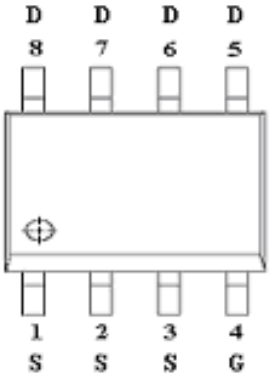
SPN4428
N-Channel Enhancement Mode MOSFET

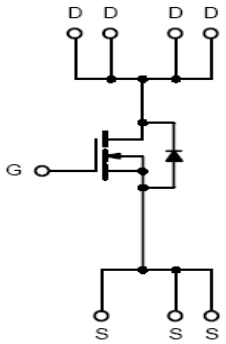
DESCRIPTION
The SPN4428 is the N-Channel logic enhancement mode power field effect transistors are produced using high cell density , DMOS trench technology.
This high density process is especially tailored to minimize on-state resistance.
These devices are particularly suited for low voltage application , notebook computer power management and other battery powered circuits where high-side switching .

FEATURES
- 30V/14A,$R_{DS(ON)}$=20mΩ@V_{GS}=4.5V
- 30V/7.0A,$R_{DS(ON)}$=28mΩ@V_{GS}=2.5V
- 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

SPN4428
N-Channel Enhancement Mode MOSFET

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
SPN4428S8RGB	SOP-8	SPN4428

※ SPN4428S8RGB : 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}	±20	V
Continuous Drain Current(T_J=150℃)	T_A=25℃	I_D	6.8	A
	T_A=70℃		5.6	
Pulsed Drain Current		I_{DM}	30	A
Continuous Source Current(Diode Conduction)		I_S	2.3	A
Power Dissipation	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

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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	20			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250uA	0.5		1.2	
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=16V,V_{GS}=0V			1	uA
		V_{DS}=16V,V_{GS}=0V T_J=85℃			5	
On-State Drain Current	$I_{D(on)}$	V_{DS}≥5V,V_{GS} =10V	25			A
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}= 10V,I_D=14A		0.015	0.020	Ω
		V_{GS}=4.5V,I_D=7.0A		0.024	0.028	
Forward Transconductance	gfs	V_{DS}=15V,I_D=6.2A		30		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}=4.5V I_D= 14A		9.8		nC
Gate-Source Charge	Q_{gs}			2.1		
Gate-Drain Charge	Q_{gd}			3		
Input Capacitance	C_{iss}	V_{DS}=15, V_{GS}=0V f=1MHz		772		pF
Output Capacitance	C_{oss}			83		
Reverse Transfer Capacitance	C_{rss}			79		
Turn-On Time	$t_{d(on)}$	V_{DD}=10V, I_D≡14A, V_{GS}=4.5V, R_G=3.3Ω		4		nS
	t_r			12.5		
Turn-Off Time	$t_{d(off)}$			20		
	t_f			8		

TYPICAL CHARACTERISTICS

Fig. 1 Typical Output Characteristics

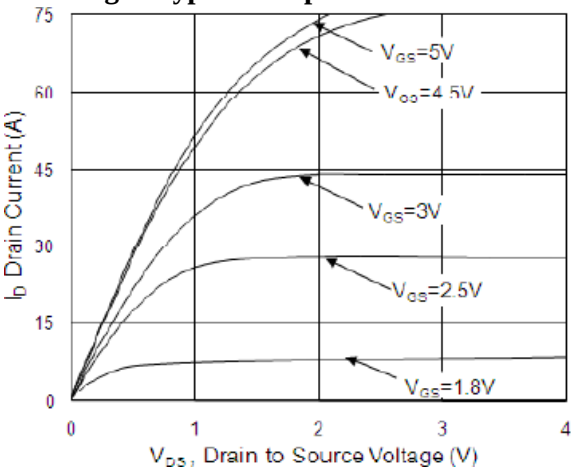
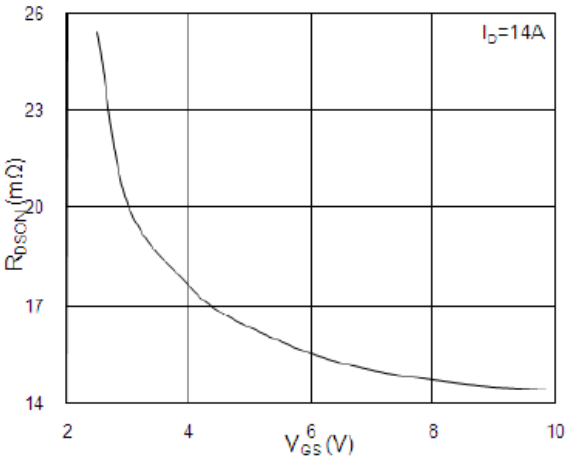
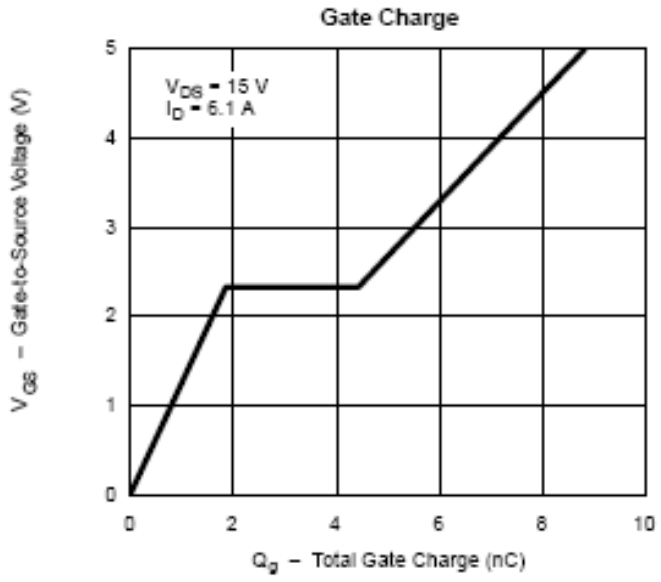
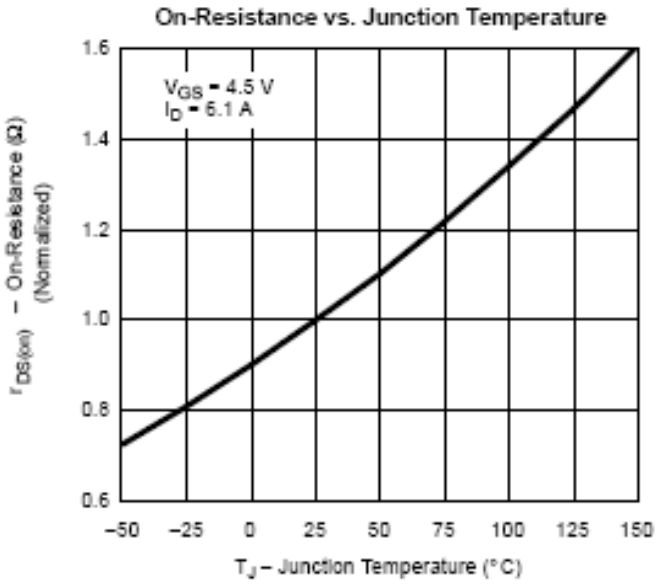


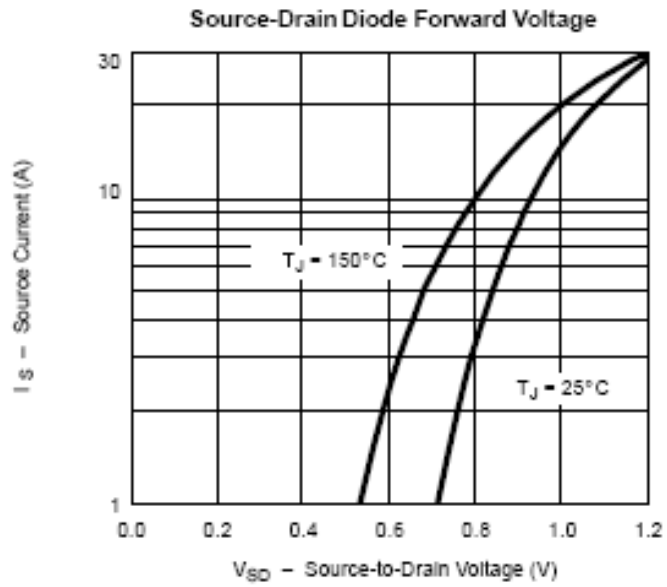
Fig. 2 On-Resistance vs Gate Voltage

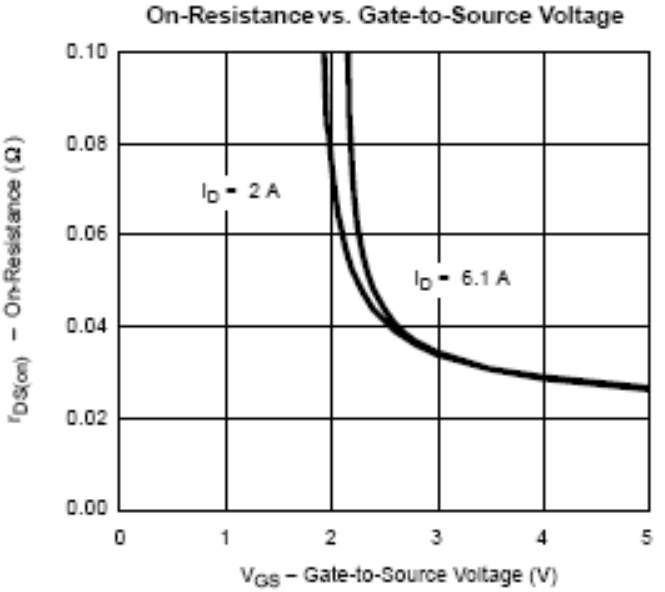


TYPICAL CHARACTERISTICS









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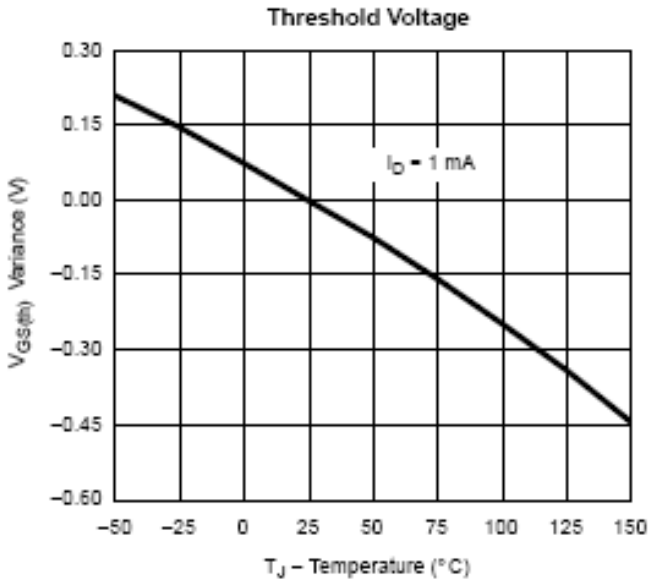

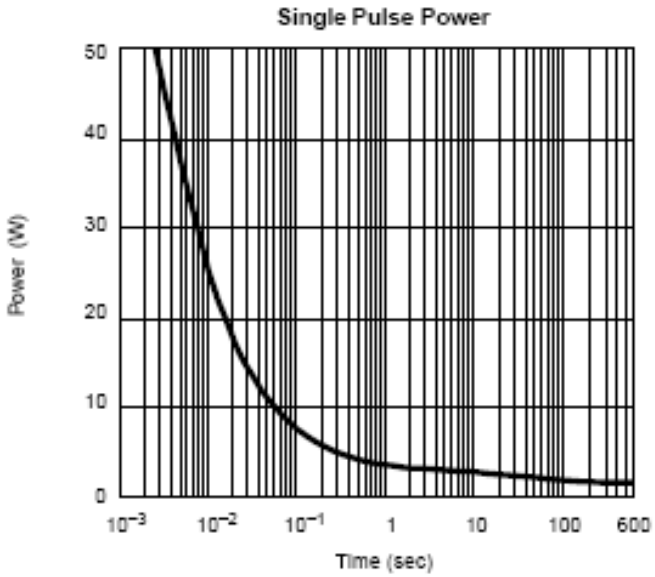

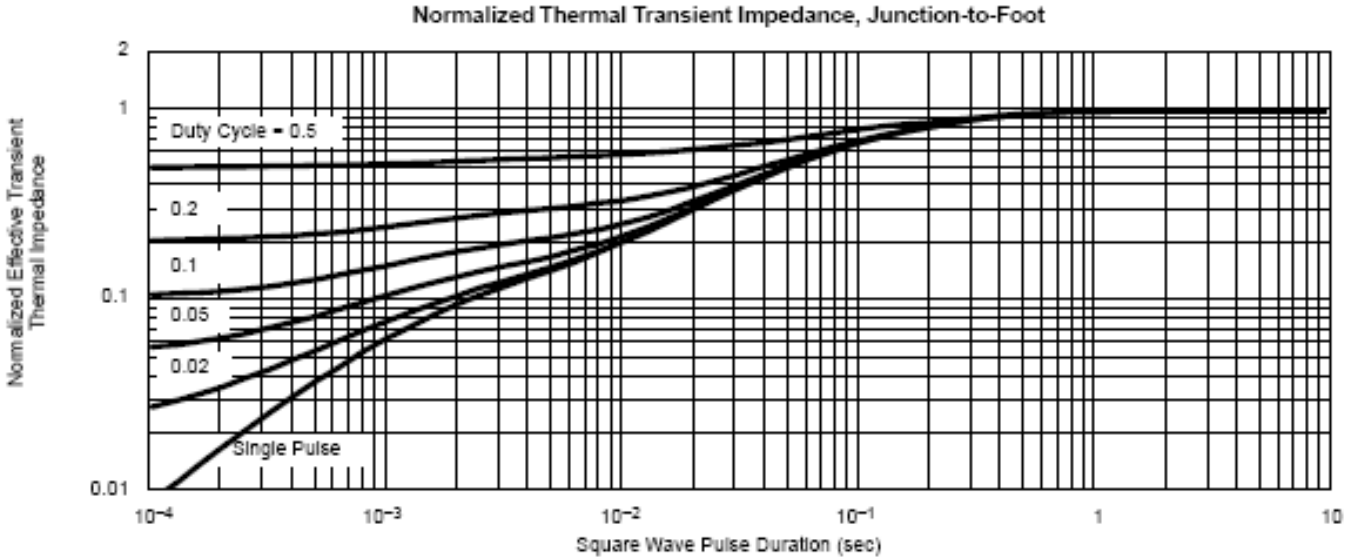

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