STN9926

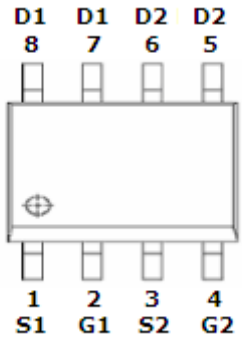
Dual N Channel Enhancement Mode MOSFET

5A

DESCRIPTION

The STN9926 is the Dual N-Channel logic enhancement mode power field effect transistors are 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 , notebook computer power management and other battery powered circuits where high-side switching .

PIN CONFIGURATION
SOP-8

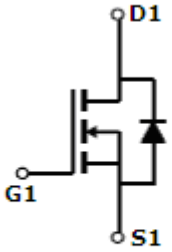


FEATURE

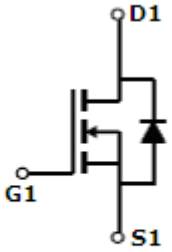
- 20V/5.0A, $R_{DS(ON)}$ = 50mΩ @VGS = 4.5V
- 20V/4.0A, $R_{DS(ON)}$ = 65mΩ @VGS = 2.5V
- 20V/2.8A, $R_{DS(ON)}$ = 90mΩ @VGS = 1.8V
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOP-8 package design

PART MARKING
SOP-8

S : Subcontractor Y : Year Code
A : Process Code



N-Channel



N-Channel

ORDERING INFORMATION

Part Number	Package	Part Marking
STN9926S8RG	SOP-8	STN9926
STN9926S8TG	SOP-8	STN9926

※ Process Code : A ~ Z ; a ~ z
※ STN9926S8RG S8 : SOP-8 ; R : Tape Reel ; G : Pb – Free
※ STN9926S8TG S8 : SOP-8 ; T : Tube ; G : Pb – Free

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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 (TJ=150℃)	T_A=25℃ T_A=70℃	I_D	5.0 4.0	A
Pulsed Drain Current		I_{DM}	30	A
Continuous Source Current (Diode Conduction)		I_S	1.6	A
Power Dissipation	T_A=25℃ T_A=70℃	P_D	2.8 1.8	W
Operation Junction Temperature		T_J	-55/150	℃
Storgae 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}=V_{GS},I_D=250 uA	0.4		1.0	V
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±12V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V,V_{GS}=0V			1	uA
	T_J=55℃	V_{DS}=20V,V_{GS}=0V			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=5.0A V_{GS}=2.5V, I_D=4.0A V_{GS}=1.8V,I_D=2.8A		0.004 0.055 0.075	0.050 0.065 0.090	Ω
Forward Tran Conductance	gfs	V_{DS}=5.0V,I_D=3.6A		10		S
Diode Forward Voltage	V_{SD}	I_S=1.6A,V_{GS}=0V		0.8	1.2	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=6.0V,V_{GS}=4.5V I_D≡2.8A		4.8	8.0	nC
Gate-Source Charge	Q_{gs}			1.0		
Gate-Drain Charge	Q_{gd}			1.0		
Input Capacitance	Ciss	VDS=6.0V,VGS=0V f=1MHz		485		pF
Output Capacitance	Coss			85		
Reverse TransferCapacitance	Crss			40		
Turn-On Time	$t_{d(on)}$	V_{DD}=15V,R_L=15Ω I_D=1A,V_{GEN}=10V R_G=6Ω		12	20	nS
	t_r			10	20	
Turn-Off Time	$t_{d(off)}$			30	36	
	t_f			15	17	

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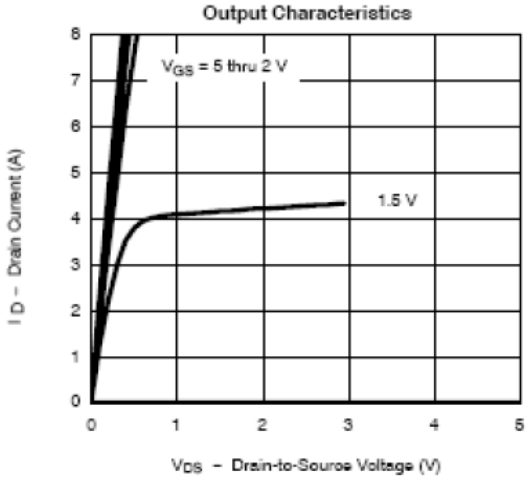
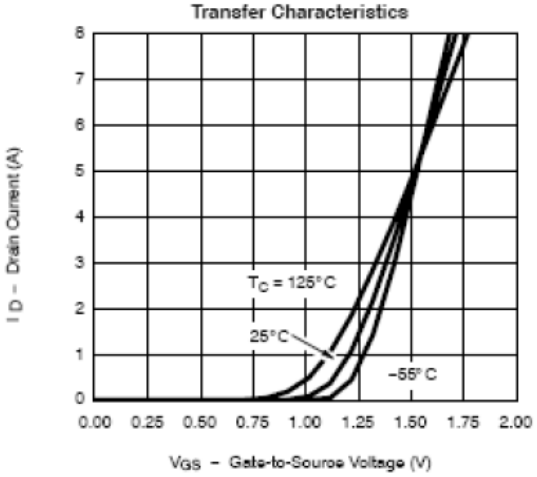
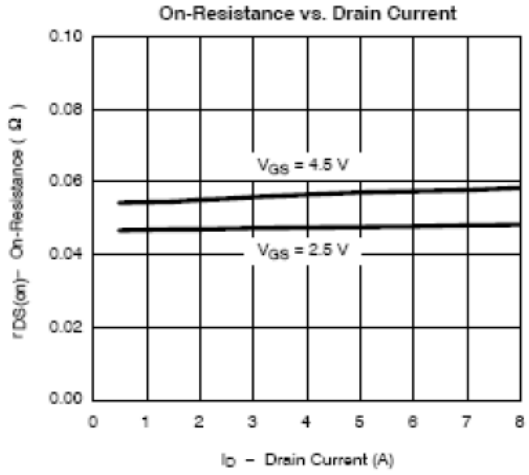
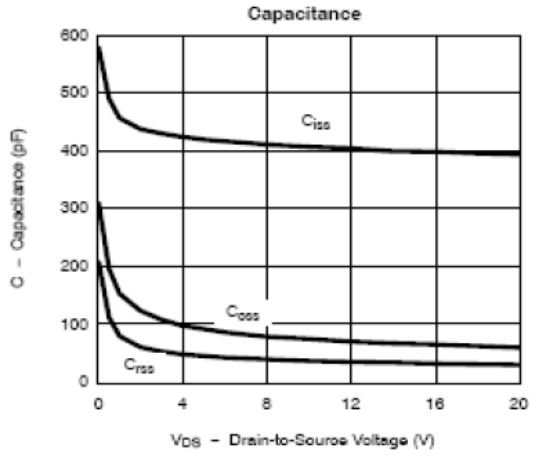
TYPICAL CHARACTERICTICS (25℃ Unless Note)









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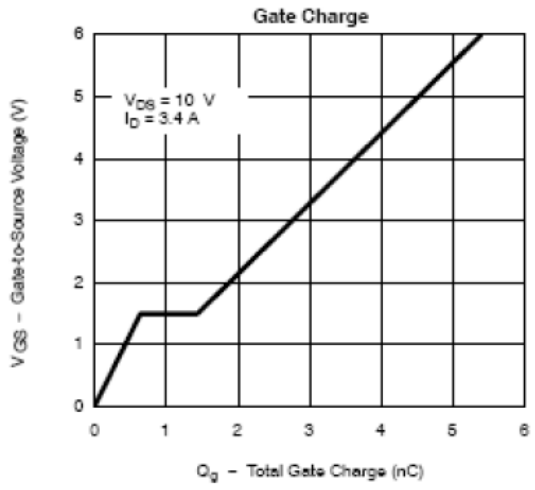

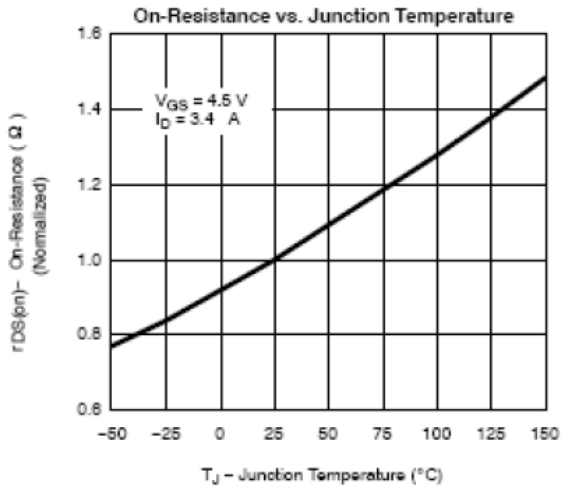

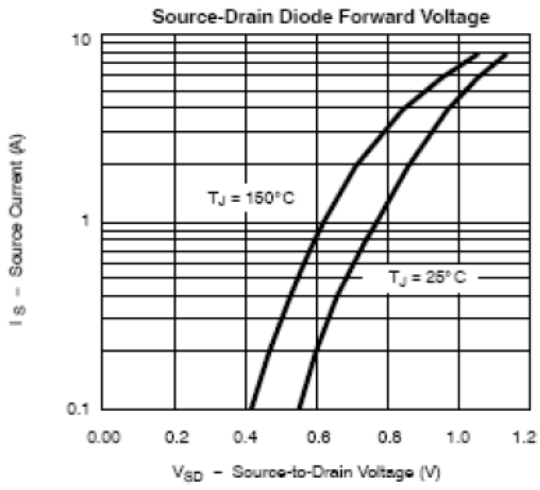

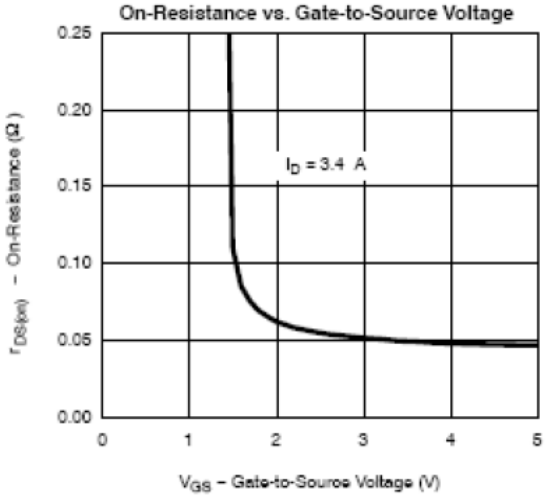

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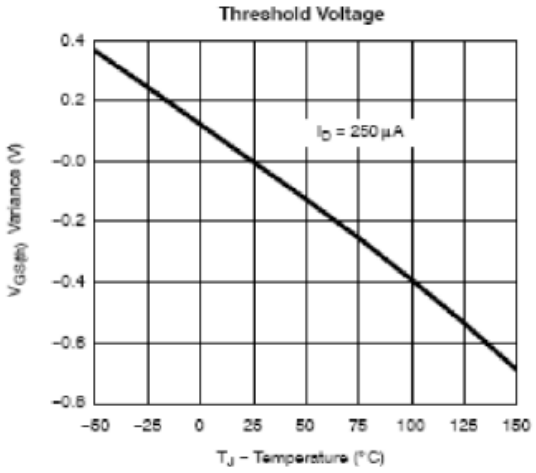

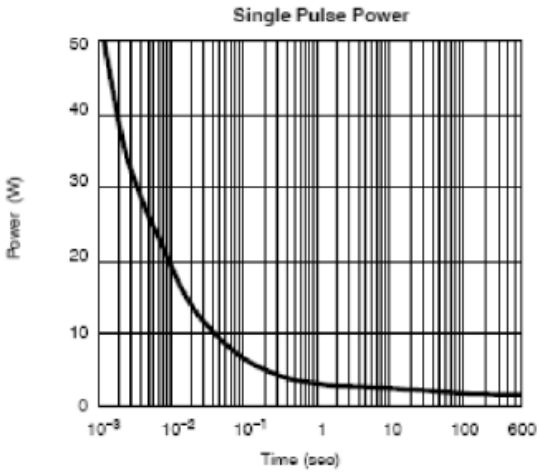

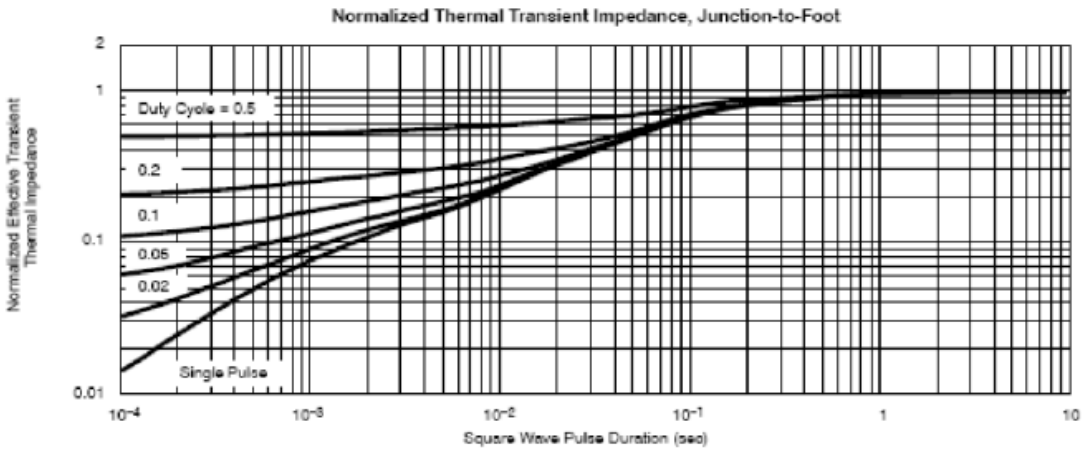

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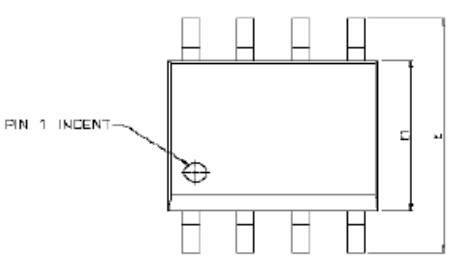
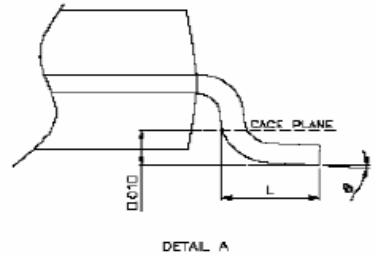
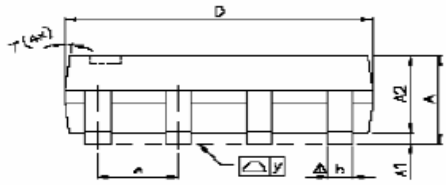
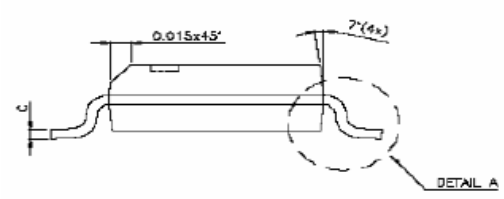
SOP-8 PACKAGE OUTLINE









SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.47	1.60	1.73	0.058	0.063	0.068
A1	0.10	——	0.25	0.004	——	0.010
A2	——	1.45	——	——	0.057	——
b	0.33	0.41	0.51	0.013	0.016	0.020
C	0.19	0.20	0.25	0.0075	0.008	0.0098
D	4.80	4.85	4.95	0.189	0.191	0.195
E	5.80	6.00	6.20	0.228	0.236	0.244
E1	3.80	3.90	4.00	0.150	0.154	0.157
e	——	1.27	——	——	0.050	——
L	0.38	0.71	1.27	0.015	0.028	0.050
⚠2 y	——	——	0.076	——	——	0.003
θ	0°	——	8°	0°	——	8°

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