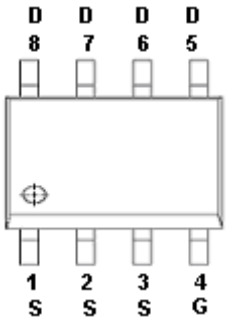
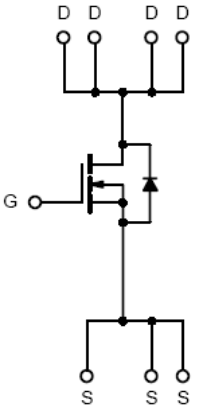
SPN4436
N-Channel Enhancement Mode MOSFET

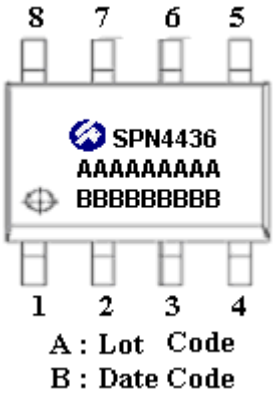
DESCRIPTION
The SPN4436 is the N-Channel logic enhancement mode power field effect transistors are produced using high cell density , DMOS trench technology.
This high density process is especially tailored to minimize on-state resistance.
These devices are particularly suited for low voltage application , notebook computer power management and other battery powered circuits where high-side switching .

APPLICATIONS
- DC/DC Converter
- Load Switch

FEATURES
- 60V/8.0A,$R_{DS(ON)}$=38mΩ@V_{GS}=10V
- 60V/6.0A,$R_{DS(ON)}$=44mΩ@V_{GS}=4.5V
- Super high density cell design for extremely low $R_{DS\ (ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOP–8 package design

PIN CONFIGURATION(SOP–8)




PART MARKING


A : Lot Code
B : Date Code

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PIN DESCRIPTION

Pin	Symbol	Description
1	S	Source
2	S	Source
3	S	Source
4	G	Gate
5	D	Drain
6	D	Drain
7	D	Drain
8	D	Drain

ORDERING INFORMATION

Part Number	Package	Part Marking
SPN4436S8RGB	SOP-8	SPN4436

※ SPN4436S8RGB : 13" Tape Reel ; Pb – Free ; Halogen – Free

ABSOULTE MAXIMUM RATINGS

(T_A=25℃ Unless otherwise noted)

Parameter		Symbol	Typical	Unit
Drain-Source Voltage		V_{DSS}	60	V
Gate –Source Voltage		V_{GSS}	±20	V
Continuous Drain Current(T_J=150℃)	T_A=25℃	I_D	8.0	A
	T_A=70℃		7.2	
Pulsed Drain Current		I_{DM}	35	A
Avalanche Current		I_{AS}	15	A
Power Dissipation (A)	T_A=25℃	P_D	2.5	W
	T_A=70℃		1.6	
Operating Junction Temperature		T_J	-55/150	℃
Storage Temperature Range		T_{STG}	-55/150	℃
Thermal Resistance-Junction to Ambient		$R_{\theta JA}$	80	℃/W

A : The value of $R_{\theta JA}$ is measured with the device mounted on 1in 2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25℃.The value in any a given application depends on the user's specific board design. The current rating is based on the t ≤ 10s thermal resistance rating.

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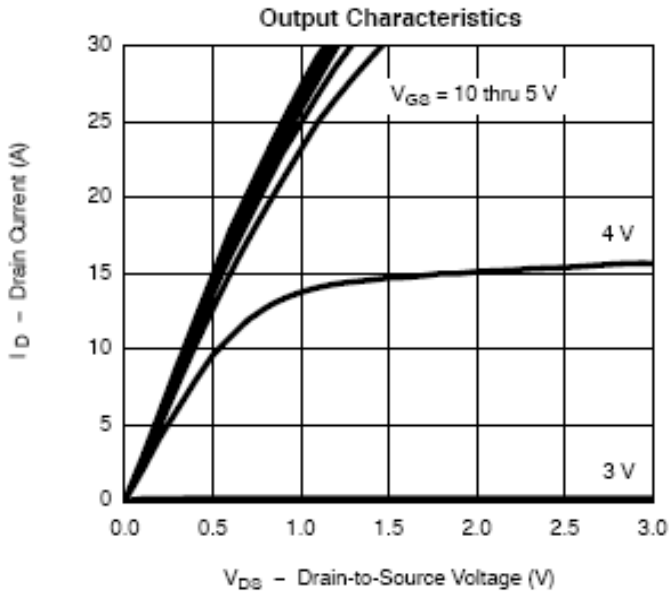
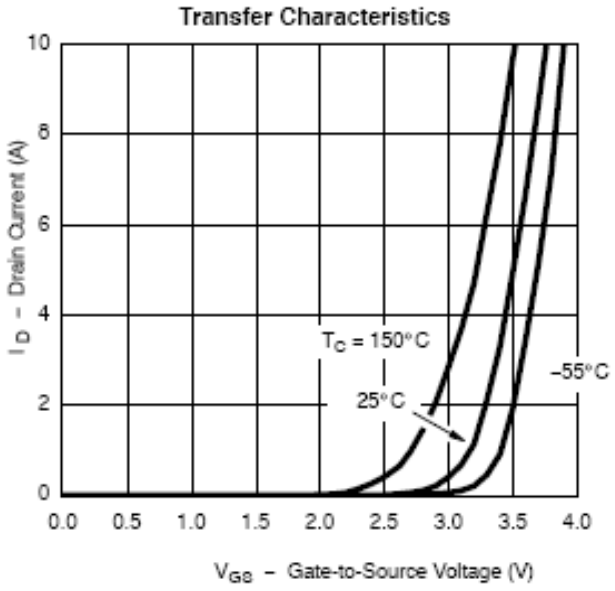
ELECTRICAL CHARACTERISTICS

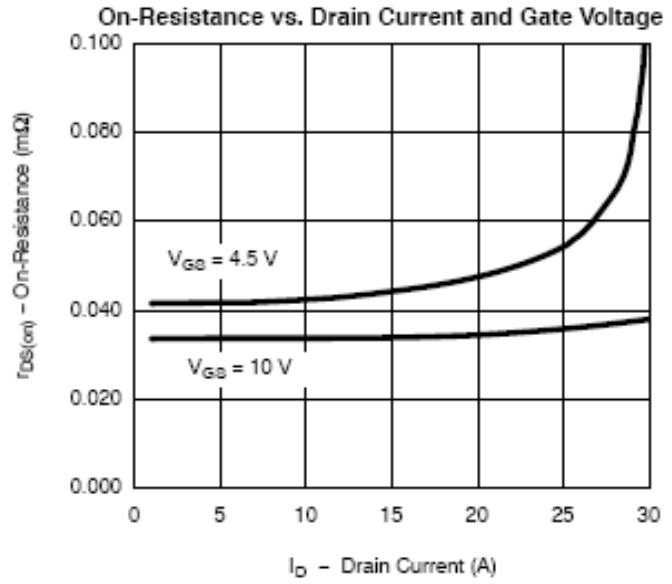
(T_A=25℃ Unless otherwise noted)

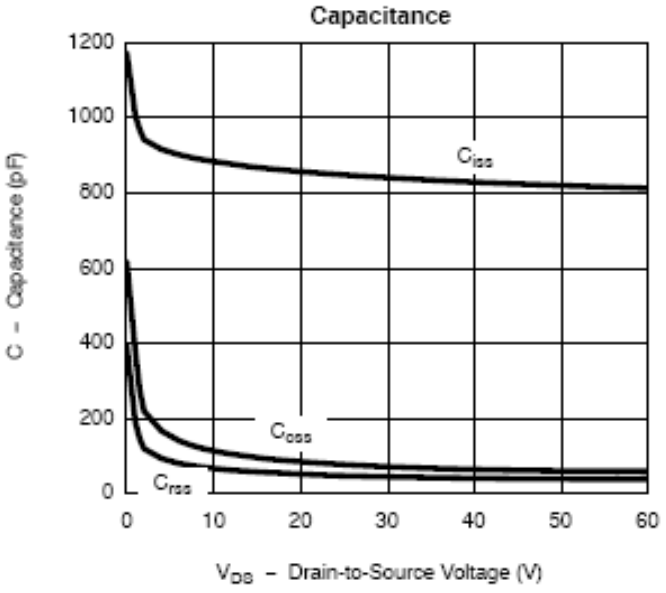
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250uA	60			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250uA	0.8		2.0	
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=48V,V_{GS}=0V			1	uA
		V_{DS}=48V,V_{GS}=0V T_J=55℃			5	
On-State Drain Current	$I_{D(on)}$	V_{DS}≥5V,V_{GS} =10V	30			A
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}= 10V,I_D=8A		0.034	0.038	Ω
		V_{GS}=4.5V,I_D=6A		0.038	0.044	
Forward Transconductance	gfs	V_{DS}=15V,I_D=5.3A		24		S
Diode Forward Voltage	V_{SD}	I_S=2.0A,V_{GS}=0V		0.8	1.2	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=30V,V_{GS}=5V I_D=5.3A		10	15	nC
Gate-Source Charge	Q_{gs}			3.5		
Gate-Drain Charge	Q_{gd}			3.6		
Input Capacitance	C_{iss}	V_{DS}=30V,V_{GS}=0V f=1MHz		890		pF
Output Capacitance	C_{oss}			85		
Reverse Transfer Capacitance	C_{rss}			48		
Turn-On Time	$t_{d(on)}$	V_{DD}=30V,R_L=6.8Ω I_D=4.4A,V_{GEN}=10V R_G=1Ω		10	15	nS
	t_r			12	20	
Turn-Off Time	$t_{d(off)}$			25	35	
	t_f			10	15	

TYPICAL CHARACTERISTICS









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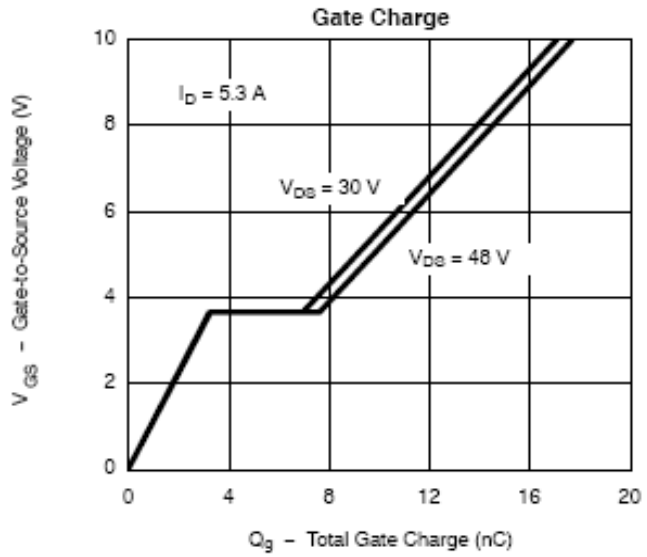

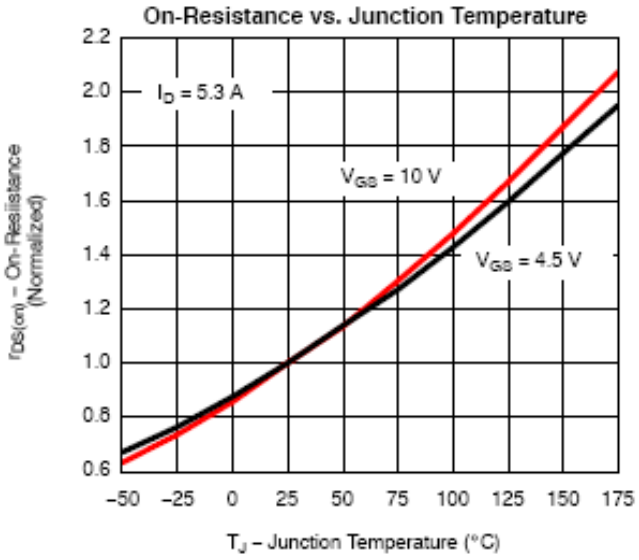

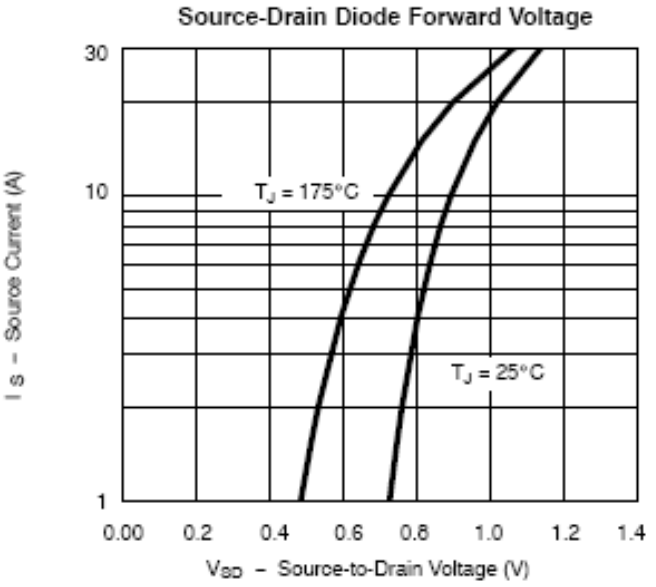

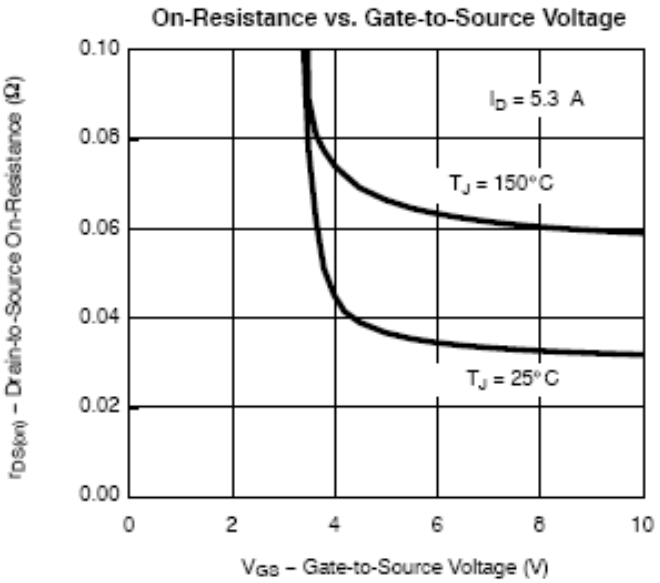

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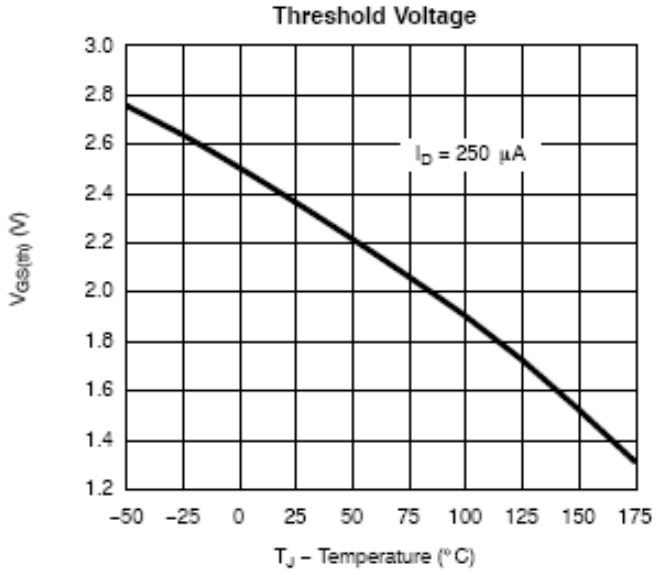

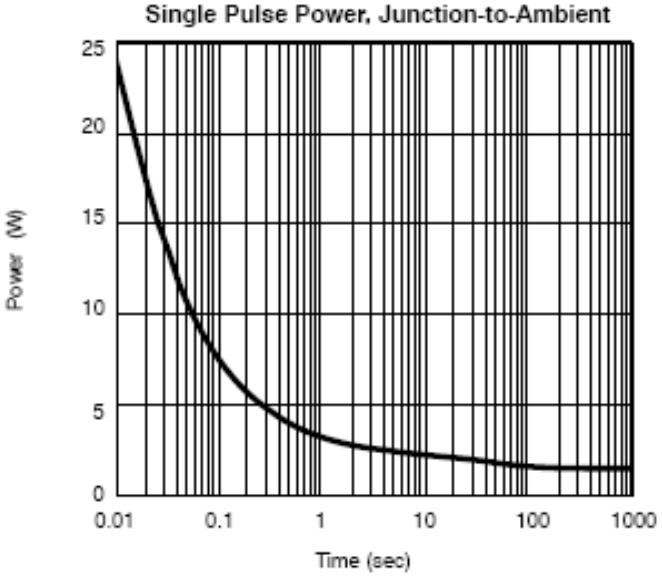

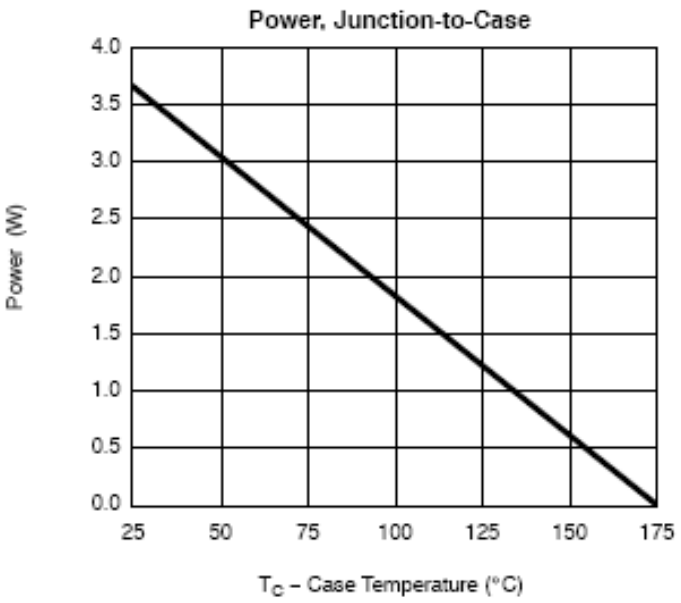

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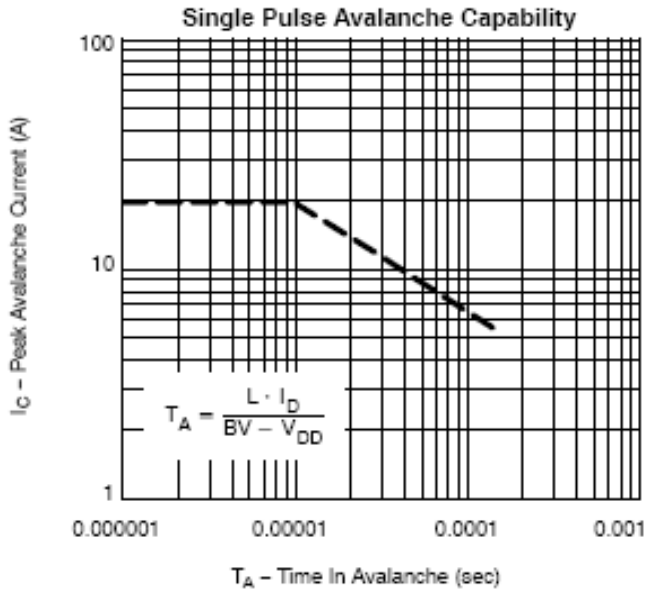

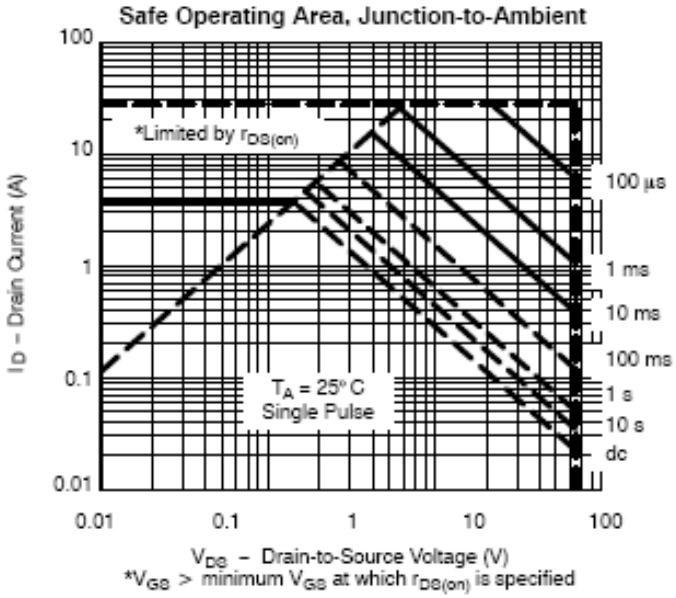

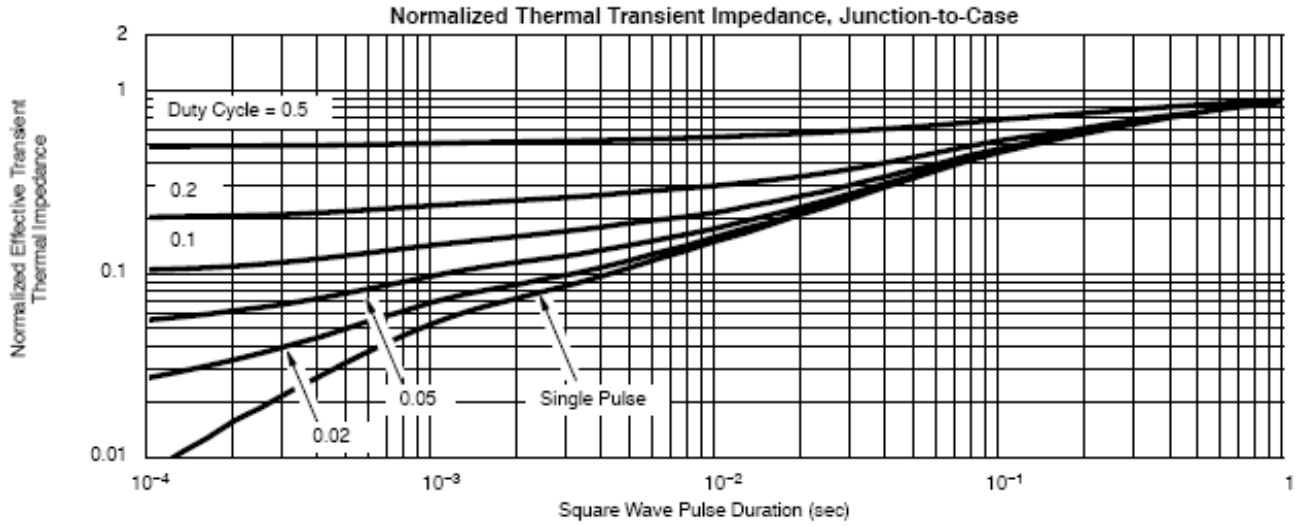

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