



SPN8460

N-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPN8460 is the N-Channel logic enhancement mode power field effect transistor which is 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 small outline surface mount package.

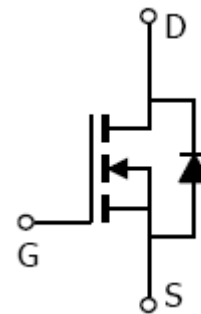
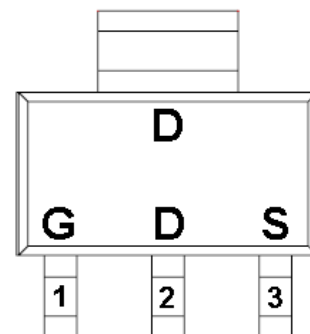
FEATURES

- ◆ 60V/2.5A, $R_{DS(ON)}=120m\Omega@V_{GS}=10V$
- ◆ 60V/2.0A, $R_{DS(ON)}=130m\Omega@V_{GS}=4.5V$
- ◆ Super high density cell design for extremely low $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ SOT-223 package design

APPLICATIONS

- Power Tool
- DC/DC Converter
- Load Switch

PIN CONFIGURATION(SOT-223)



PART MARKING



Y : Year Code
W : Week Code



SPN8460

N-Channel Enhancement Mode MOSFET

PIN DESCRIPTION

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

ORDERING INFORMATION

Part Number	Package	Part Marking
SPN8460S22RGB	SOT-223	8460

※ SPN8460S22RGB : Tape Reel ; Pb – Free ; Halogen – Free

ABSOLUTE MAXIMUM RATINGS

($T_A=25^{\circ}\text{C}$ Unless otherwise noted)

Parameter	Symbol	Typical	Unit	
Drain-Source Voltage	V_{DSS}	60	V	
Gate –Source Voltage	V_{GSS}	± 20	V	
Continuous Drain Current($T_J=150^{\circ}\text{C}$)	I_D	$T_A=25^{\circ}\text{C}$	4	A
		$T_A=70^{\circ}\text{C}$	2.8	
Pulsed Drain Current	I_{DM}	25	A	
Continuous Source Current(Diode Conduction)	I_S	2.5	A	
Power Dissipation	P_D	$T_A=25^{\circ}\text{C}$	3	W
		$T_A=70^{\circ}\text{C}$	1.1	
Operating Junction Temperature	T_J	150	$^{\circ}\text{C}$	
Storage Temperature Range	T_{STG}	-55/150	$^{\circ}\text{C}$	
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	42	$^{\circ}\text{C}/\text{W}$	



SPN8460

N-Channel Enhancement Mode MOSFET

ELECTRICAL CHARACTERISTICS

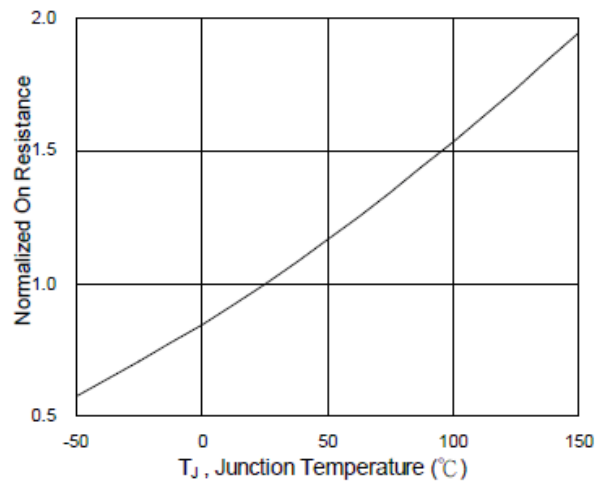
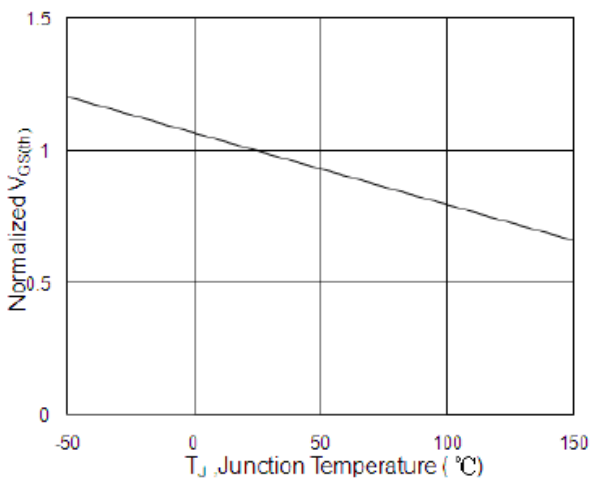
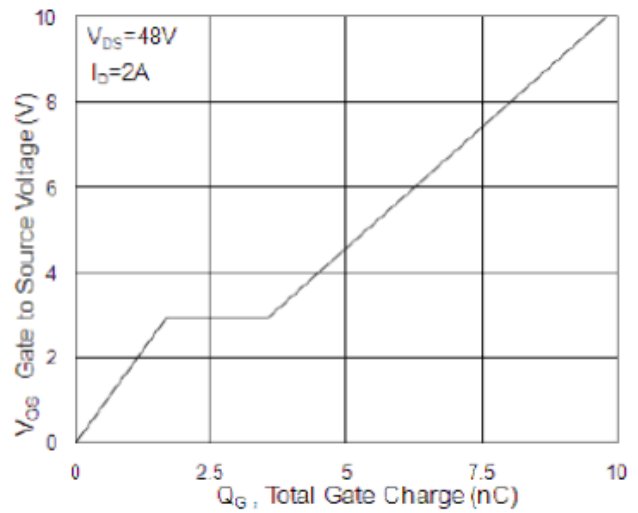
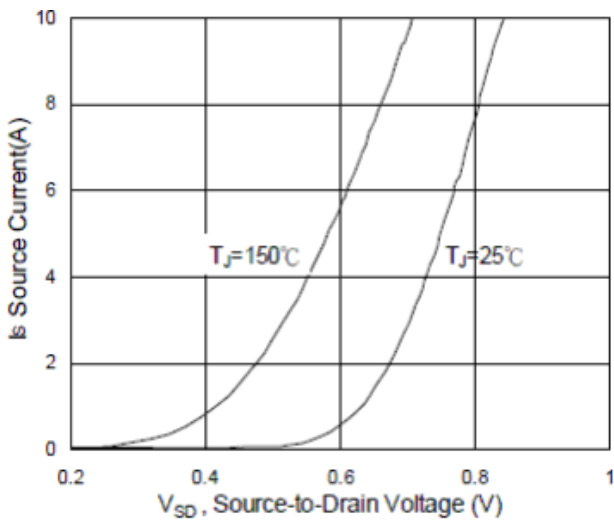
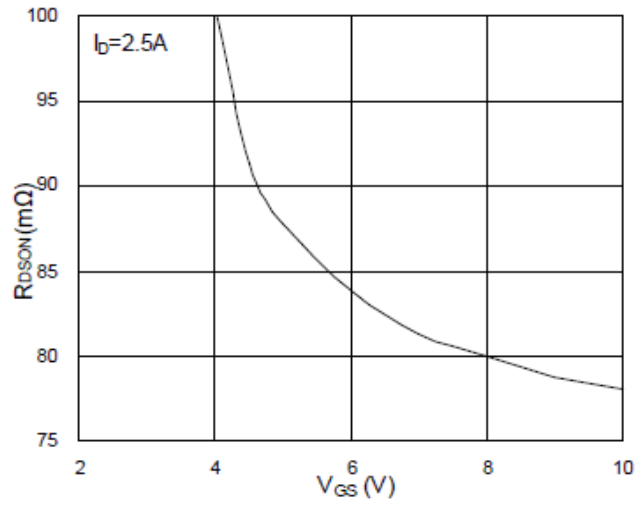
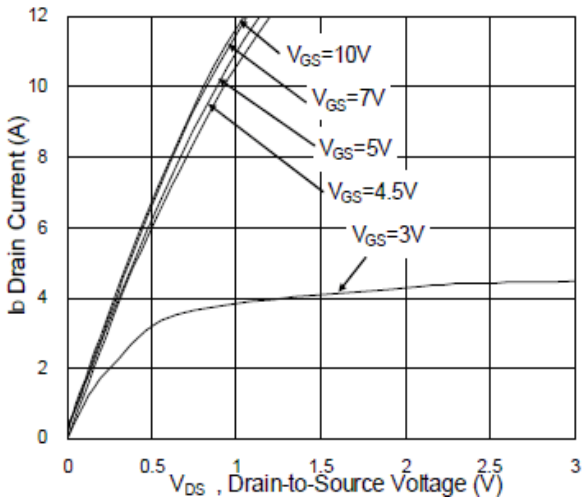
(TA=25°C Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	60			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5		1.5	
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=48V, V_{GS}=0V$			1	uA
		$V_{DS}=48V, V_{GS}=0V$ $T_J=55^\circ C$			5	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \geq 10V, V_{GS}=4.5V$	4			A
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D=2.5A$			120	mΩ
		$V_{GS} = 4.5V, I_D=2A$			130	
Forward Transconductance	g_{fs}	$V_{DS}=5V, I_D=2A$		7		S
Diode Forward Voltage	V_{SD}	$I_S=2.5A, V_{GS}=0V$			1.2	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS}=48V, V_{GS}=4.5V$ $I_D=2A$		5	7	nC
Gate-Source Charge	Q_{gs}			1.68	2.4	
Gate-Drain Charge	Q_{gd}			1.9	2.7	
Input Capacitance	C_{iss}	$V_{DS}=15V, V_{GS}=0V$ $f=1MHz$		511		pF
Output Capacitance	C_{oss}			38		
Reverse Transfer Capacitance	C_{rss}			25		
Turn-On Time	$t_{d(on)}$	$V_{DS}=30V, I_D=2.0A,$ $V_{GS}=10V, R_G=3.3\Omega$		1.6	3.2	ns
	t_r			7.2	13	
Turn-Off Time	$t_{d(off)}$			25	50	
	t_f			14.5	29	



SPN8460 N-Channel Enhancement Mode MOSFET

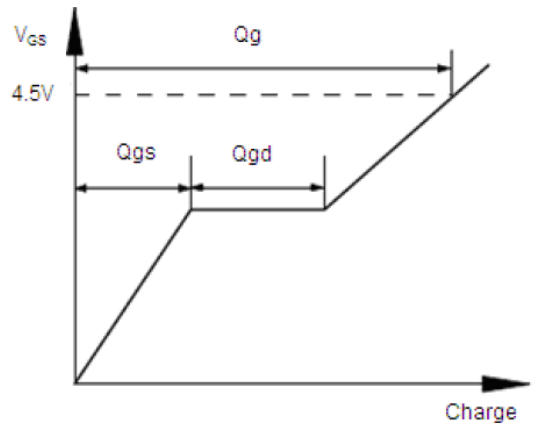
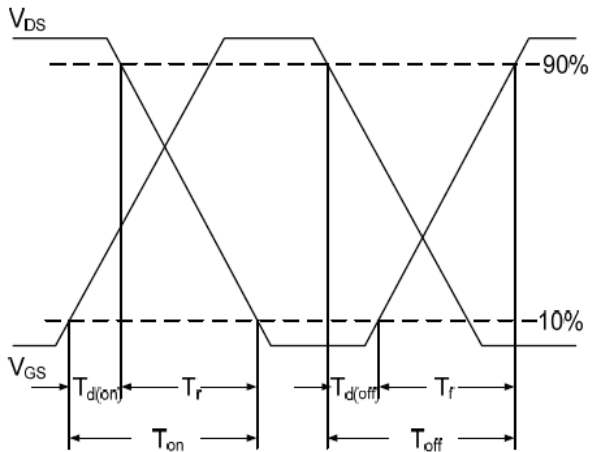
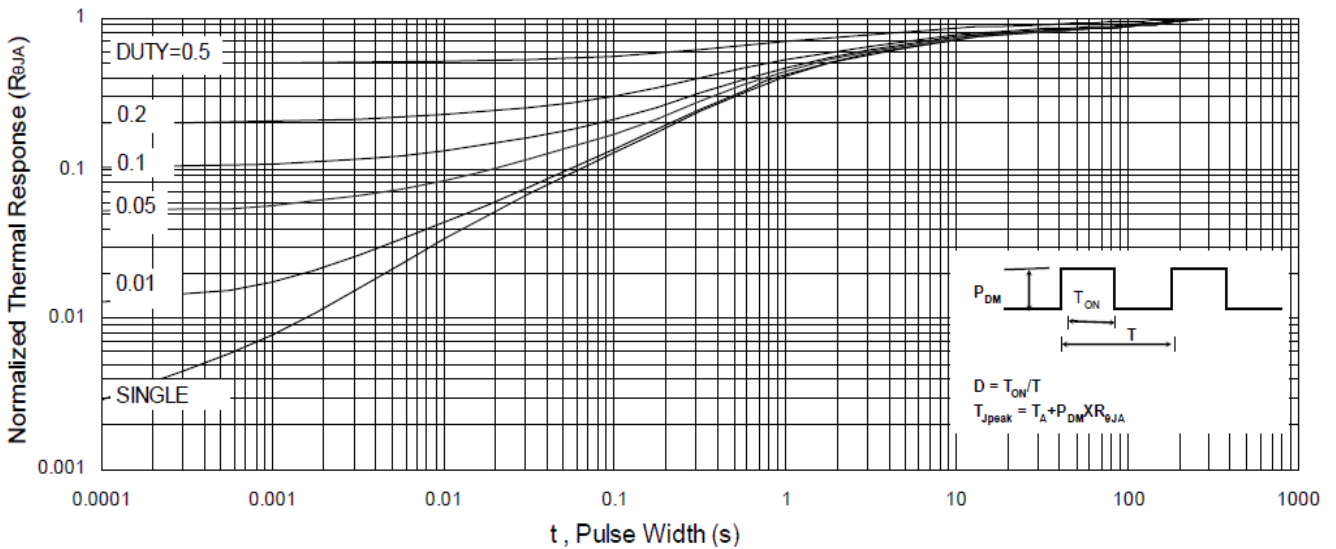
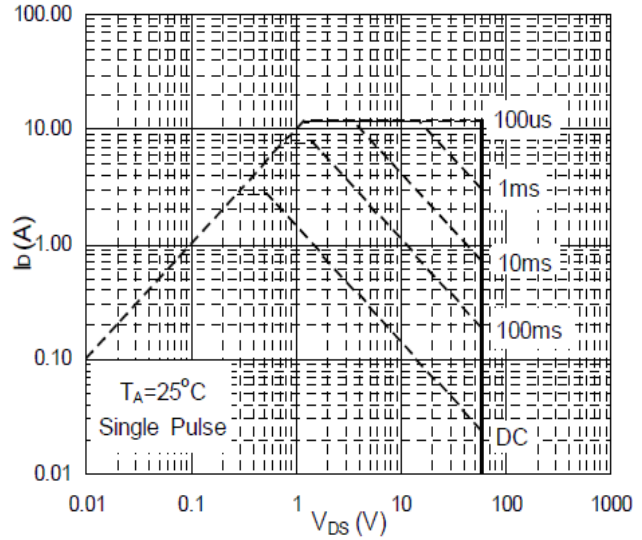
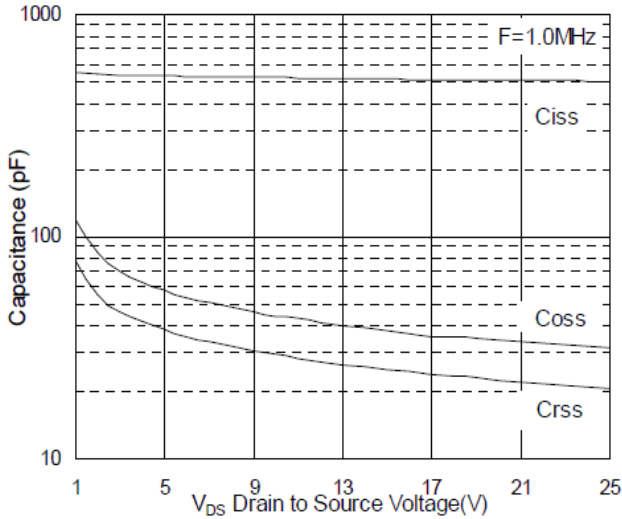
TYPICAL CHARACTERISTICS





SPN8460 N-Channel Enhancement Mode MOSFET

TYPICAL CHARACTERISTICS

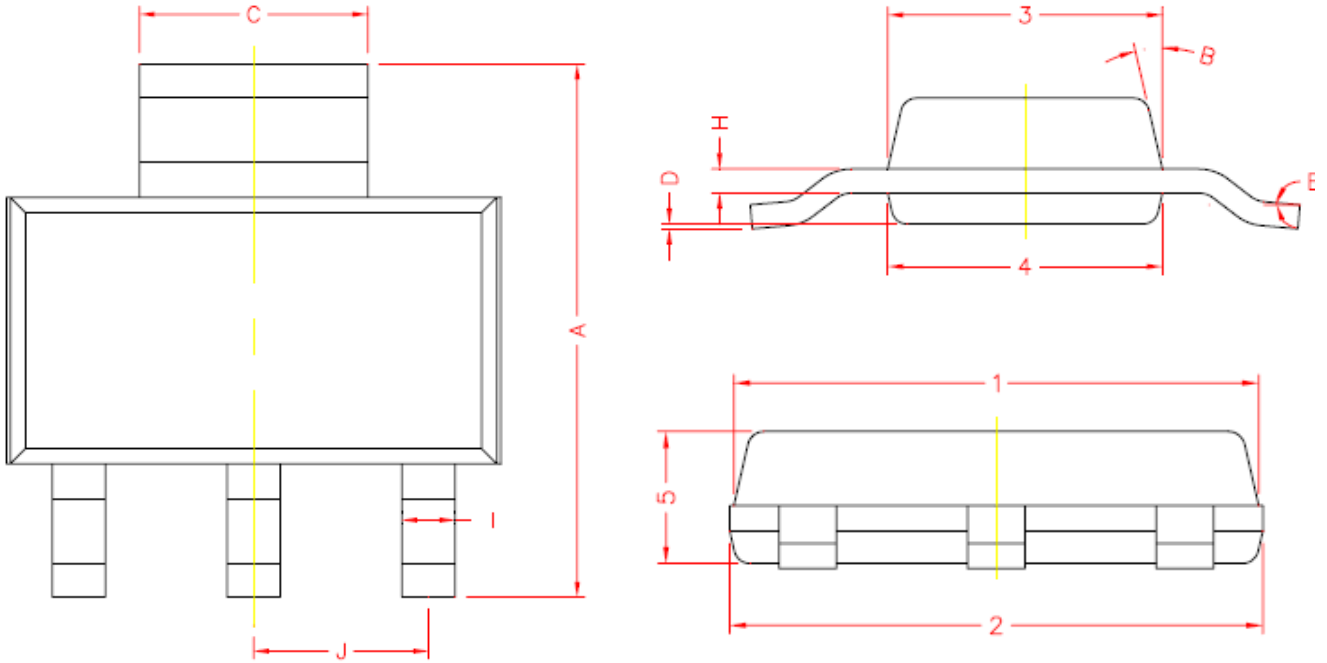




SPN8460

N-Channel Enhancement Mode MOSFET

SOT-233 PACKAGE OUTLINE



REF.	DIMENSIONS	
	Millimeters	
	Min.	Max.
A	6.70	7.30
C	2.90	3.10
D	0.02	0.10
E	0°	10°
I	0.60	0.80
H	0.25	0.35
B	13° TYP.	
J	2.30 REF.	
1	6.30	6.70
2	6.30	6.70
3	3.30	3.70
4	3.30	3.70
5	1.40	1.80



SPN8460

N-Channel Enhancement Mode MOSFET

Information provided is alleged to be exact and consistent. SYNC Power Corporation presumes no responsibility for the penalties of use of such information or for any violation of patents or other rights of third parties which may result from its use. No license is granted by allegation or otherwise under any patent or patent rights of SYNC Power Corporation. Conditions mentioned in this publication are subject to change without notice. This publication surpasses and replaces all information previously supplied. SYNC Power Corporation products are not authorized for use as critical components in life support devices or systems without express written approval of SYNC Power Corporation.

© The SYNC Power logo is a registered trademark of SYNC Power Corporation

© 2016 SYNC Power Corporation – Printed in Taiwan – All Rights

Reserved 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

© <http://www.syncpower.com>