



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.

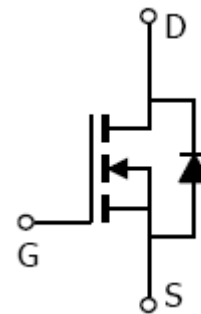
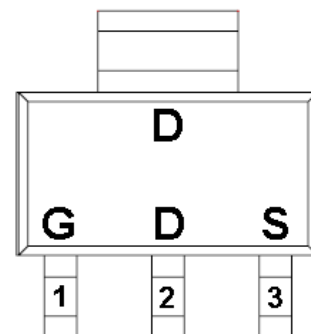
FEATURES

- ◆ 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

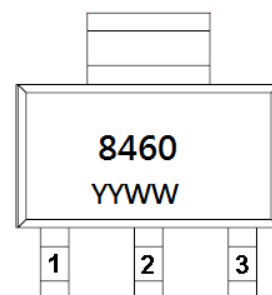
APPLICATIONS

- Power Tool
- DC/DC Converter
- Load Switch

PIN CONFIGURATION(SOT-223)



PART MARKING



Y : Year Code
W : Week Code



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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_{DS}	60	V	
Gate – Source Voltage	V_{GS}	± 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	$T_A=25^{\circ}\text{C}$	3.0	W
		$T_A=70^{\circ}\text{C}$	2.0	
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	$^{\circ}\text{C}/\text{W}$	



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ELECTRICAL CHARACTERISTICS

(TA=25°C Unless otherwise noted)

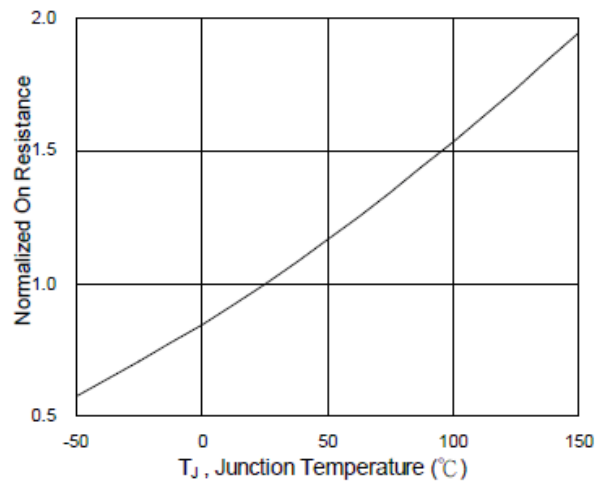
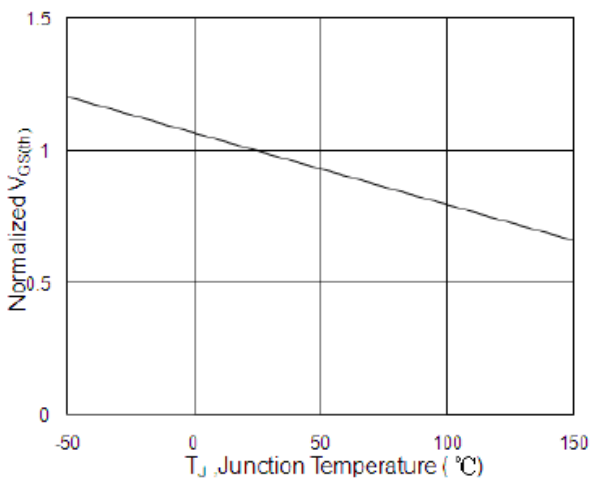
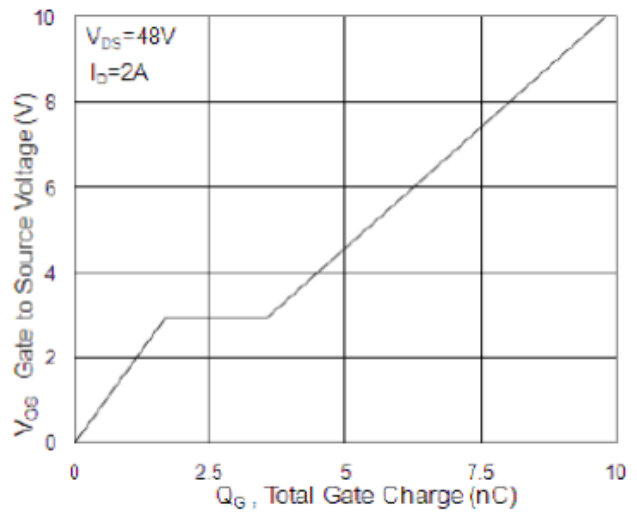
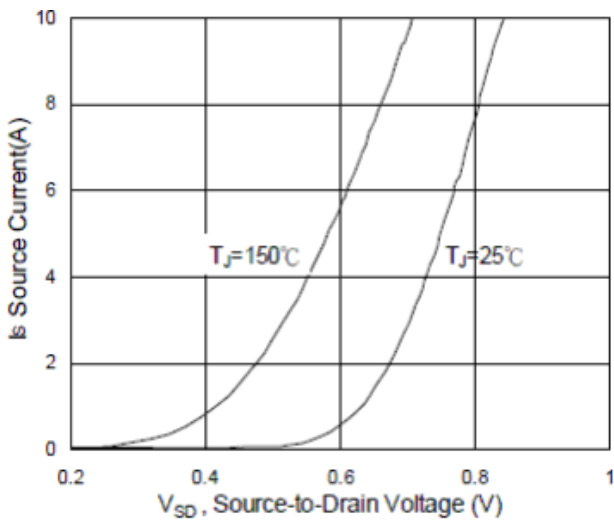
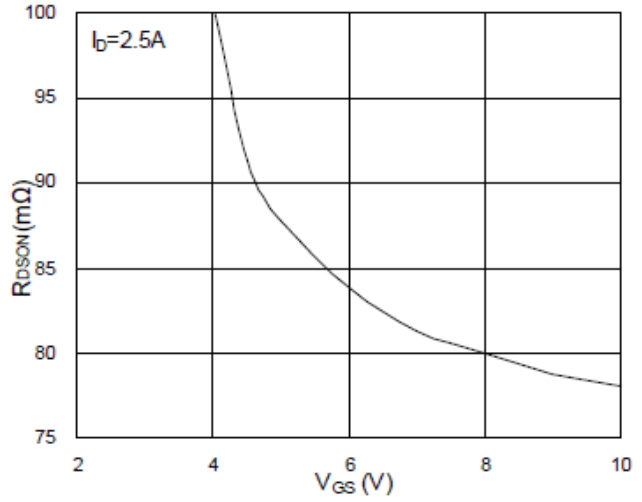
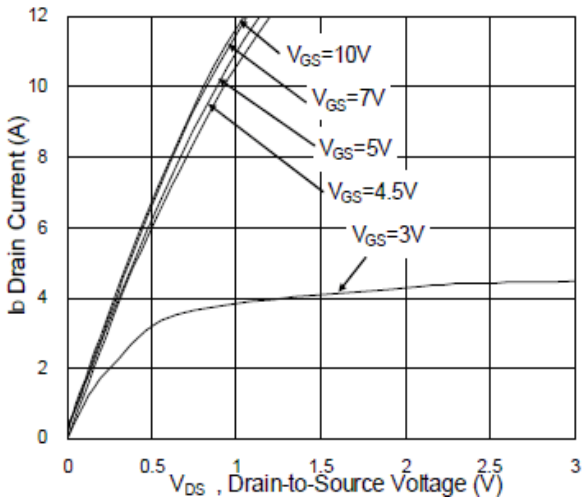
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250uA	60			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	0.5		1.5	
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =48V, V _{GS} =0V			1	uA
		V _{DS} =48V, V _{GS} =0V T _J =55°C			5	
On-State Drain Current	I _{D(on)}	V _{DS} ≥ 10V, V _{GS} =4.5V	4			A
Drain-Source On-Resistance	R _{DSON}	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 =3.3Ω		1.6	3.2	nS
	t _r			7.2	13	
Turn-Off Time	t _{d(off)}			25	50	
	t _f			14.5	29	



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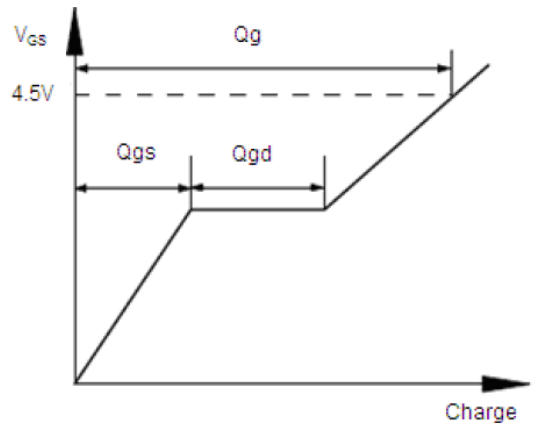
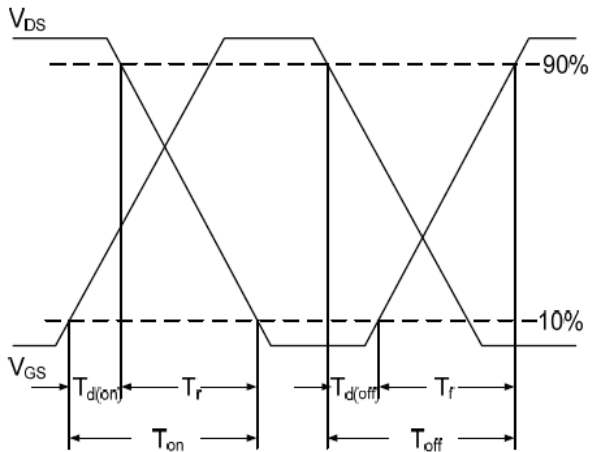
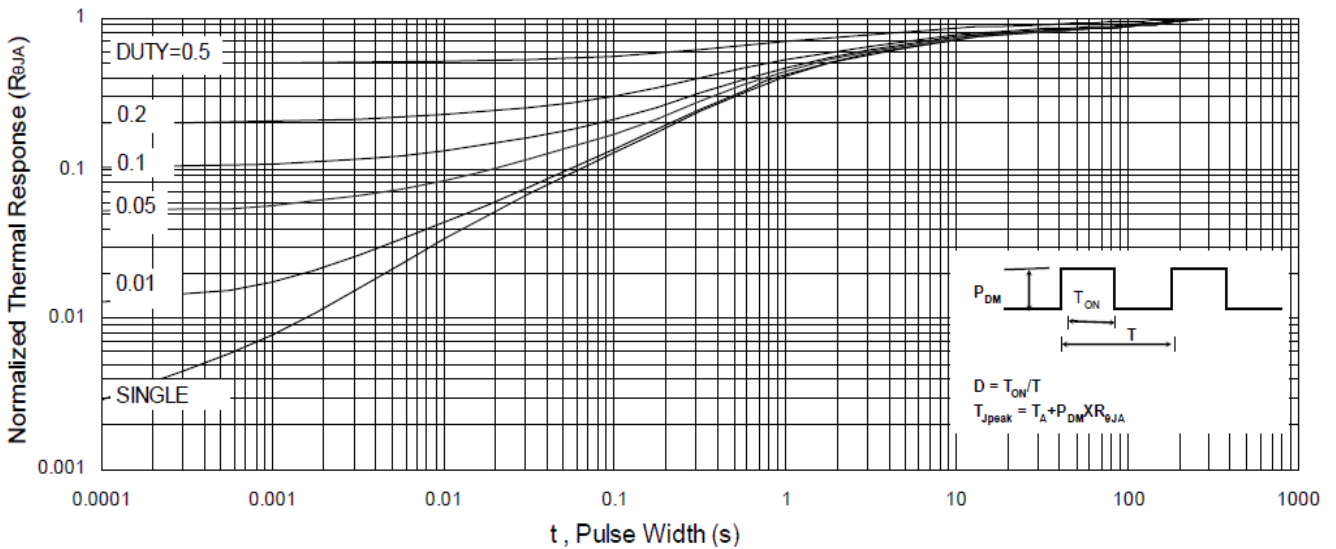
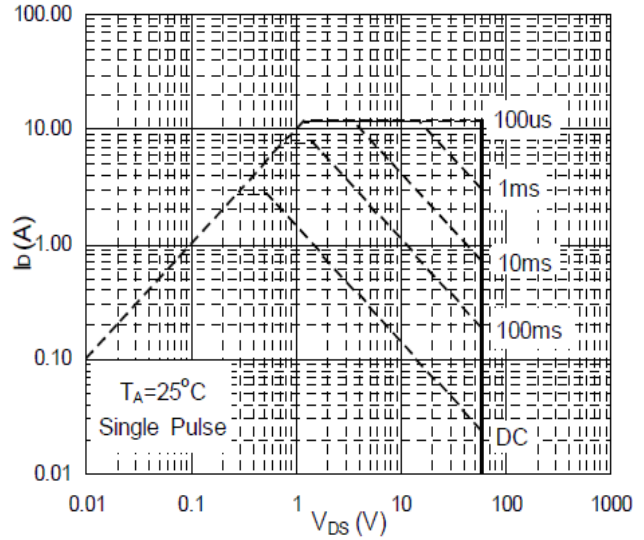
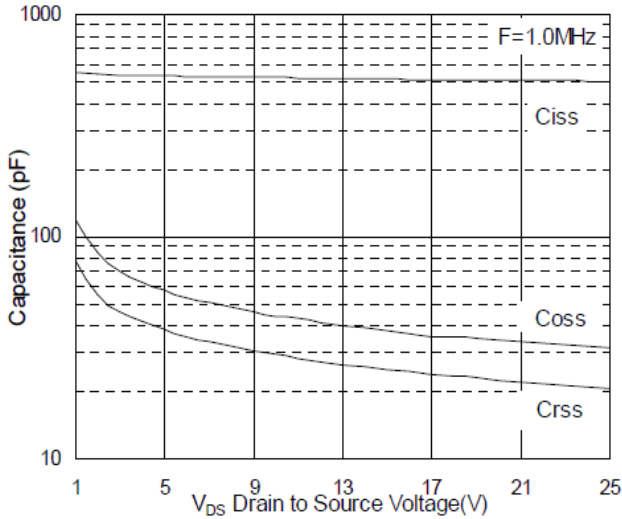
TYPICAL CHARACTERISTICS





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TYPICAL CHARACTERISTICS





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