



SPN9926W

N-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPN9926W 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 .

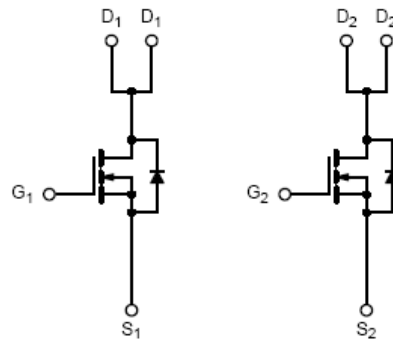
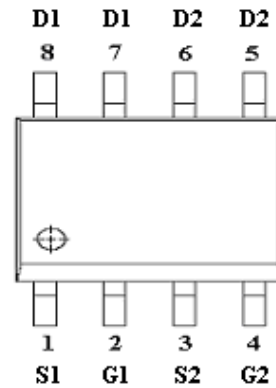
FEATURES

- ◆ 20V/4.0A, $R_{DS(ON)}=55m\Omega@V_{GS}=4.5V$
- ◆ 20V/3.4A, $R_{DS(ON)}=70m\Omega@V_{GS}=2.5V$
- ◆ 20V/2.8A, $R_{DS(ON)}=90m\Omega@V_{GS}=1.8V$
- ◆ Super high density cell design for extremely low $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ SOP – 8P package design

APPLICATIONS

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- DC/DC Converter
- Load Switch
- DSC
- LCD Display inverter

PIN CONFIGURATION(SOP – 8P)



PART MARKING



A : Lot Code
B : Date Code



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PIN DESCRIPTION

Pin	Symbol	Description
1	S1	Source 1
2	G1	Gate 1
3	S2	Source 2
4	G2	Gate 2
5	D2	Drain 2
6	D2	Drain 2
7	D1	Drain 1
8	D1	Drain 1

ORDERING INFORMATION

Part Number	Package	Part Marking
SPN9926WS8RGB	SOP- 8P	SPN9926W

※ SPN9926WS8RGB : 13" Tape Reel ; Pb – Free; Halogen – Free

ABSOLUTE MAXIMUM RATINGS

(TA=25°C Unless otherwise noted)

Parameter	Symbol	Typical	Unit	
Drain-Source Voltage	V _{DSS}	20	V	
Gate –Source Voltage	V _{GSS}	±20	V	
Continuous Drain Current(T _J =150°C)	I _D	TA=25°C	4.0	A
		TA=70°C	3.4	
Pulsed Drain Current	I _{DM}	10	A	
Continuous Source Current(Diode Conduction)	I _S	1.6	A	
Power Dissipation	P _D	TA=25°C	1.25	W
		TA=70°C	0.8	
Operating Junction Temperature	T _J	-55/150	°C	
Storage Temperature Range	T _{STG}	-55/150	°C	
Thermal Resistance-Junction to Ambient	R _{θJA}	105	°C/W	



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ELECTRICAL CHARACTERISTICS

($T_A=25^\circ\text{C}$ Unless otherwise noted)

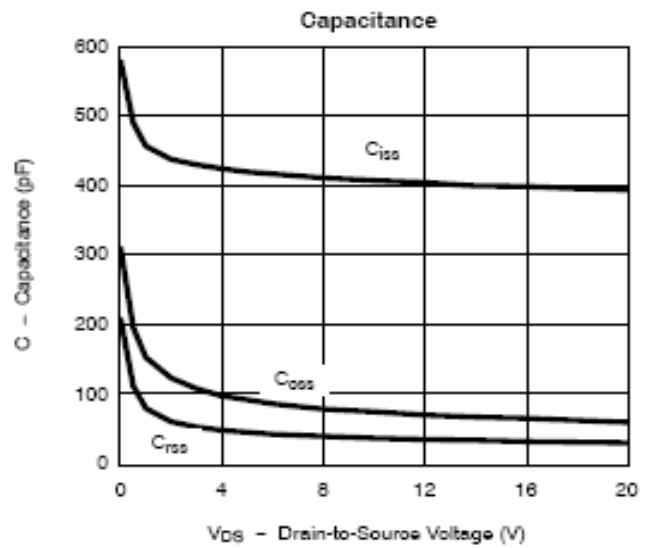
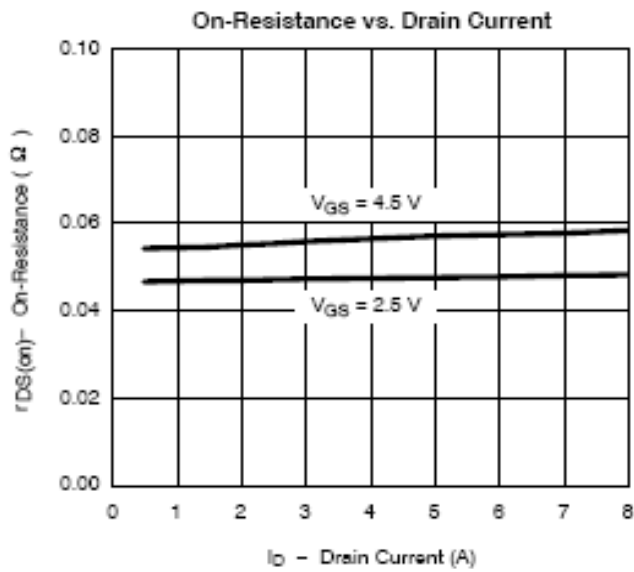
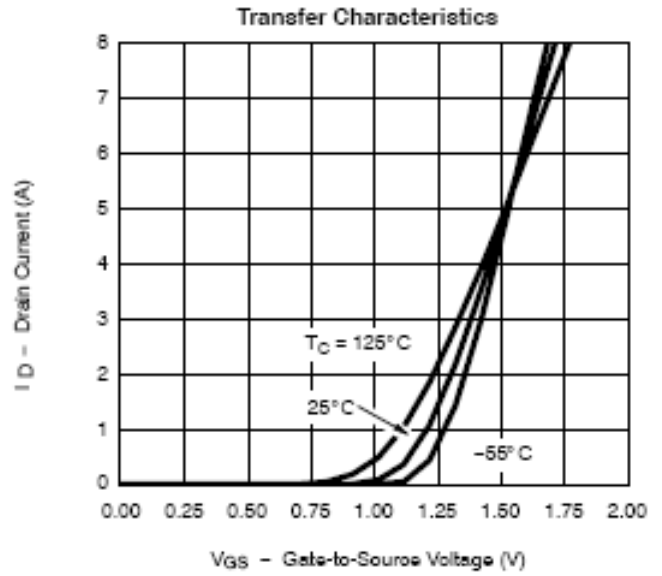
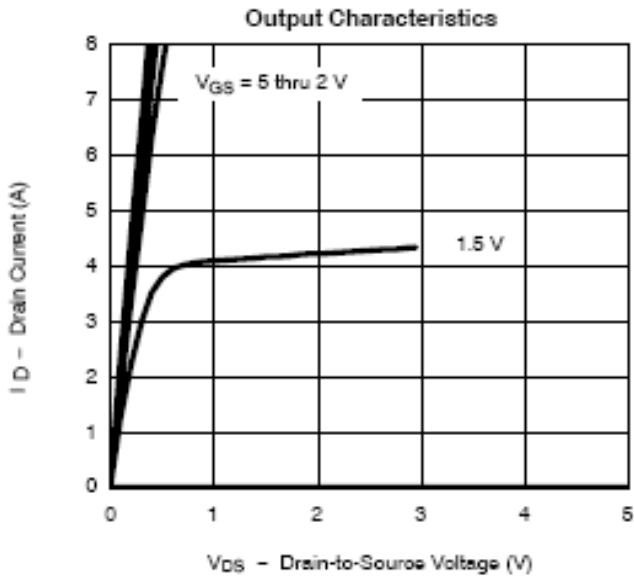
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.4		1.0	
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 12V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$			1	uA
		$V_{DS}=20V, V_{GS}=0V$ $T_J=55^\circ\text{C}$			5	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \leq 5V, V_{GS}=4.5V$	6			A
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=4.0A$		0.040	0.055	Ω
		$V_{GS}=2.5V, I_D=3.4A$		0.055	0.070	
		$V_{GS}=1.8V, I_D=2.8A$		0.075	0.090	
Forward Transconductance	g_{fs}	$V_{DS}=5V, I_D=-3.6A$		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	$V_{DS}=6V, V_{GS}=4.5V$ $I_D=2.8A$		4.8	8	nC
Gate-Source Charge	Q_{gs}			1.0		
Gate-Drain Charge	Q_{gd}			1.0		
Input Capacitance	C_{iss}	$V_{DS}=6V, V_{GS}=0V$ $f=1\text{MHz}$		485		pF
Output Capacitance	C_{oss}			85		
Reverse Transfer Capacitance	C_{rss}			40		
Turn-On Time	$t_{d(on)}$	$V_{DD}=6V, R_L=6\Omega$ $I_D=1.0A, V_{GEN}=4.5V$ $R_G=6\Omega$		8	14	ns
	t_r			12	18	
Turn-Off Time	$t_{d(off)}$			30	35	
	t_f			12	16	



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TYPICAL CHARACTERISTICS

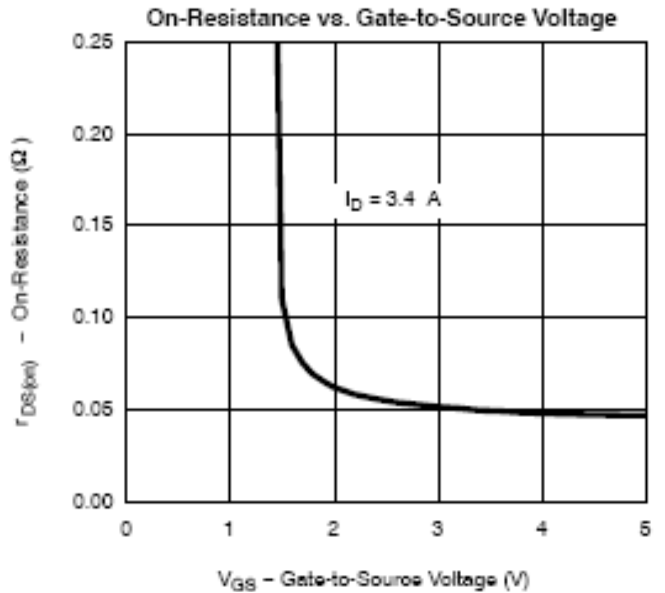
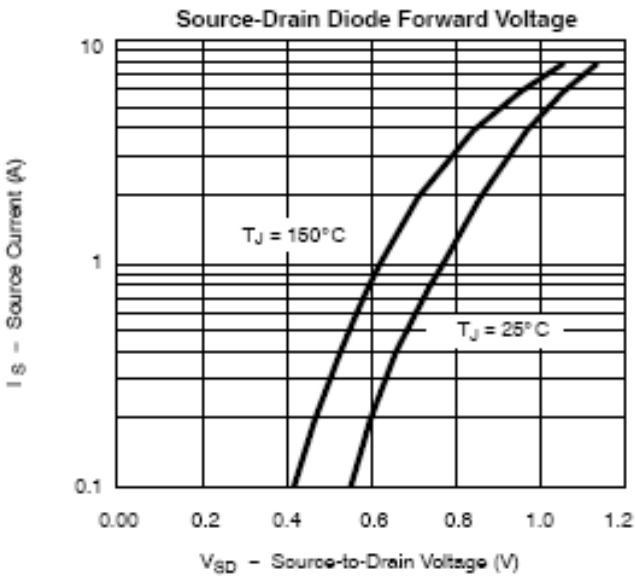
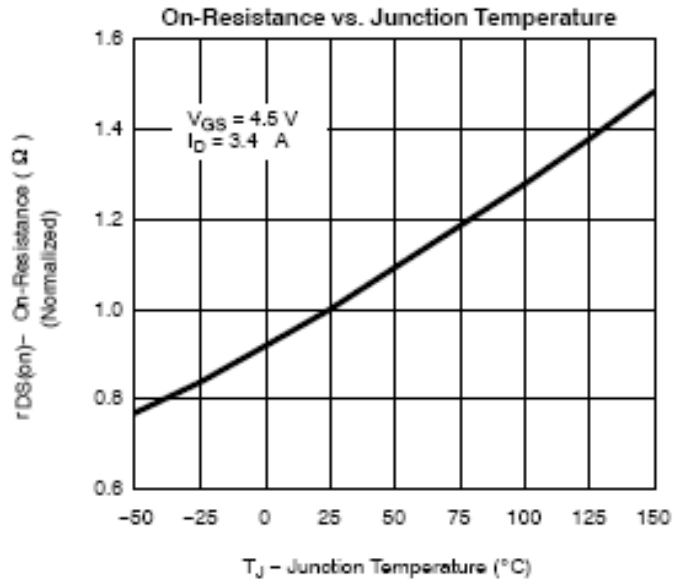
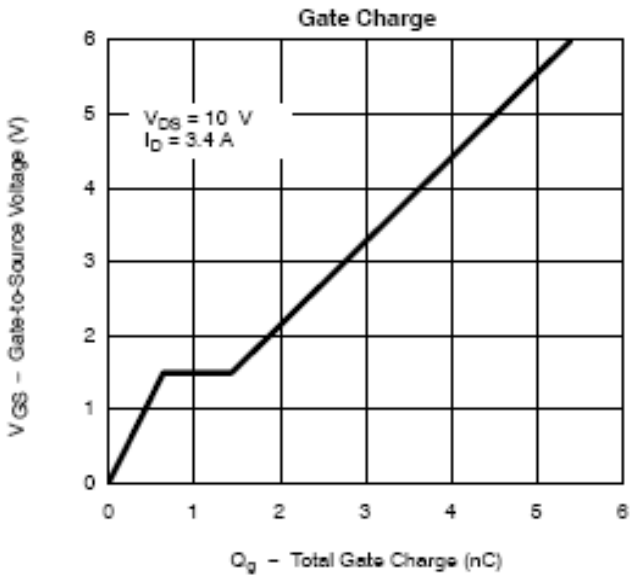




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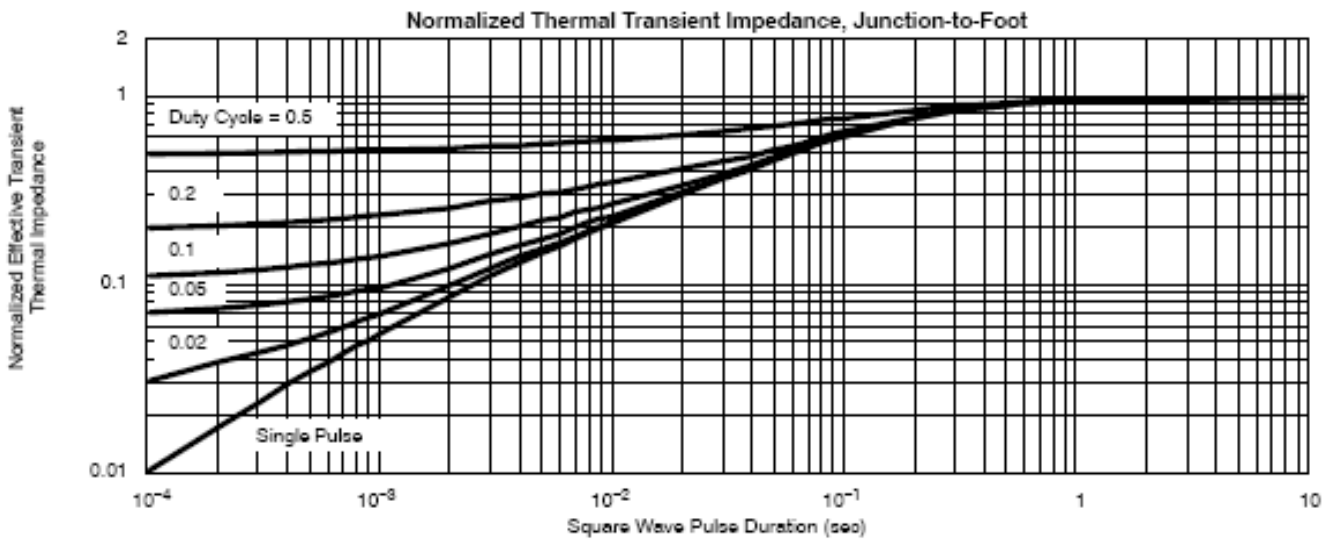
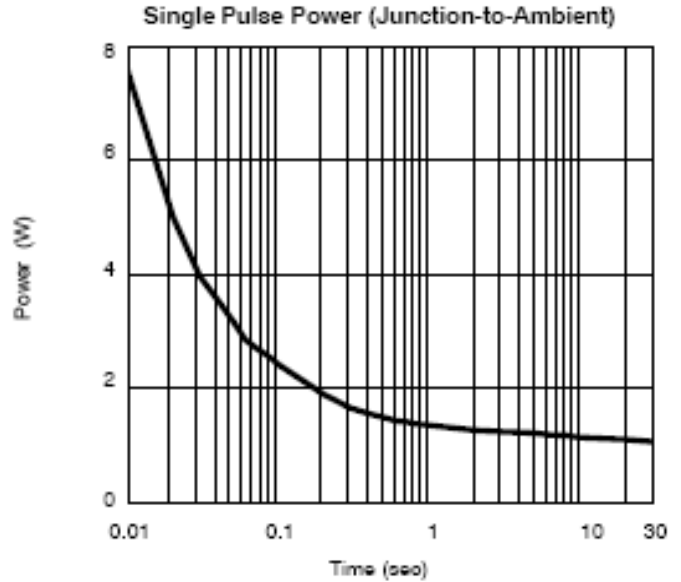
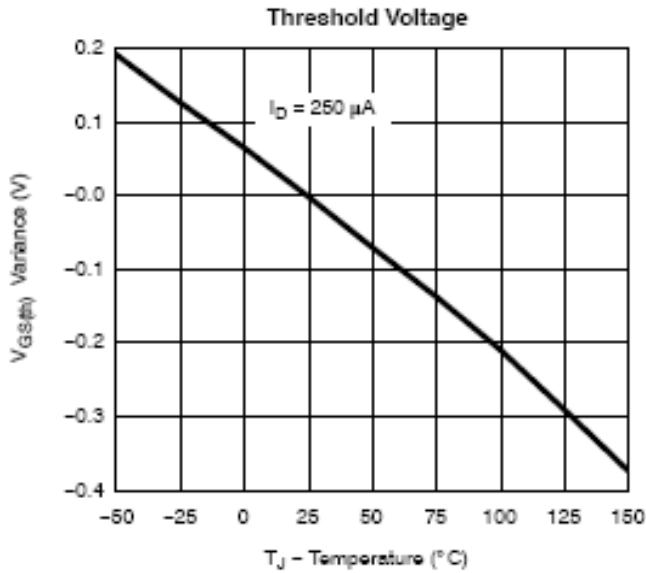
TYPICAL CHARACTERISTICS





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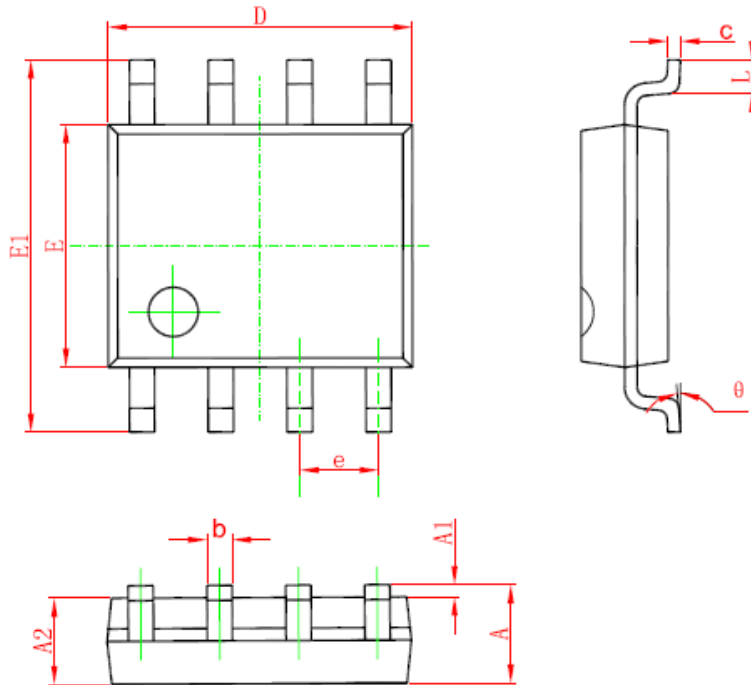




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SOP- 8 PACKAGE OUTLINE



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270 (BSC)		0.050 (BSC)	
L	0.400	1.270	0.016	0.050
theta	0°	8°	0°	8°



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SYNC Power Corporation

7F-2, No.3-1, Park Street

NanKang District (NKSP), Taipei, Taiwan 115

Phone: 886-2-2655-8178

Fax: 886-2-2655-8468

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