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.

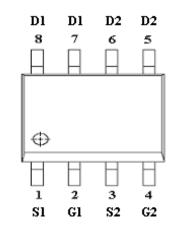
FEATURES

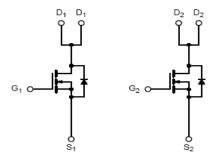
- 30V/7.2A,RDS(ON)= $28m\Omega@V$ GS=10V
- 30V/6.0A,RDS(ON)= $36m\Omega$ @VGS=4.5V
- ◆ Super high density cell design for extremely low RDS (ON)
- Exceptional on-resistance and maximum DC current capability
- ♦ SOP-8 package design

APPLICATIONS

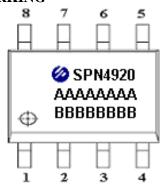
- Power Management in Note book
- Portable Equipment
- Battery Powered System
- DC/DC Converter
- Load Switch
- DSC
- LCD Display inverter

PIN CONFIGURATION(SOP-8)





PART MARKING



A: Lot Code B: Date Code

PIN	DES	CR	IPT	ON

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

ABSOULTE MAXIMUM RATINGS

(Ta=25°C Unless otherwise noted)

Parameter		Symbol	Typical	Unit	
Drain-Source Voltage		Vdss	30	V	
Gate –Source Voltage		VGSS	±20	V	
Continuous Dusin Comment(Tr-1509C)	Ta=25°C	In	7.2	Δ	
Continuous Drain Current(T _J =150°C)	Ta=70°C	- Id	6.0	A	
Pulsed Drain Current	IDМ	35	A		
Continuous Source Current(Diode Conduction)		Is	1.7	A	
Down Dissipation	Ta=25°C	D _m	2.8	W	
Power Dissipation	Ta=70°C	PD	1.8		
Operating Junction Temperature		TJ	-55/150	°C	
Storage Temperature Range		Tstg	-55/150	°C	
Thermal Resistance-Junction to Ambient		RθJA	65	°C/W	

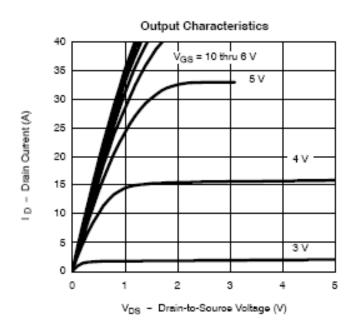
[※] SPN4920S8TGB: Tube; Pb − Free; Halogen − Free

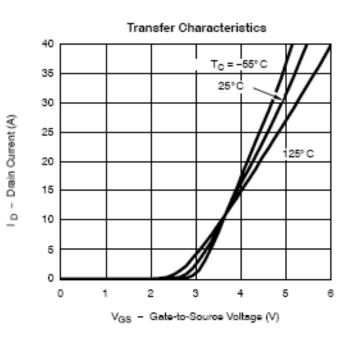
ELECTRICAL CHARACTERISTICS

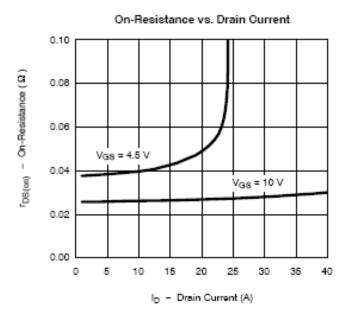
(Ta=25°C Unless otherwise noted)

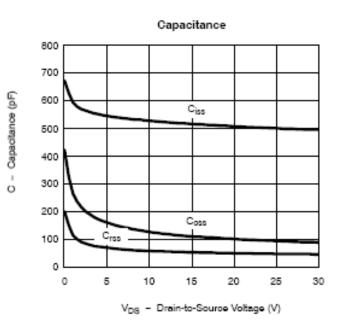
Parameter	Symbol	Conditions	Min.	Тур	Max.	Unit
Static			<u> </u>			
Drain-Source Breakdown Voltage	V(BR)DSS	VGS=0V,ID=250uA	30			V
Gate Threshold Voltage	VGS(th)	VDS=VGS,ID=250uA	1.0		3.0	
Gate Leakage Current	Igss	VDS=0V,VGS=±20V			±100	nA
		VDS=30V,VGS=0V			1	uA
Zero Gate Voltage Drain Current	Idss	V _{DS} =30V,V _{GS} =0V T _J =85°C			5	
On-State Drain Current	ID(on)	VDS≥5V,VGS =10V	20			A
Drain-Source On-Resistance	Dra()	Vgs= 10V,ID=7.2A		0.022	0.028	Ω
Drain-Source On-Resistance	RDS(on)	Vgs=4.5V,Id=6.0A		0.030	0.036	
Forward Transconductance	gfs	VDS=15V,ID=6.2A		13		S
Diode Forward Voltage	Vsd	Is=2.3A,VGS =0V		0.8	1.2	V
Dynamic						
Total Gate Charge	Qg			30	50	nC
Gate-Source Charge	Qgs	V _{DS} =15V,V _{GS} =10V I _D = 7.2A		7.5		
Gate-Drain Charge	Qgd	1D- 7.2A		3.5		
Input Capacitance	Ciss			450		pF
Output Capacitance	Coss	V _{DS} =15V _{GS} =0V f=1MHz		240		
Reverse Transfer Capacitance	Crss			38		
The second of Times	td(on)			12	20	
Turn-On Time	tr	VDD=15V,RL=15Ω		10	20	nS
T. OCCT.	td(off)	$I_D=1.0A,V_{GEN}=10V$ $R_G=6\Omega$		60	90	
Turn-Off Time	tf			15	30	

TYPICAL CHARACTERISTICS

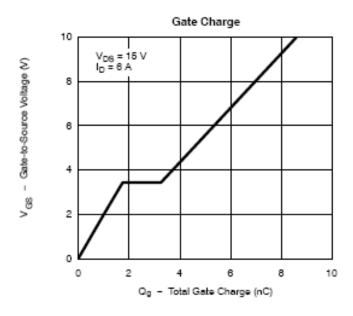


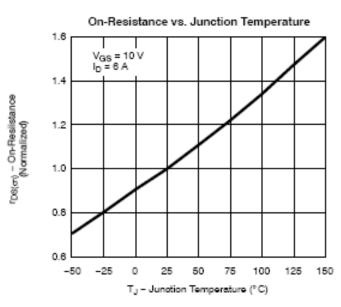


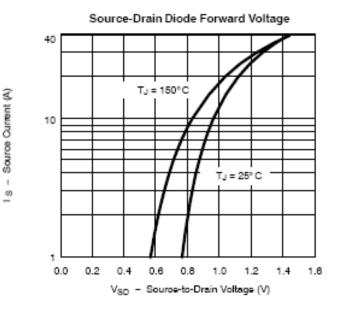


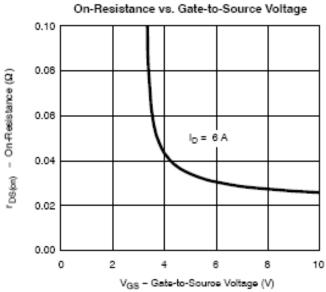


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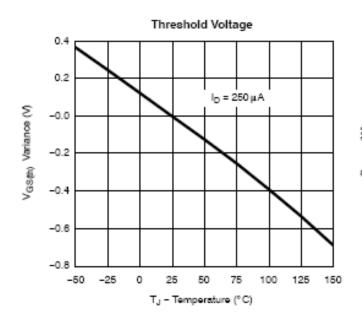


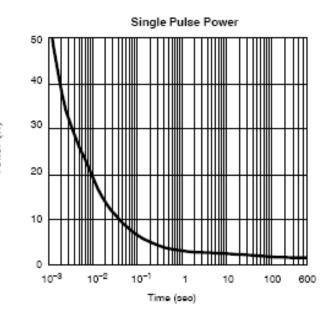




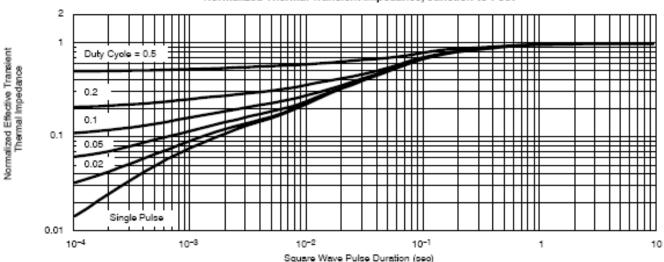


TYPICAL CHARACTERISTICS





Normalized Thermal Transient Impedance, Junction-to-Foot



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