



# 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 .

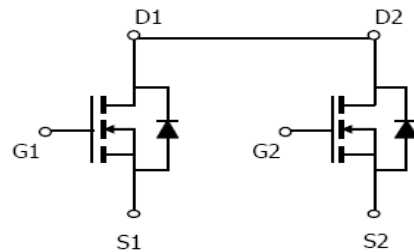
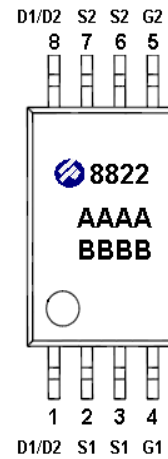
### FEATURES

- ◆ 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  $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ TSSOP-8 package design

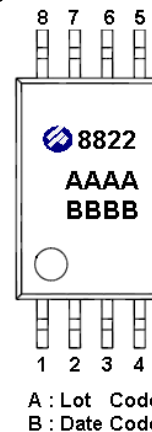
### APPLICATIONS

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

### PIN CONFIGURATION(TSSOP-8)



### PART MARKING





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### 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
SPN8822TS8RGB	TSSOP-8	8822
SPN8822TS8TGB	TSSOP-8	8822

※ SPN8822TS8RGB : 13" Tape Reel ; Pb – Free; Halogen - Free

※ SPN8822TS8TGB : Tube ; Pb – Free; Halogen - 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	A
		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	W
		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	



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### ELECTRICAL CHARACTERISTICS

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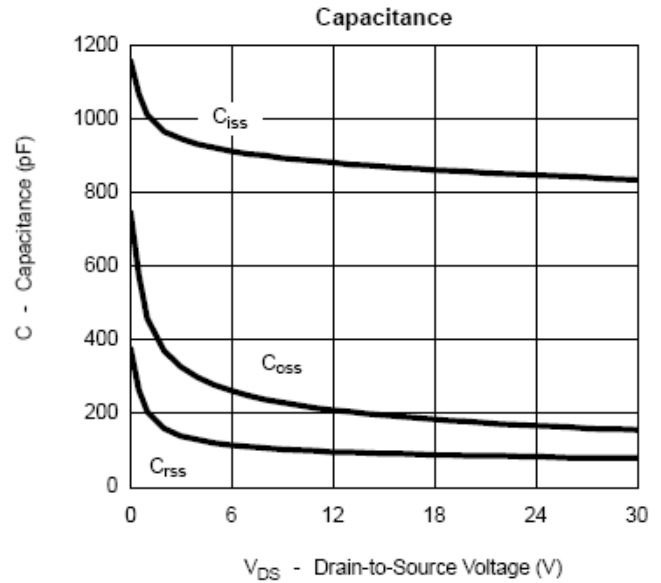
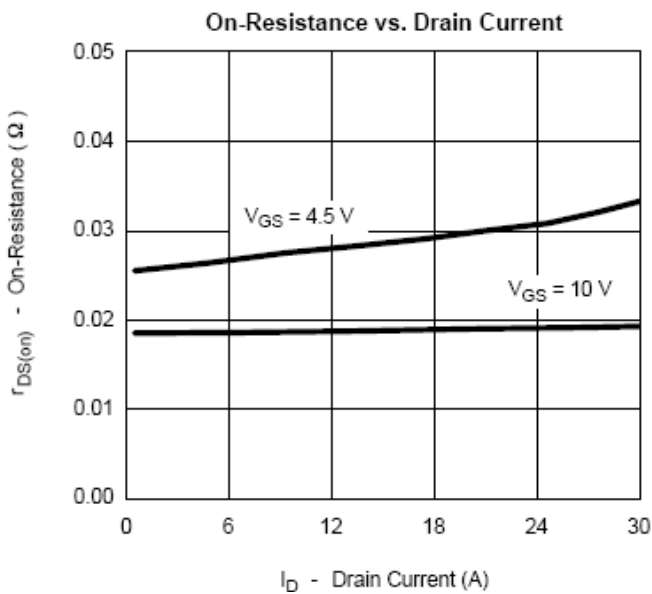
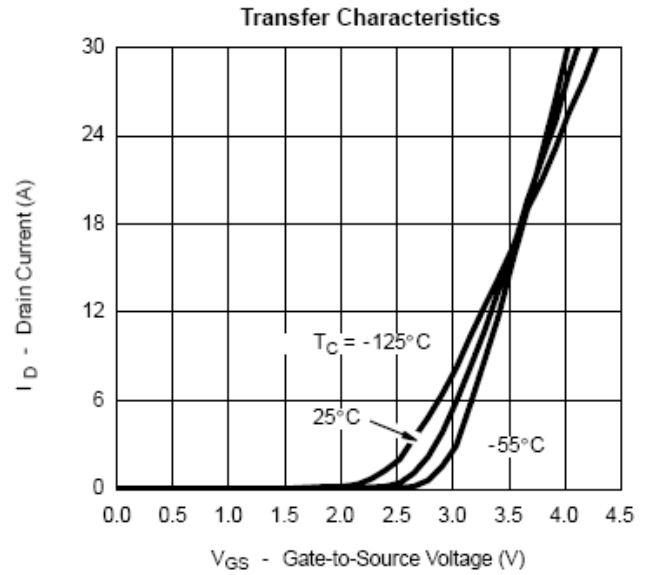
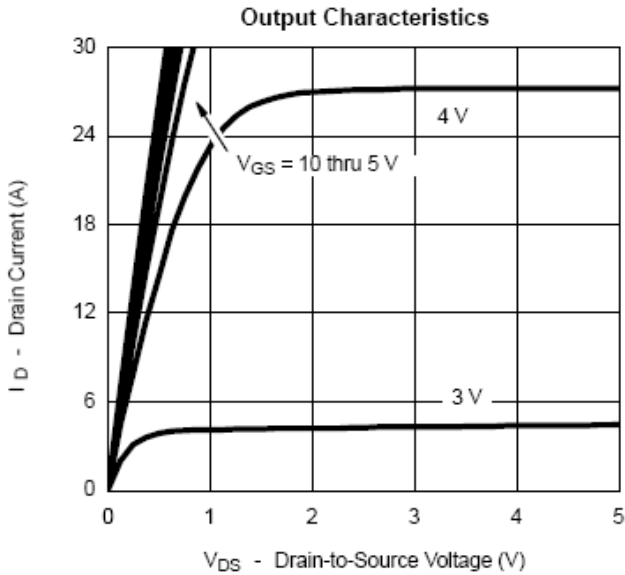
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250uA	20			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250uA	0.4		1.0	
Gate Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±12V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =20V, V <sub>GS</sub> =0V			1	uA
		V <sub>DS</sub> =20V, V <sub>GS</sub> =0V T <sub>J</sub> =55°C			10	
On-State Drain Current	I <sub>D(on)</sub>	V <sub>DS</sub> ≥5V, V <sub>GS</sub> =4.5V	6			A
Drain-Source On-Resistance	R <sub>DSS(on)</sub>	V <sub>GS</sub> = 4.5V, I <sub>D</sub> =8.0A		0.020	0.024	Ω
		V <sub>GS</sub> = 2.5V, I <sub>D</sub> =7.0A		0.024	0.032	
		V <sub>GS</sub> = 1.8V, I <sub>D</sub> =3.0A		0.032	0.042	
Forward Transconductance	g <sub>fs</sub>	V <sub>DS</sub> =15V, I <sub>D</sub> =5.0A		30		S
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =1.0A, V <sub>GS</sub> =0V		0.8	1.2	V
<b>Dynamic</b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =4.5V I <sub>D</sub> =5.0A		10	13	nC
Gate-Source Charge	Q <sub>gs</sub>			1.4		
Gate-Drain Charge	Q <sub>gd</sub>			2.1		
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =0V f=1MHz		600		pF
Output Capacitance	C <sub>oss</sub>			120		
Reverse Transfer Capacitance	C <sub>rss</sub>			100		
Turn-On Time	t <sub>d(on)</sub>	V <sub>DD</sub> =10V, R <sub>L</sub> =10Ω I <sub>D</sub> =1.0A, V <sub>GEN</sub> =4.5V R <sub>G</sub> =6Ω		15	25	nS
	t <sub>r</sub>			40	60	
Turn-Off Time	t <sub>d(off)</sub>			45	65	
	t <sub>f</sub>			30	40	



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### TYPICAL CHARACTERISTICS

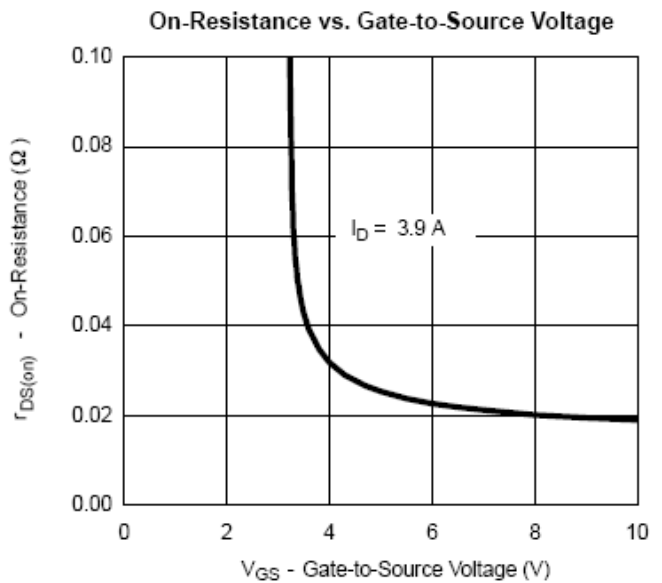
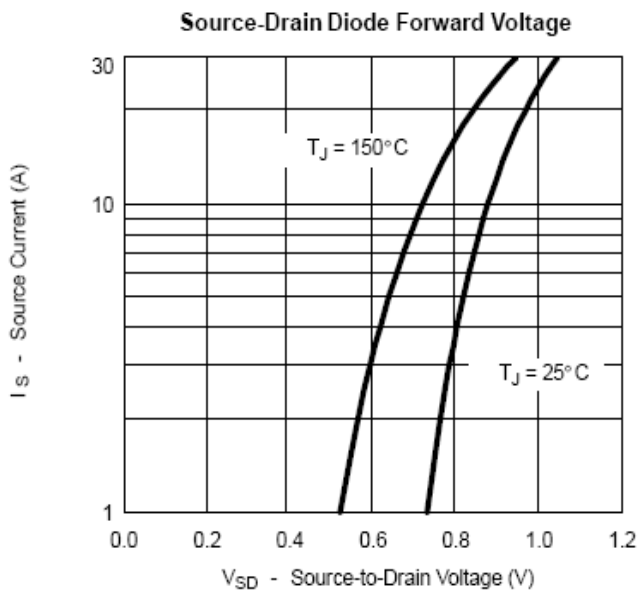
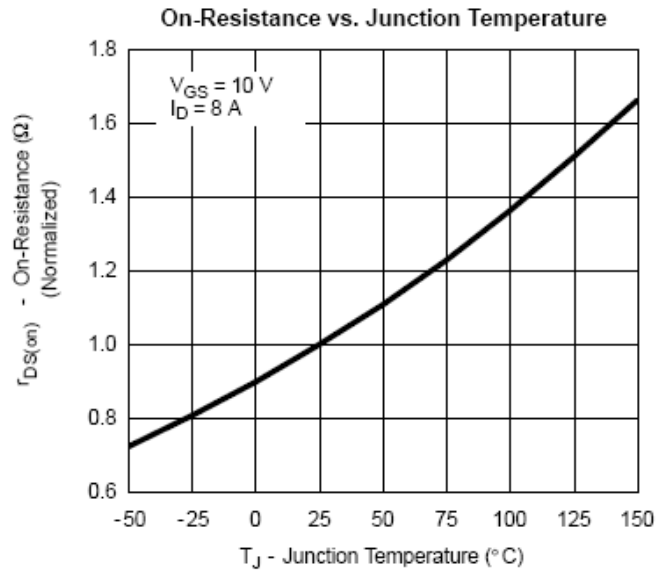
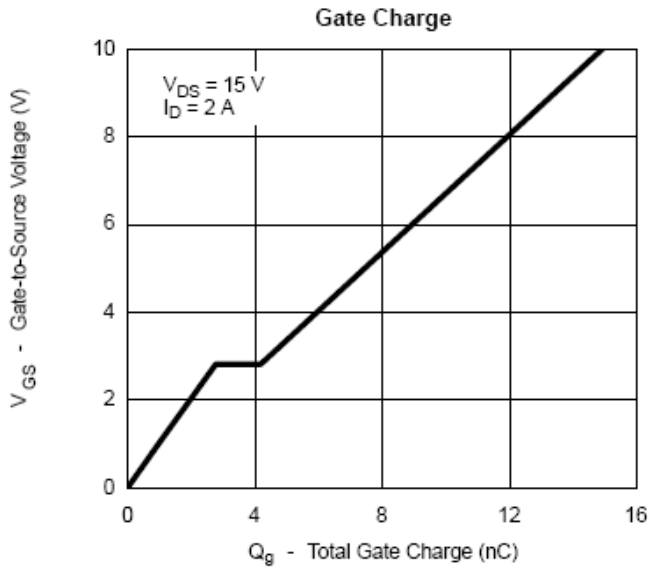




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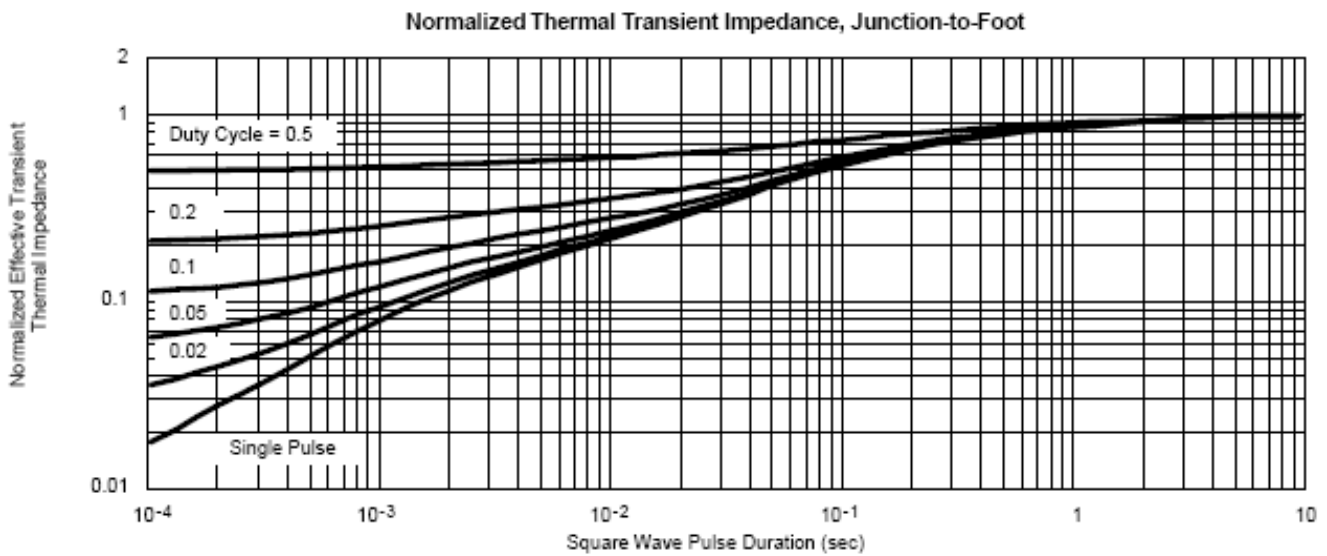
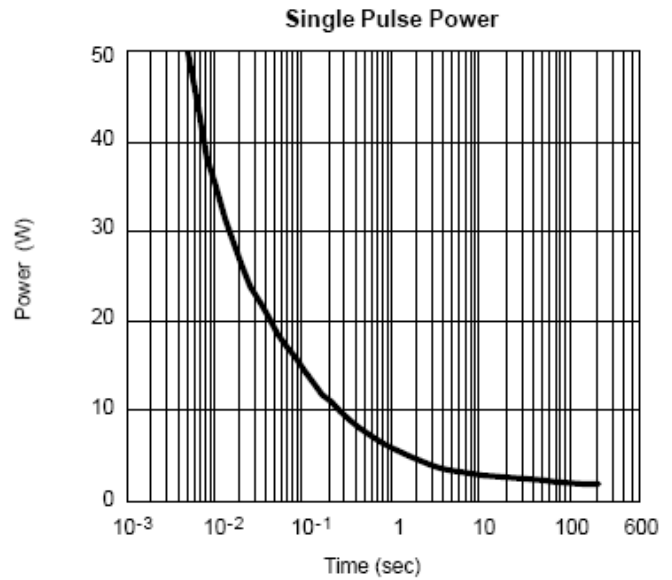
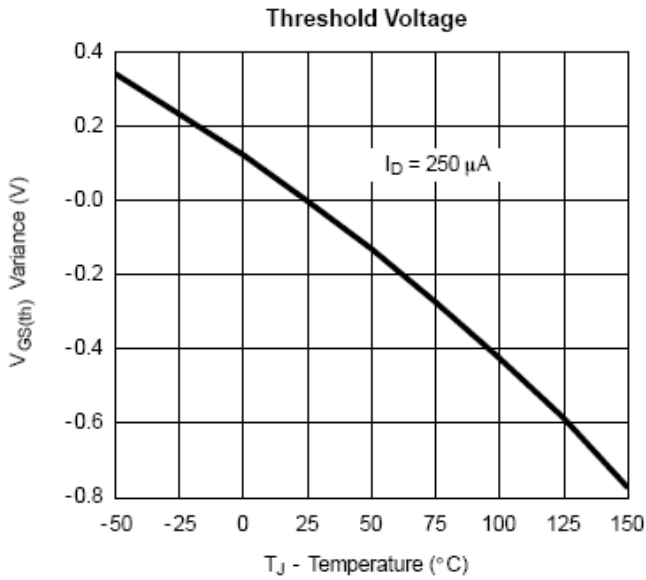




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### TYPICAL CHARACTERISTICS





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