



# SPN8822

## Common-Drain Dual N-Channel Enhancement Mode MOSFET

### DESCRIPTION

The SPN8822 is the Common-Drain 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 .

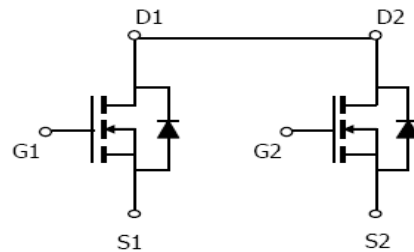
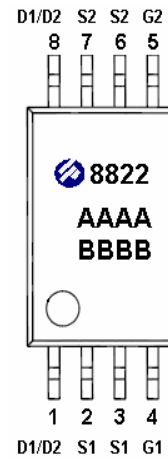
### FEATURES

- ◆ 20V/8.0A,  $R_{DS(ON)} = 24m\Omega @ V_{GS} = 4.5V$
- ◆ 20V/7.0A,  $R_{DS(ON)} = 32m\Omega @ V_{GS} = 2.5V$
- ◆ 20V/3.0A,  $R_{DS(ON)} = 42m\Omega @ V_{GS} = 1.8V$
- ◆ Super high density cell design for extremely low RDS (ON)
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ TSSOP – 8P package design

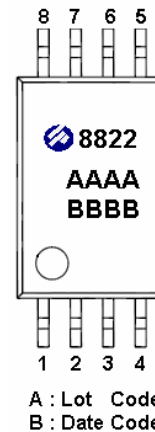
### APPLICATIONS

- 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





# SPN8822

## Common-Drain Dual N-Channel Enhancement Mode MOSFET

### PIN DESCRIPTION

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

### ORDERING INFORMATION

Part Number	Package	Part Marking
SPN8822TS8RG	TSSOP- 8P	8822
SPN8822TS8TG	TSSOP- 8P	8822

※ SPN8822TS8RG : 13" Tape Reel ; Pb – Free

※ SPN8822TS8TG : Tube ; Pb – Free

### ABSOLUTE MAXIMUM RATINGS

(TA=25°C Unless otherwise noted)

Parameter	Symbol	Typical	Unit
Drain-Source Voltage	V <sub>DSS</sub>	20	V
Gate –Source Voltage	V <sub>GSS</sub>	±12	V
Continuous Drain Current(T <sub>J</sub> =150°C)	I <sub>D</sub>	TA=25°C	7.4
		TA=70°C	6.0
Pulsed Drain Current	I <sub>DM</sub>	30	A
Continuous Source Current(Diode Conduction)	I <sub>S</sub>	2.3	A
Power Dissipation	P <sub>D</sub>	TA=25°C	1.5
		TA=70°C	0.9
Operating Junction Temperature	T <sub>J</sub>	-55/150	°C
Storage Temperature Range	T <sub>STG</sub>	-55/150	°C
Thermal Resistance-Junction to Ambient	R <sub>θJA</sub>	80	°C/W



# SPN8822

## Common-Drain Dual N-Channel Enhancement Mode MOSFET

### ELECTRICAL CHARACTERISTICS

(TA=25°C Unless otherwise noted)

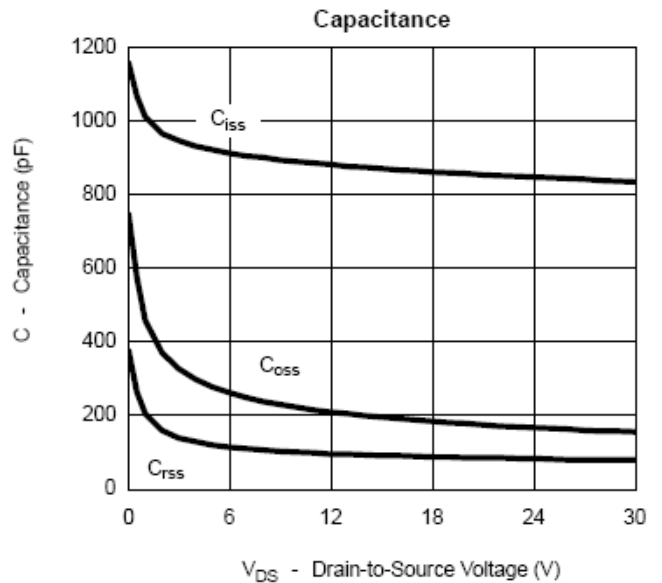
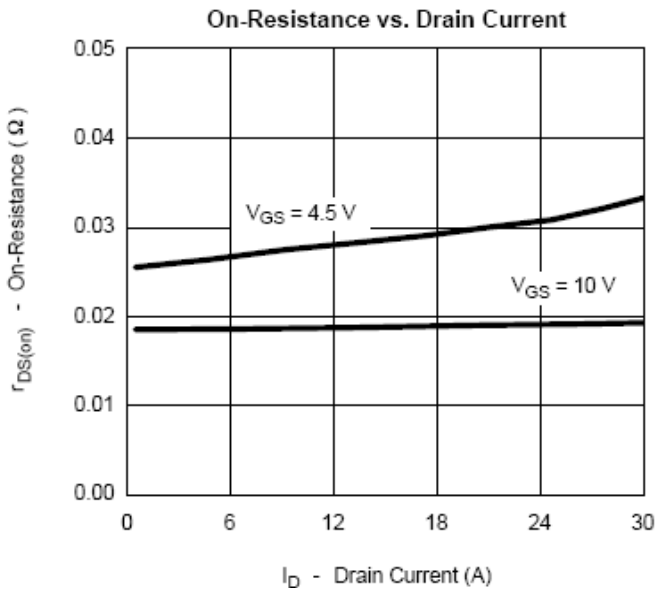
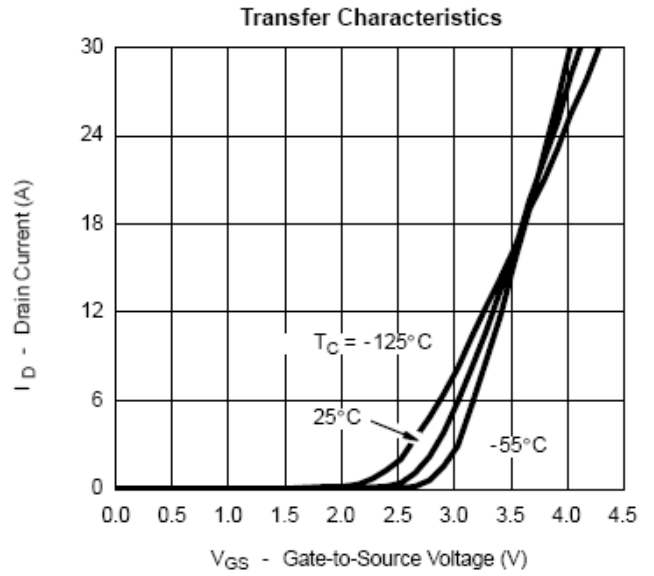
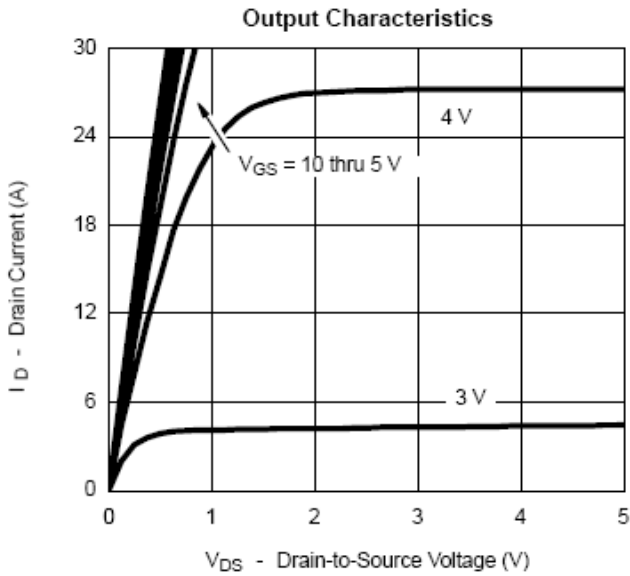
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.4		1.0	
Gate Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 12V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=20V, V_{GS}=0V$			1	uA
		$V_{DS}=20V, V_{GS}=0V$ $T_J=55^\circ C$			10	
On-State Drain Current	$I_{D(on)}$	$V_{DS}\geq 5V, V_{GS}=4.5V$	6			A
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=8.0A$		0.020	0.024	$\Omega$
		$V_{GS}=2.5V, I_D=7.0A$		0.024	0.032	
		$V_{GS}=1.8V, I_D=3.0A$		0.032	0.042	
Forward Transconductance	$g_{fs}$	$V_{DS}=15V, I_D=5.0A$		30		S
Diode Forward Voltage	$V_{SD}$	$I_S=1.0A, V_{GS}=0V$		0.8	1.2	V
<b>Dynamic</b>						
Total Gate Charge	$Q_g$	$V_{DS}=10V, V_{GS}=4.5V$ $I_D=5.0A$		10	13	nC
Gate-Source Charge	$Q_{gs}$			1.4		
Gate-Drain Charge	$Q_{gd}$			2.1		
Input Capacitance	$C_{iss}$	$V_{DS}=10V, V_{GS}=0V$ $f=1MHz$		600		pF
Output Capacitance	$C_{oss}$			120		
Reverse Transfer Capacitance	$C_{rss}$			100		
Turn-On Time	$t_{d(on)}$	$V_{DD}=10V, R_L=10\Omega$ $I_D=1.0A, V_{GEN}=4.5V$ $R_G=6\Omega$		15	25	ns
	$t_r$			40	60	
Turn-Off Time	$t_{d(off)}$			45	65	
	$t_f$			30	40	



# SPN8822

## Common-Drain Dual N-Channel Enhancement Mode MOSFET

### TYPICAL CHARACTERISTICS

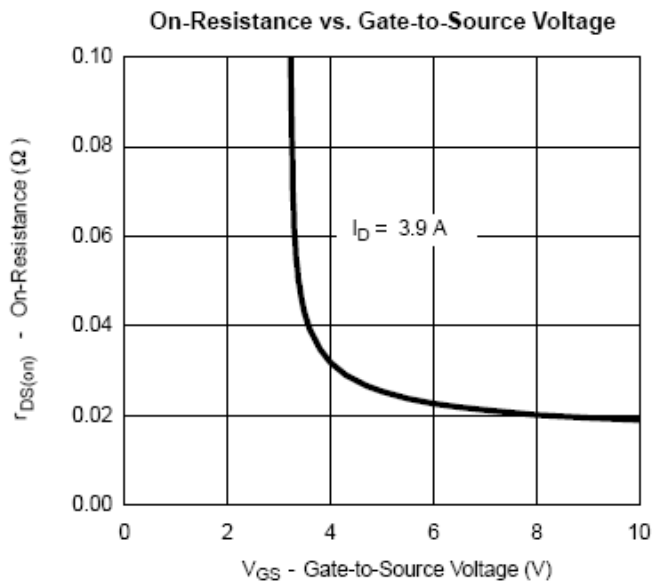
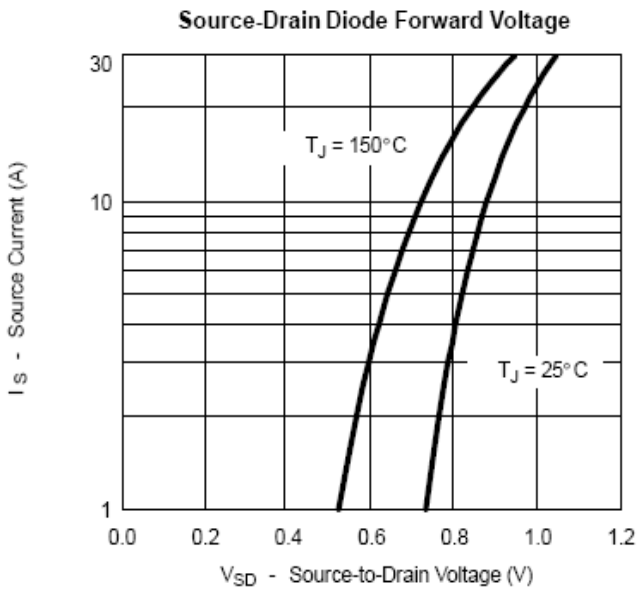
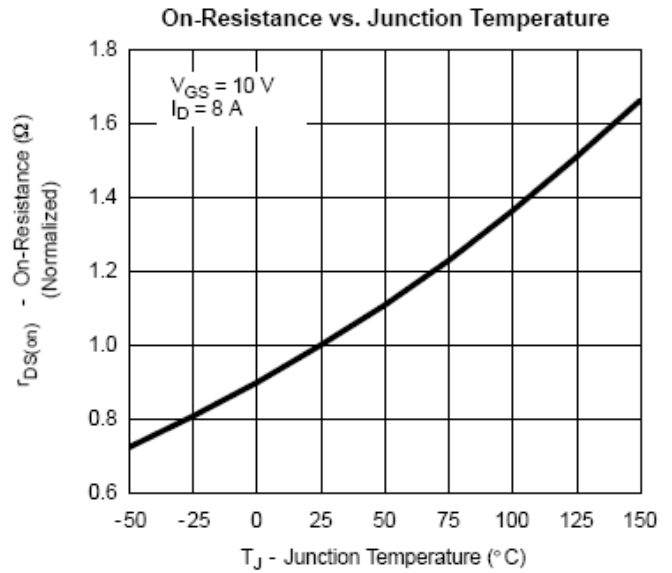
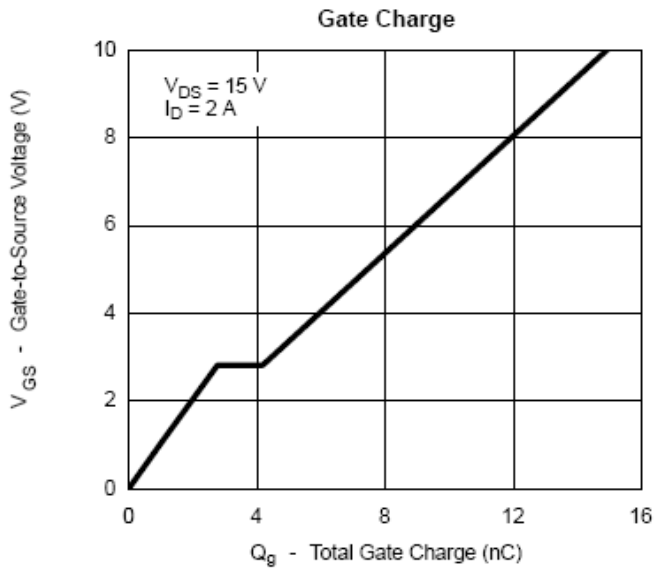




# SPN8822

## Common-Drain Dual N-Channel Enhancement Mode MOSFET

### TYPICAL CHARACTERISTICS

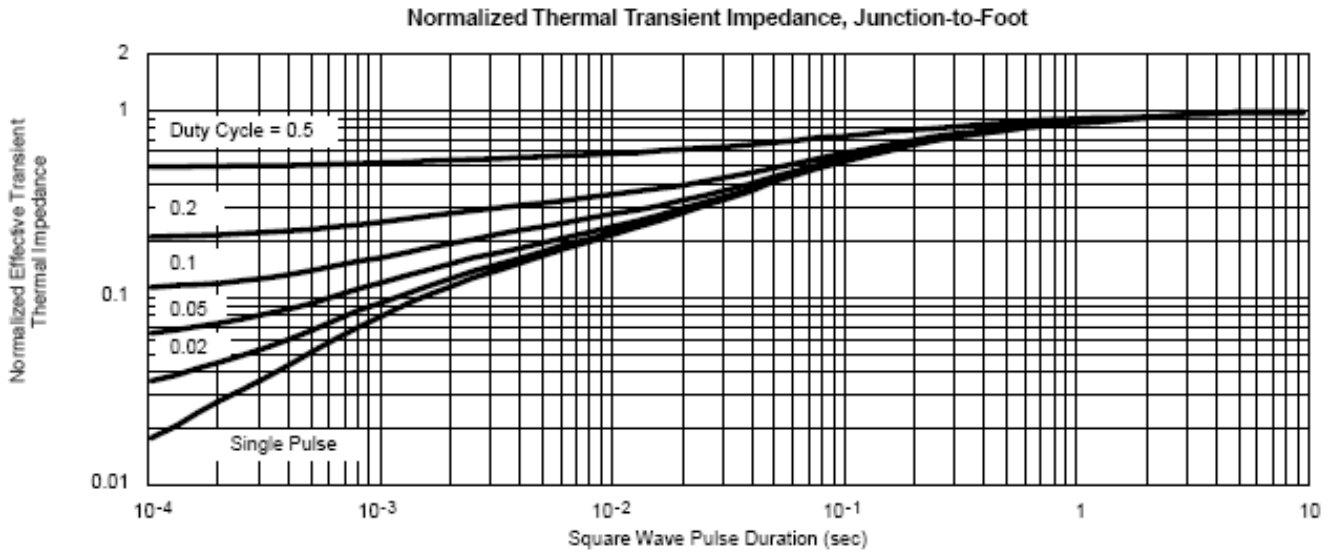
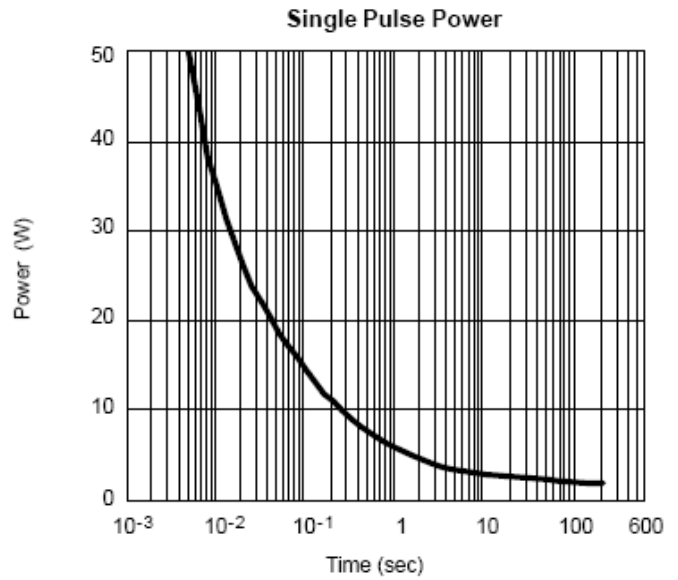
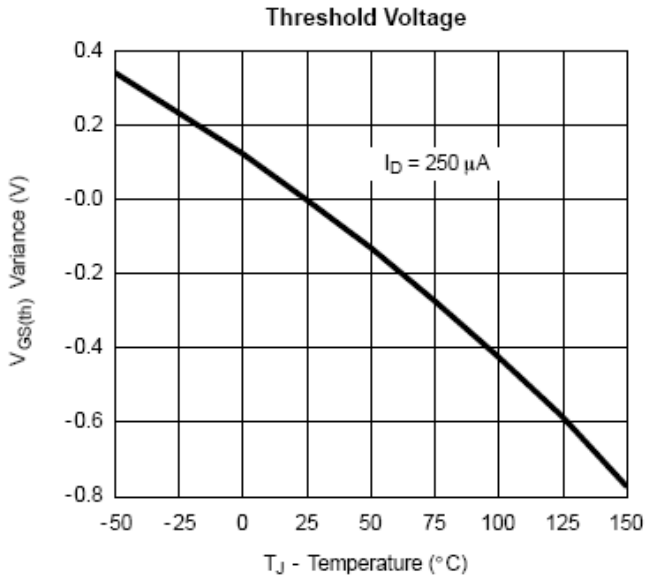




# SPN8822

## Common-Drain Dual N-Channel Enhancement Mode MOSFET

### TYPICAL CHARACTERISTICS

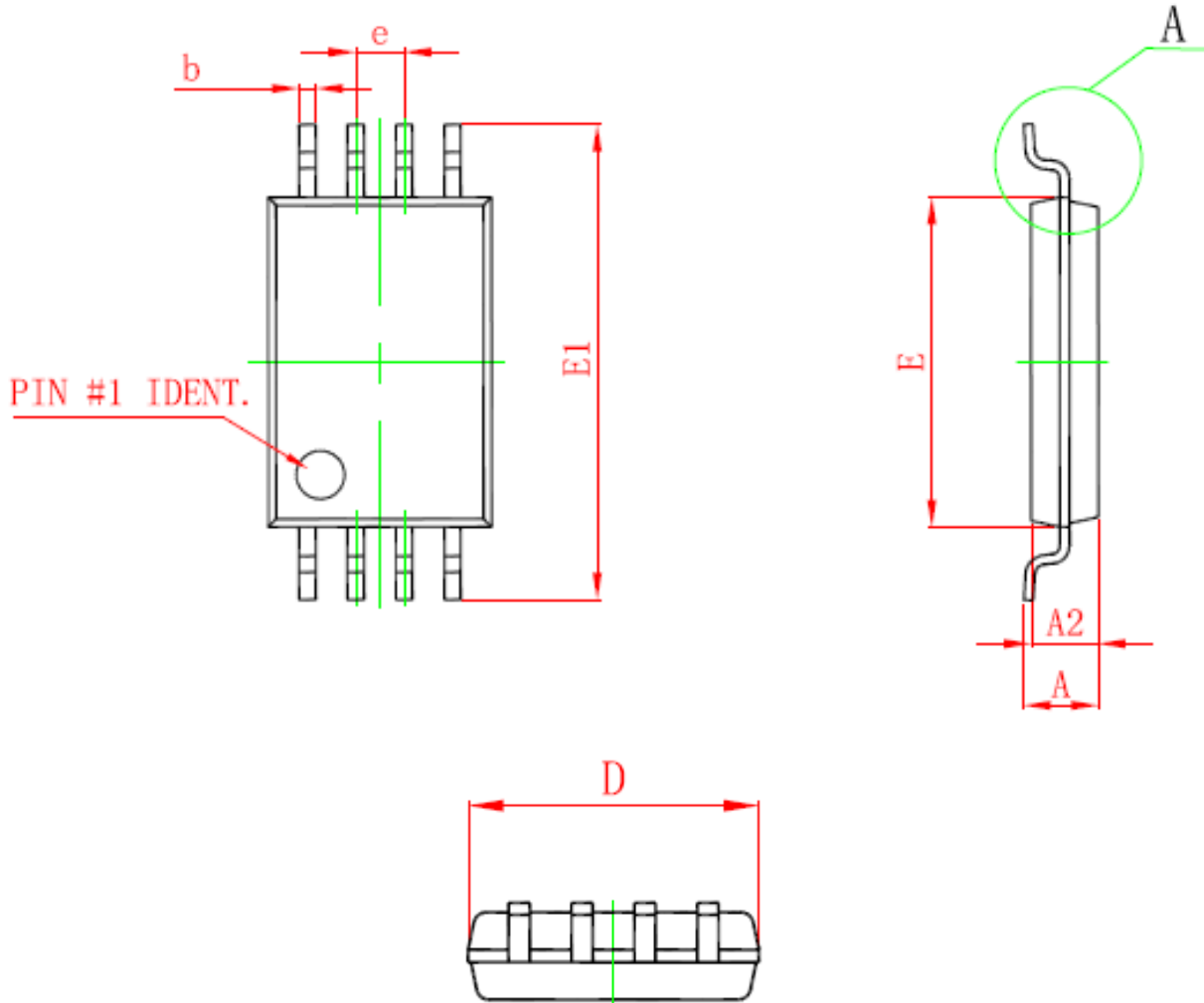




# SPN8822

## Common-Drain Dual N-Channel Enhancement Mode MOSFET

### TSSOP- 8P 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°



# SPN8822

## Common-Drain Dual N-Channel Enhancement Mode MOSFET

---

Information provided is alleged to be exact and consistent. SYNC Power Corporation presumes no responsibility for the penalties of use of such information or for any violation of patents or other rights of third parties which may result from its use. No license is granted by allegation or otherwise under any patent or patent rights of SYNC Power Corporation. Conditions mentioned in this publication are subject to change without notice. This publication surpasses and replaces all information previously supplied. SYNC Power Corporation products are not authorized for use as critical components in life support devices or systems without express written approval of SYNC Power Corporation.

©The SYNC Power logo is a registered trademark of SYNC Power Corporation  
©2004 SYNC Power Corporation – Printed in Taiwan – All Rights Reserved  
SYNC Power Corporation  
9F-5, No.3-2, Park Street  
NanKang District (NKSP), Taipei, Taiwan 115  
Phone: 886-2-2655-8178  
Fax: 886-2-2655-8468  
©<http://www.syncpower.com>