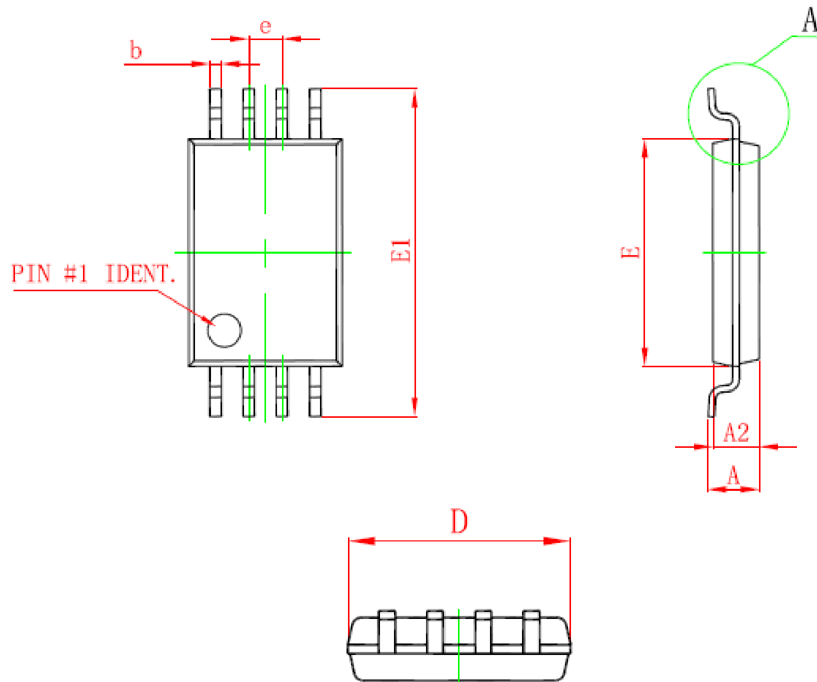
TSSOP-8 PACKAGE OUTLINE



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
D	2.900	3.100	0.114	0.122
E	4.300	4.500	0.169	0.177
b	0.190	0.300	0.007	0.012
c	0.090	0.200	0.004	0.008
E1	6.250	6.550	0.246	0.258
A		1.100		0.043
A2	0.800	1.000	0.031	0.039
A1	0.020	0.150	0.001	0.006
e	0.65 (BSC)		0.026 (BSC)	
L	0.500	0.700	0.020	0.028
H	0.25 (TYP)		0.01 (TYP)	
θ	1°	7°	1°	7°

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