SPN9928
N-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPN9928 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 .

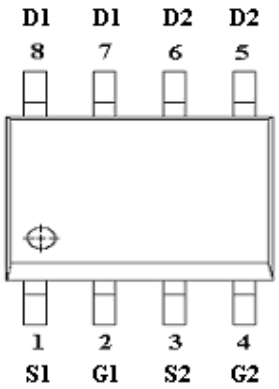
FEATURES

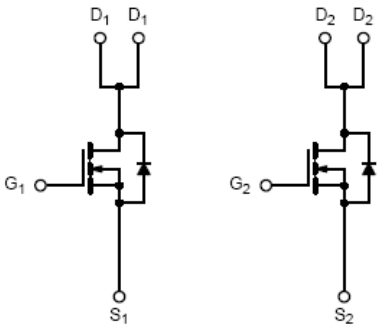
- 20V/6.0A,$R_{DS(ON)}$=25mΩ@V_{GS}=4.5V
- 20V/5.0A,$R_{DS(ON)}$=32mΩ@V_{GS}=2.5V
- 20V/4.0A,$R_{DS(ON)}$=50mΩ@V_{GS}=1.8V
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOP–8 package design

APPLICATIONS

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

PIN CONFIGURATION(SOP–8)





PART MARKING

A : Lot Code
B : Date Code

SPN9928
N-Channel Enhancement Mode MOSFET

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
SPN9928S8RGB	SOP-8	SPN9928

※ SPN9928S8RGB : 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}	20	V
Gate –Source Voltage		V_{GSS}	±12	V
Continuous Drain Current(T_J=150℃)	T_A=25℃	I_D	6.8	A
	T_A=70℃		4.8	
Pulsed Drain Current		I_{DM}	30	A
Continuous Source Current(Diode Conduction)		I_S	1.6	A
Power Dissipation	T_A=25℃	P_D	2.8	W
	T_A=70℃		1.8	
Operating Junction Temperature		T_J	-55/150	℃
Storage Temperature Range		T_{STG}	-55/150	℃
Thermal Resistance-Junction to Ambient		$R_{\theta JA}$	105	℃/W

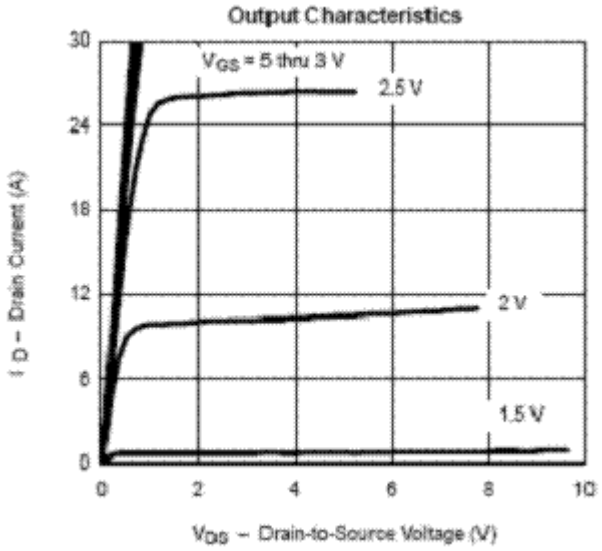
SPN9928
N-Channel Enhancement Mode MOSFET

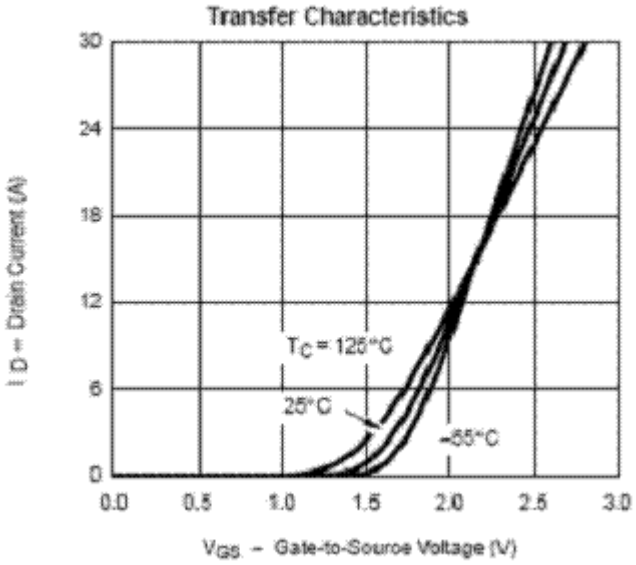
ELECTRICAL CHARACTERISTICS

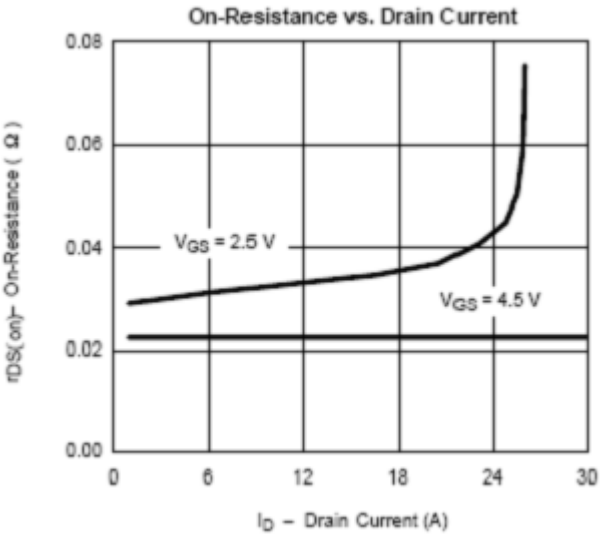
(T_A=25℃ Unless otherwise noted)

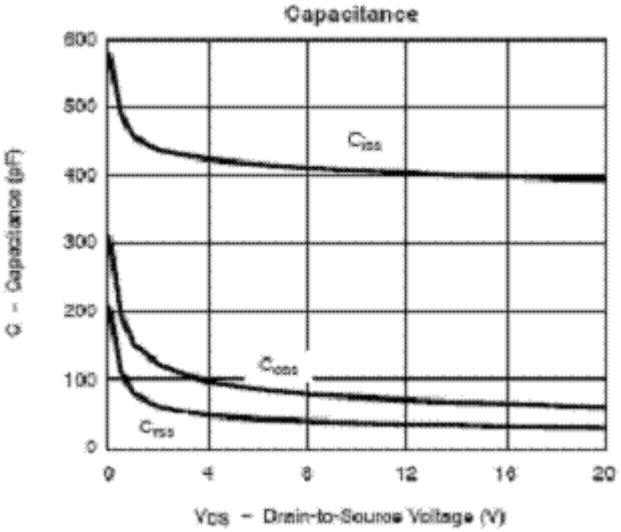
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250uA	20			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250uA	0.5		1.0	
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±12V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V,V_{GS}=0V			1	uA
		V_{DS}=20V,V_{GS}=0V T_J=55℃			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=6.0A		0.023	0.025	Ω
		V_{GS}=2.5V,I_D=5.0A		0.028	0.032	
		V_{GS}=1.8V,I_D=4.0A		0.040	0.050	
Forward Transconductance	gfs	V_{DS}=5V,I_D=-3.6A		10		S
Diode Forward Voltage	V_{SD}	I_S=1.7A,V_{GS}=0V		0.8	1.2	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=10V, V_{GS}=4.5V, I_D=6.0A		2		nC
Gate-Source Charge	Q_{gs}			2.5		
Gate-Drain Charge	Q_{gd}			2.1		
Input Capacitance	C_{iss}	V_{DS}=8V,V_{GS}=0V f=1MHz		575		pF
Output Capacitance	C_{oss}			84		
Reverse Transfer Capacitance	C_{rss}			22		
Turn-On Time	$t_{d(on)}$	V_{DD}=10V,R_L=6Ω I_D≡1.0A,V_{GEN}=4.5V R_G=6Ω		10	14	nS
	t_r			16	20	
Turn-Off Time	$t_{d(off)}$			35	40	
	t_f			3	10	

TYPICAL CHARACTERISTICS

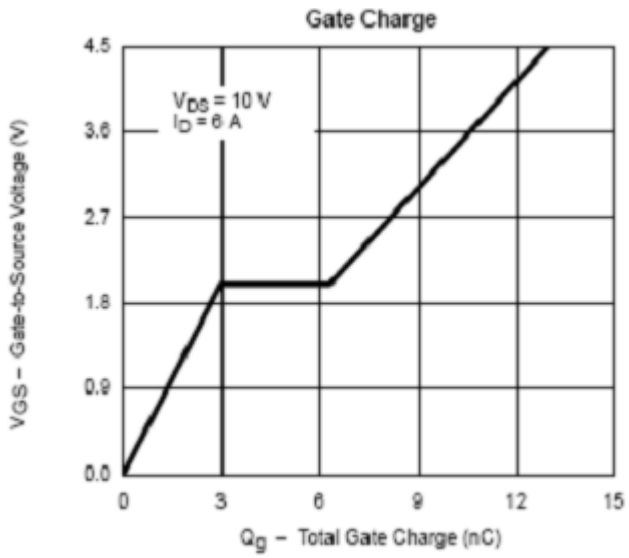


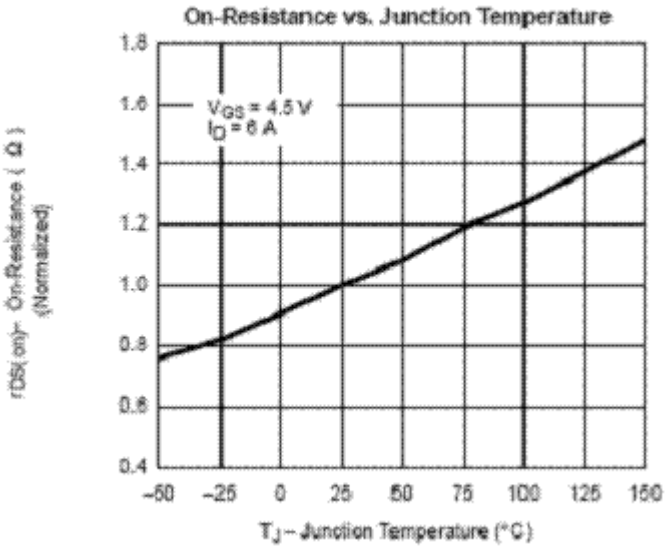


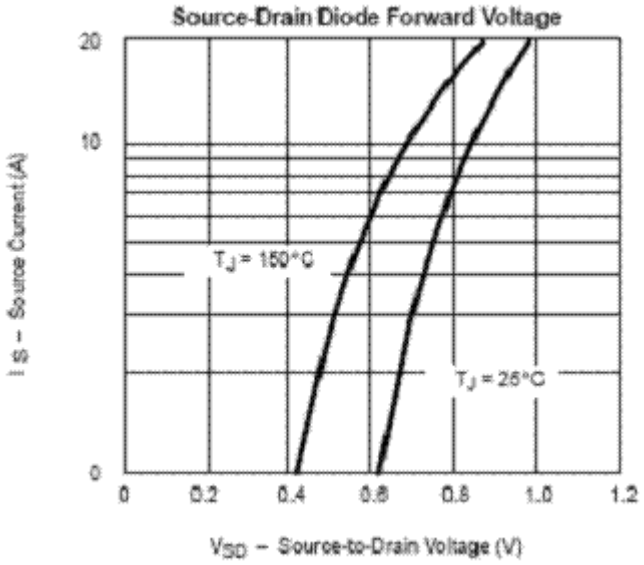


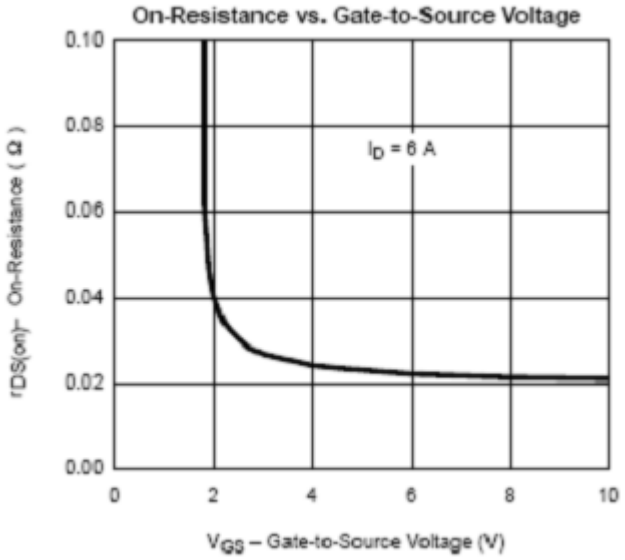


TYPICAL CHARACTERISTICS

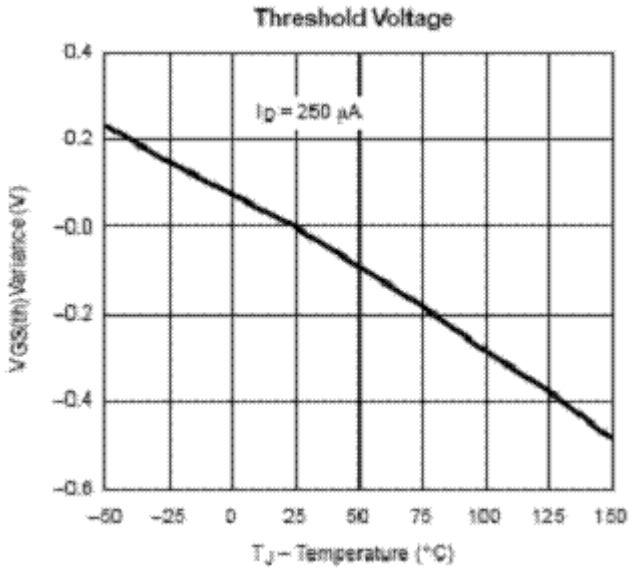


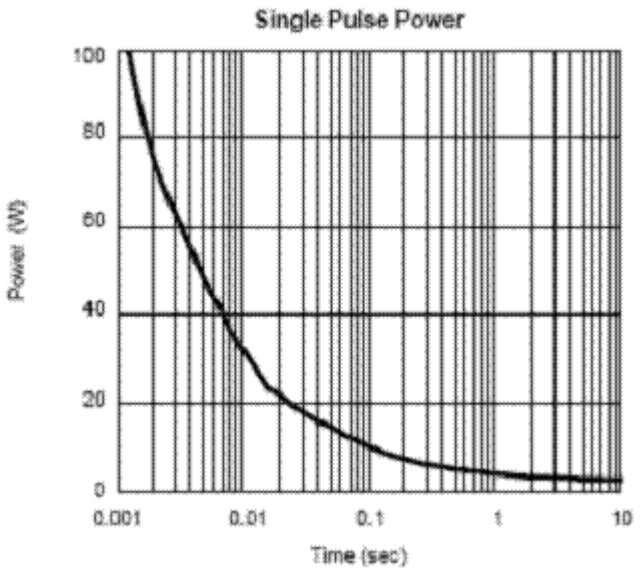


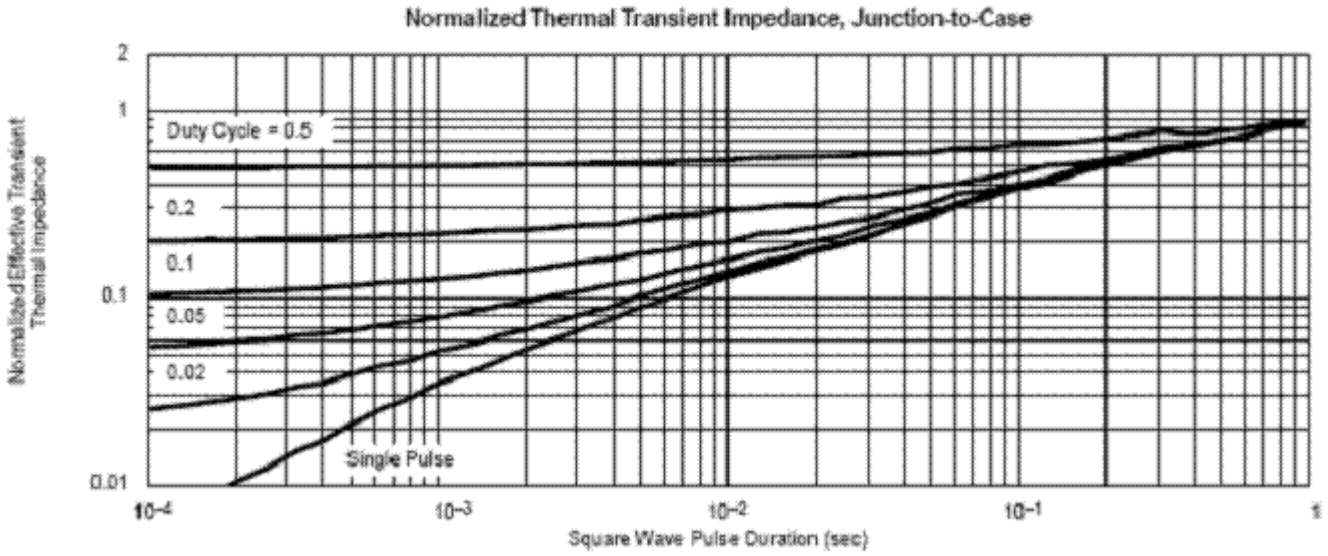




TYPICAL CHARACTERISTICS







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
© http://www.syncpower.com