SPN3448
N-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPN3448 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 such as cellular phone and notebook computer power management and other battery powered circuits, and low in-line power loss are needed in a very small outline surface mount package.

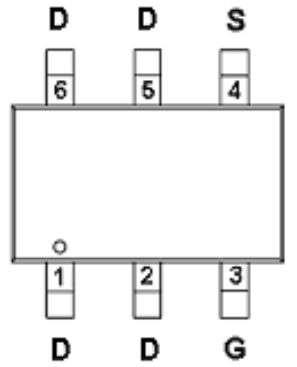
APPLICATIONS

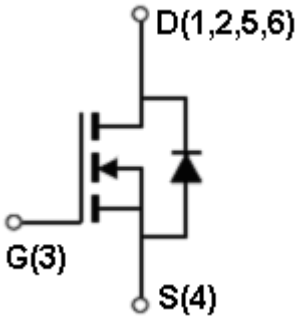
- Power Management in Note book
- Portable Equipment
- Battery Powered System
- DC/DC Converter
- Load Switch
- DSC
- LCD Display inverter

FEATURES

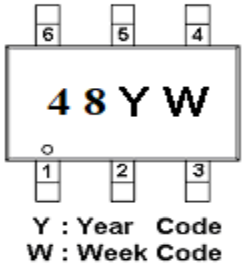
- 20V/4.0A,$R_{DS(ON)}$=26mΩ@V_{GS}=4.5V
- 20V/3.0A,$R_{DS(ON)}$=35mΩ@V_{GS}=2.5V
- 20V/2.0A,$R_{DS(ON)}$=50mΩ@V_{GS}=1.8V
- Super high density cell design for extremely low $R_{DS\ (ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-23-6L package design

PIN CONFIGURATION(SOT–23-6L)





PART MARKING



Y : Year Code
W : Week Code

SPN3448
N-Channel Enhancement Mode MOSFET

PIN DESCRIPTION

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

ORDERING INFORMATION

Part Number	Package	Part Marking
SPN3448S26RGB	SOT-23-6L	48

※ Week Code : A ~ Z(1 ~ 26) ; a ~ z(27 ~ 52)
※ SPN3448S26RGB : 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	150	℃
Storage Temperature Range		T_{STG}	-55/150	℃
Thermal Resistance-Junction to Ambient		$R_{\theta JA}$	105	℃/W

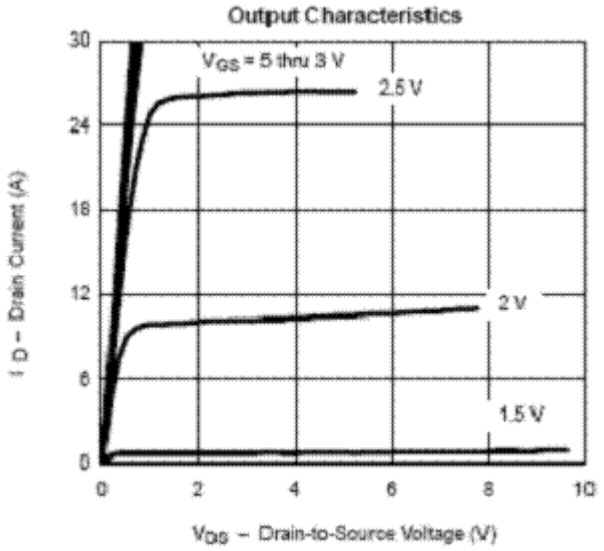
SPN3448
N-Channel Enhancement Mode MOSFET

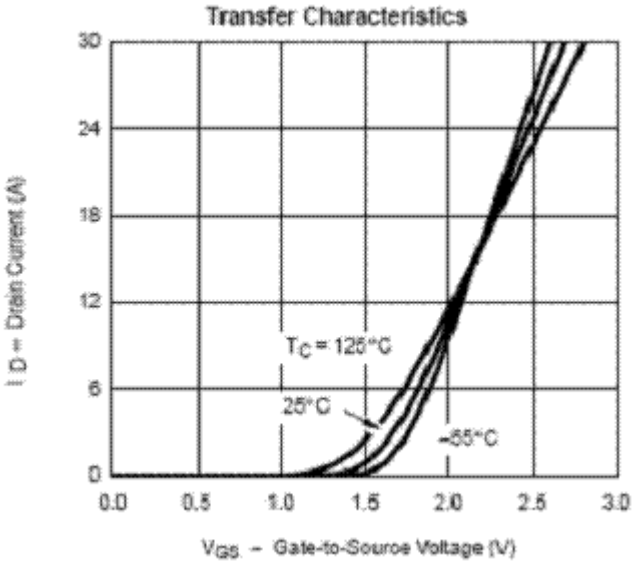
ELECTRICAL CHARACTERISTICS

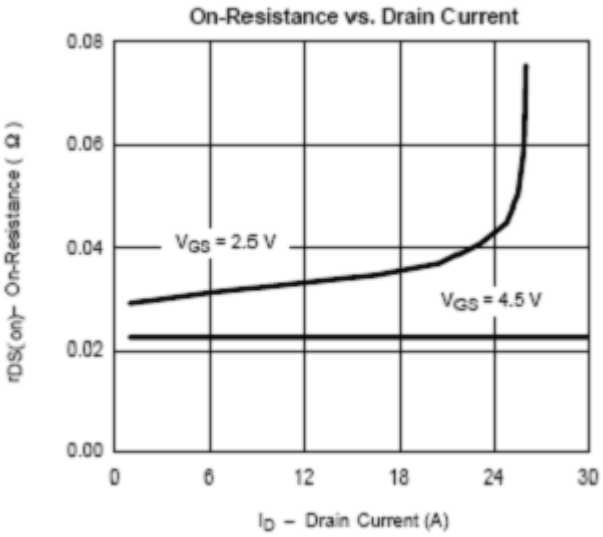
(T_A=25℃ Unless otherwise noted)

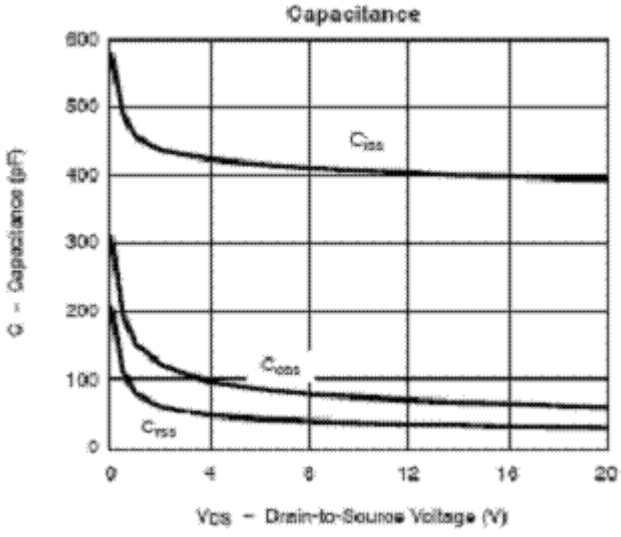
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250uA	20			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250uA	0.4		1.0	
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±12V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=16V,V_{GS}=0V			1	uA
		V_{DS}=16V,V_{GS}=0V T_J=55℃			10	
On-State Drain Current	$I_{D(on)}$	V_{DS}≦4.5V,V_{GS}=5V	15			A
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=4.5V,I_D=4.0A			26	mΩ
		V_{GS}=2.5V,I_D=3.0A			35	
		V_{GS}=1.8V,I_D=2.0A			50	
Forward Transconductance	gfs	V_{DS}=5V,I_D=3.5A		10		S
Diode Forward Voltage	V_{SD}	I_S=1.0A,V_{GS}=0V			1.0	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=15V,V_{GS}=4.5V I_D=4.0A		8.6		nC
Gate-Source Charge	Q_{gs}			1.37		
Gate-Drain Charge	Q_{gd}			2.3		
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,I_D=3.0A, V_{GEN}=4.5V R_G=3.3Ω		5.2		nS
	t_r			34		
Turn-Off Time	$t_{d(off)}$			23		
	t_f			9.2		

TYPICAL CHARACTERISTICS

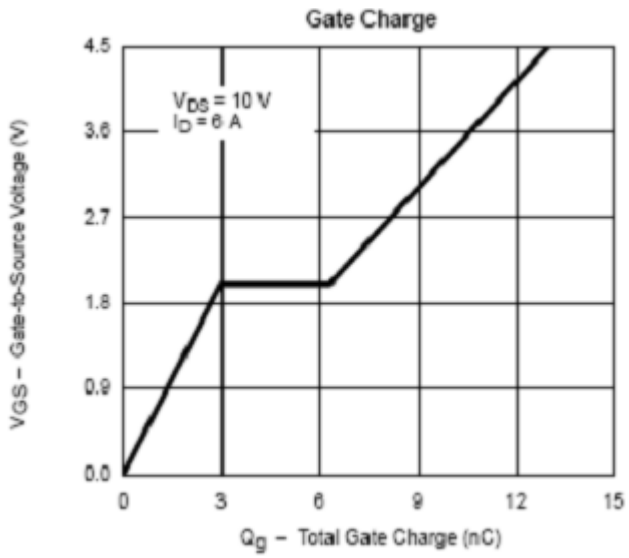


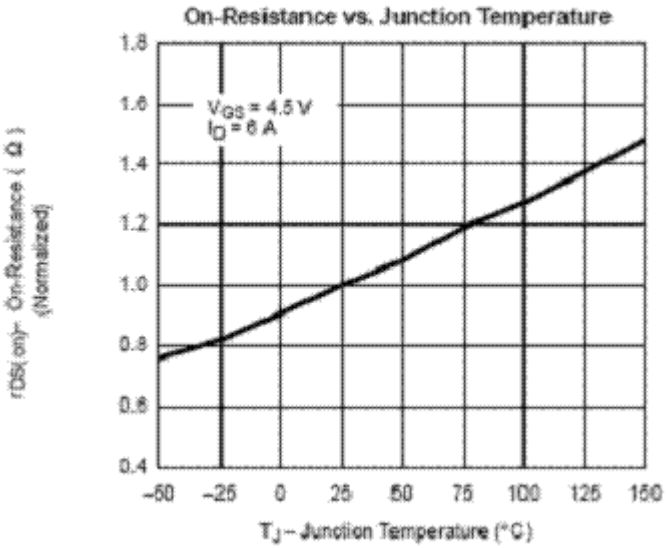


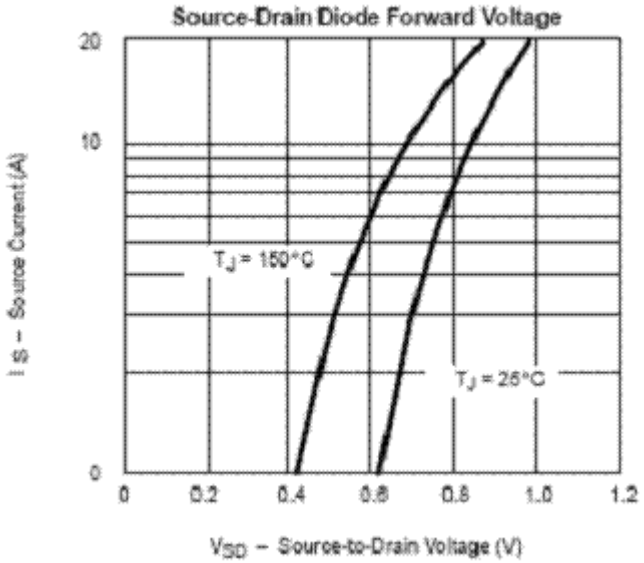


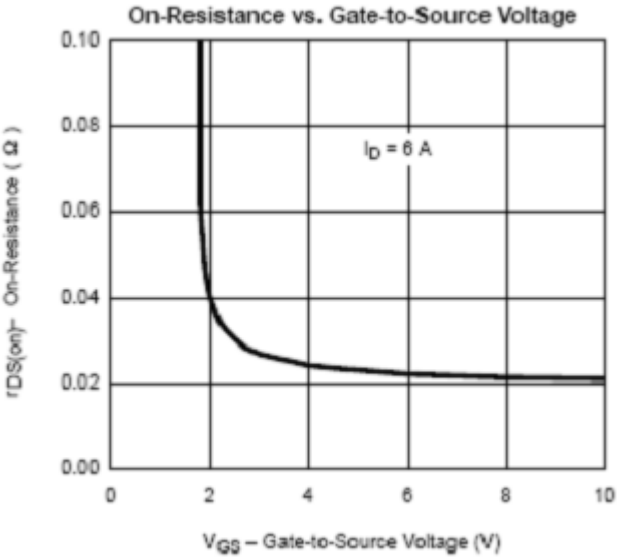


TYPICAL CHARACTERISTICS

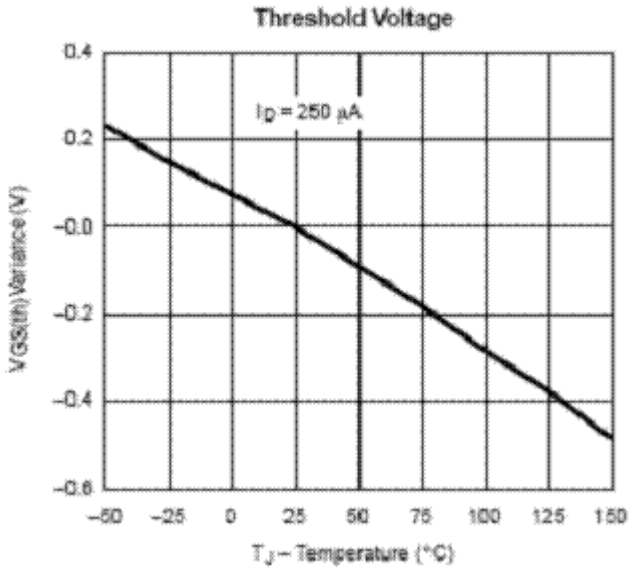


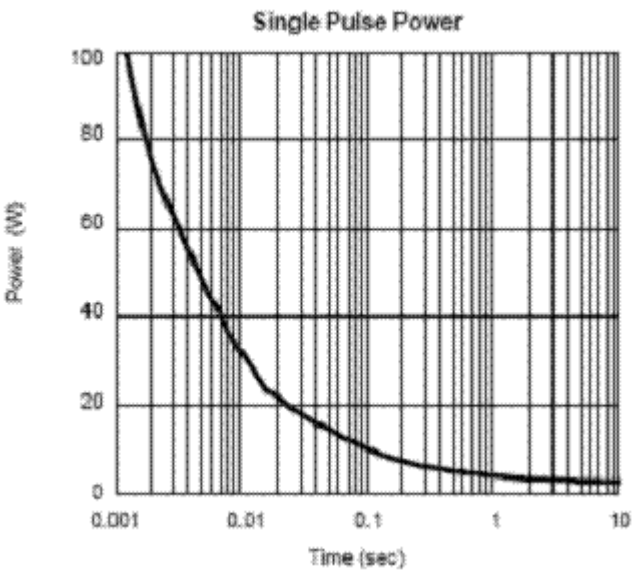


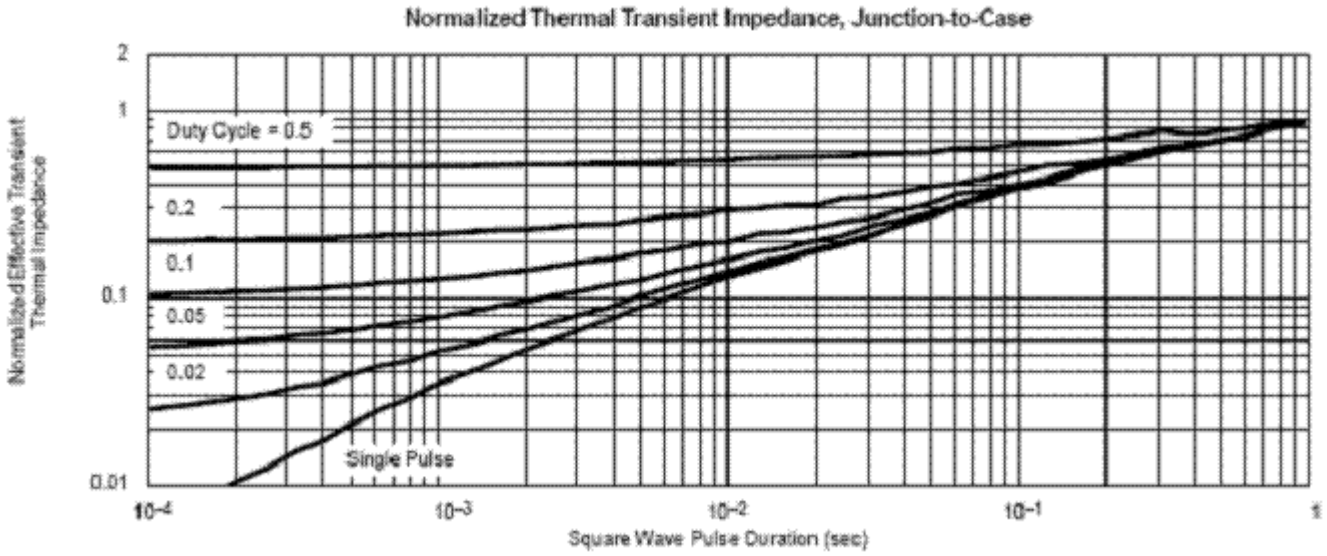




TYPICAL CHARACTERISTICS







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