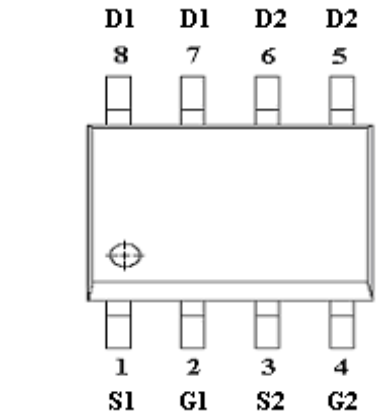
SPN4920
N-Channel Enhancement Mode MOSFET

DESCRIPTION
The SPN4920 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 .

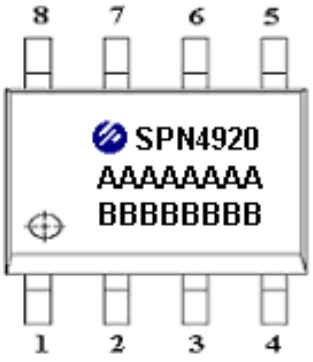
FEATURES
- 30V/7.2A,$R_{DS(ON)}$=28mΩ@V_{GS}=10V
- 30V/6.0A,$R_{DS(ON)}$=36mΩ@V_{GS}=4.5V
- Super high density cell design for extremely low $R_{DS\ (ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOP–8 package design

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

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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
SPN4920S8RGB	SOP-8	SPN4920
SPN4920S8TGB	SOP-8	SPN4920

※ SPN4920S8RGB : 13” Tape Reel ; Pb – Free ; Halogen – Free
※ SPN4920S8TGB : Tube ; Pb – Free ; Halogen – Free

ABSOULTE MAXIMUM RATINGS

(T_A=25℃ Unless otherwise noted)

Parameter		Symbol	Typical	Unit
Drain-Source Voltage		V_{DSS}	30	V
Gate –Source Voltage		V_{GSS}	±20	V
Continuous Drain Current(T_J=150℃)	T_A=25℃	I_D	7.2	A
	T_A=70℃		6.0	
Pulsed Drain Current		I_{DM}	35	A
Continuous Source Current(Diode Conduction)		I_S	1.7	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		$R_{\theta JA}$	65	℃/W

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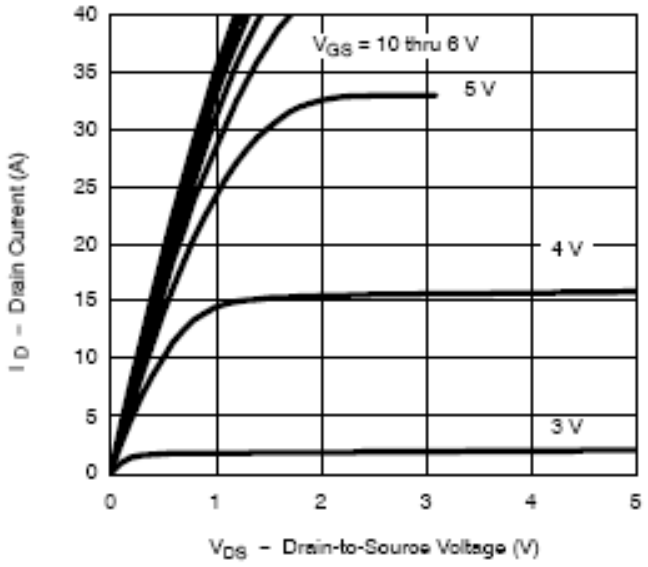
ELECTRICAL CHARACTERISTICS

(T_A=25℃ Unless otherwise noted)

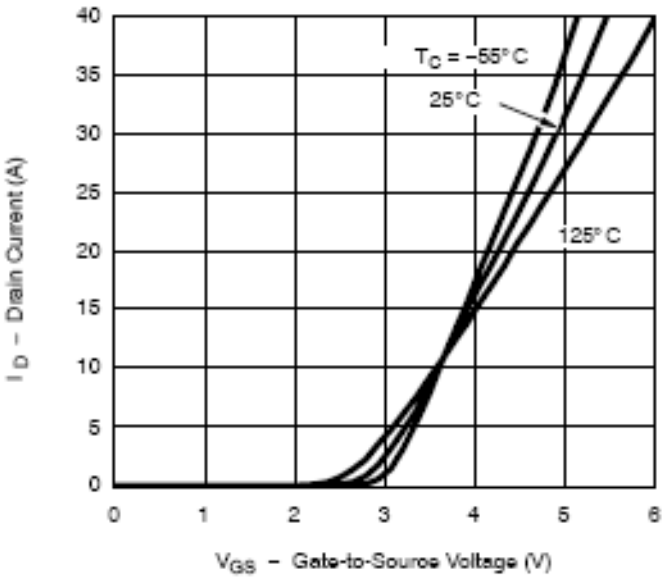
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250uA	30			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250uA	1.0		3.0	
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V,V_{GS}=0V			1	uA
		V_{DS}=30V,V_{GS}=0V T_J=85℃			5	
On-State Drain Current	$I_{D(on)}$	V_{DS}≥5V,V_{GS} =10V	20			A
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}= 10V,I_D=7.2A		0.022	0.028	Ω
		V_{GS}=4.5V,I_D=6.0A		0.030	0.036	
Forward Transconductance	gfs	V_{DS}=15V,I_D=6.2A		13		S
Diode Forward Voltage	V_{SD}	I_S=2.3A,V_{GS} =0V		0.8	1.2	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=15V,V_{GS}=10V I_D= 7.2A		30	50	nC
Gate-Source Charge	Q_{gs}			7.5		
Gate-Drain Charge	Q_{gd}			3.5		
Input Capacitance	C_{iss}	V_{DS}=15V_{GS}=0V f=1MHz		450		pF
Output Capacitance	C_{oss}			240		
Reverse Transfer Capacitance	C_{rss}			38		
Turn-On Time	$t_{d(on)}$	V_{DD}=15V,R_L=15Ω I_D≡1.0A,V_{GEN}=10V R_G=6Ω		12	20	nS
	t_r			10	20	
Turn-Off Time	$t_{d(off)}$			60	90	
	t_f			15	30	

TYPICAL CHARACTERISTICS

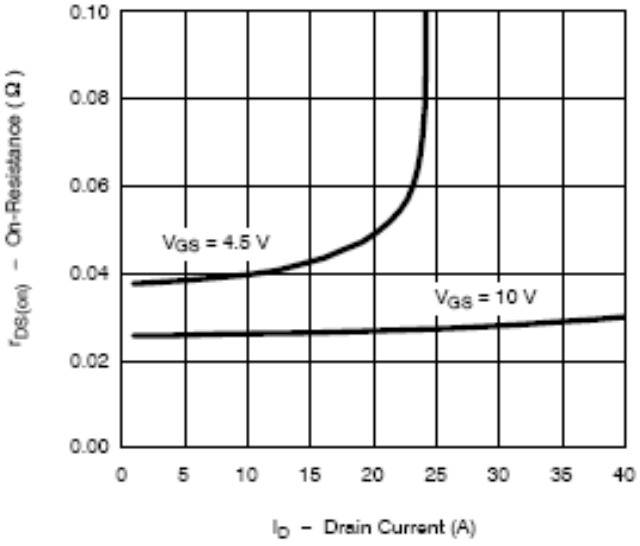
Output Characteristics



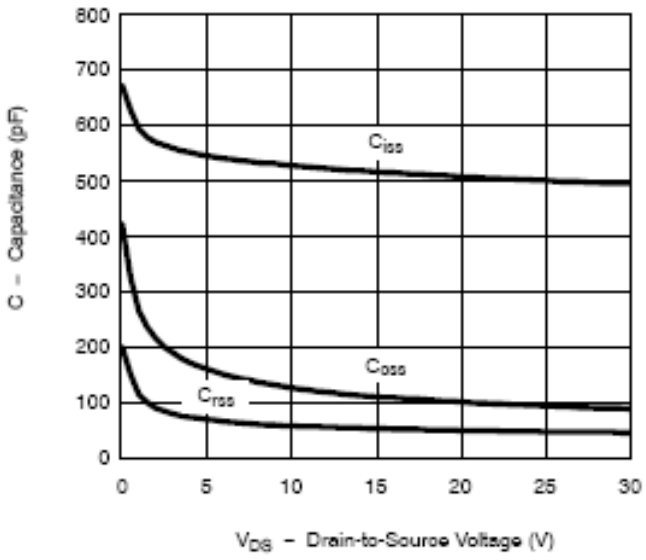
Transfer Characteristics



On-Resistance vs. Drain Current

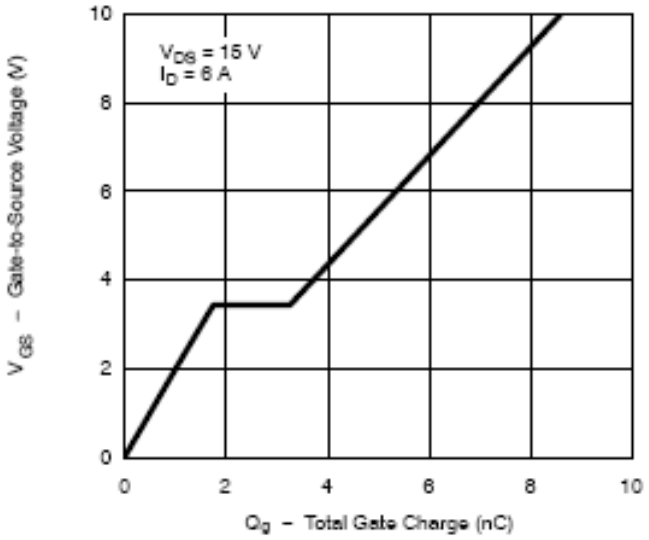


Capacitance

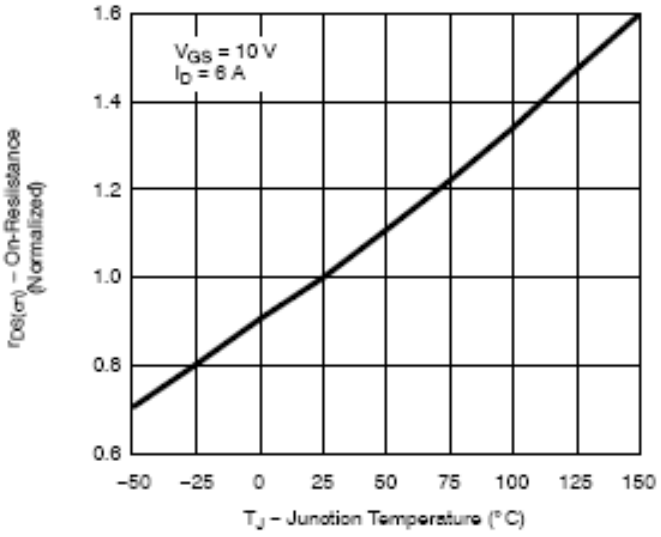


TYPICAL CHARACTERISTICS

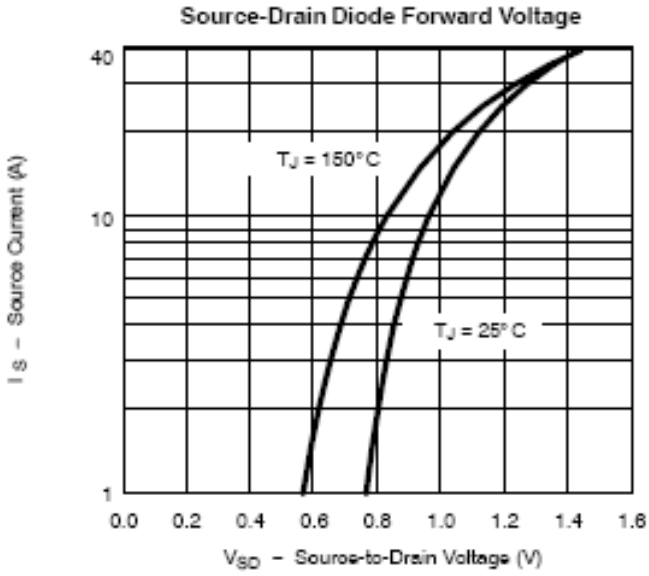
Gate Charge



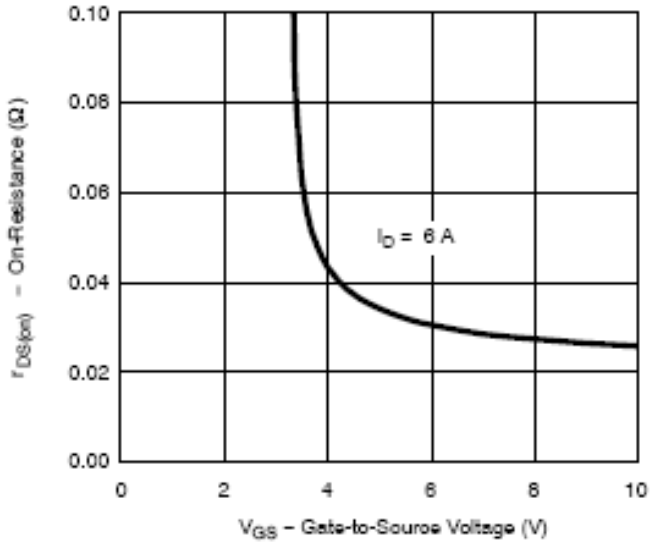
On-Resistance vs. Junction Temperature



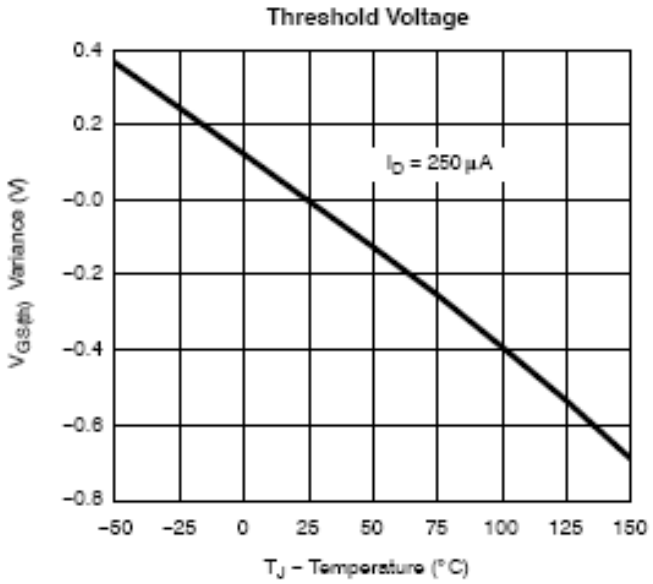
Source-Drain Diode Forward Voltage

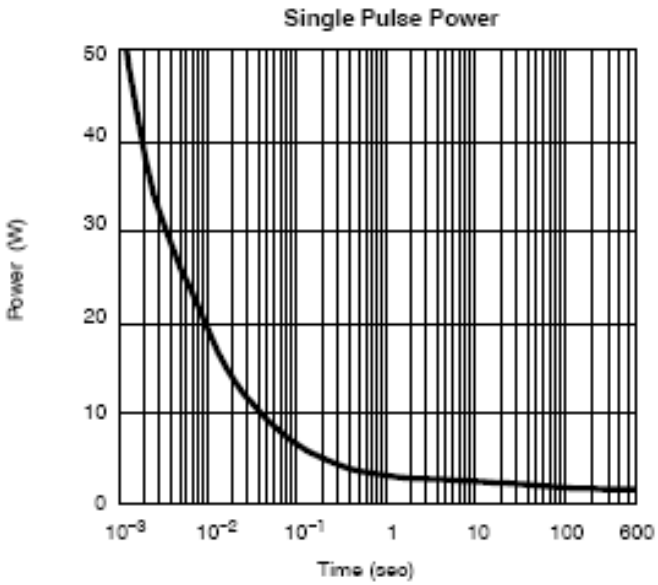


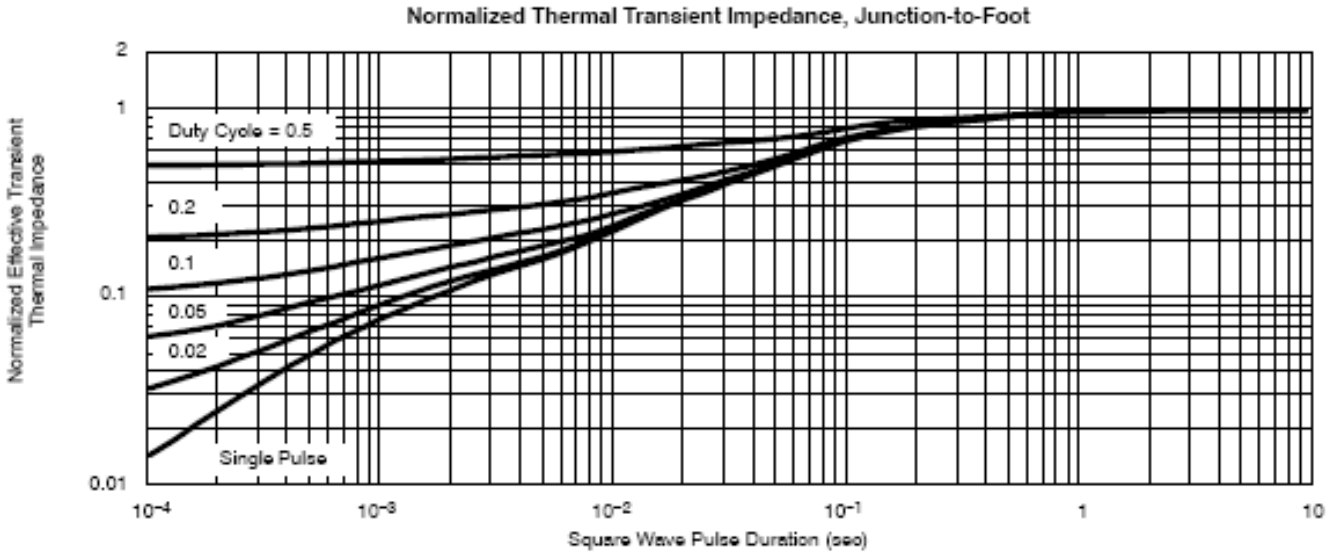
On-Resistance vs. Gate-to-Source Voltage



TYPICAL CHARACTERISTICS







SYNC Power Corporation
7F-2, No.3-1, Park Street
NanKang District (NKSP), Taipei, Taiwan, 115, R.O.C
Phone: 886-2-2655-8178
Fax: 886-2-2655-8468
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