



SPN2342

N-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPN2342 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.

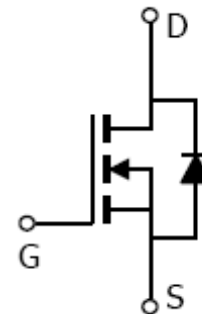
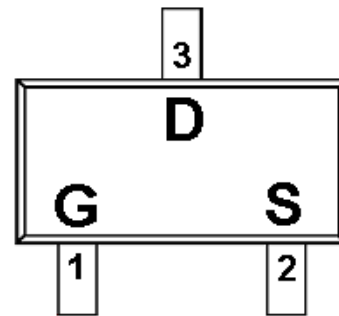
FEATURES

- ◆ 20V/5.0A, $R_{DS(ON)}=35m\Omega@V_{GS}=4.5V$
- ◆ 20V/4.5A, $R_{DS(ON)}=40m\Omega@V_{GS}=2.5V$
- ◆ 20V/4.0A, $R_{DS(ON)}=48m\Omega@V_{GS}=1.8V$
- ◆ Super high density cell design for extremely low $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ SOT-23-3L package design

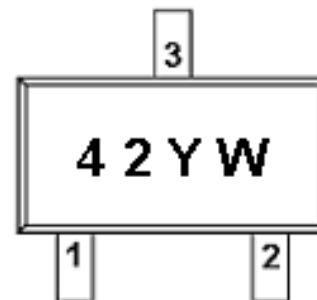
APPLICATIONS

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

PIN CONFIGURATION(SOT-23-3L)



PART MARKING



Y : Year Code
W : Week Code



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PIN DESCRIPTION

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

ORDERING INFORMATION

Part Number	Package	Part Marking
SPN2342S23RGB	SOT-23-3L	42

※ Week Code : A ~ Z(1 ~ 26) ; a ~ z(27 ~ 52)

※ SPN2342S23RGB : Tape Reel ; Pb – Free ; Halogen – Free

ABSOLUTE MAXIMUM RATINGS

(TA=25°C 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°C)	I _D	TA=25°C	4.0	A
		TA=70°C	3.0	
Pulsed Drain Current	I _{DM}	13	A	
Continuous Source Current(Diode Conduction)	I _S	1.0	A	
Power Dissipation	P _D	TA=25°C	1.25	W
		TA=70°C	0.8	
Operating Junction Temperature	T _J	-55/150	°C	
Storage Temperature Range	T _{STG}	-55/150	°C	
Thermal Resistance-Junction to Ambient	R _{θJA}	140	°C/W	



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ELECTRICAL CHARACTERISTICS

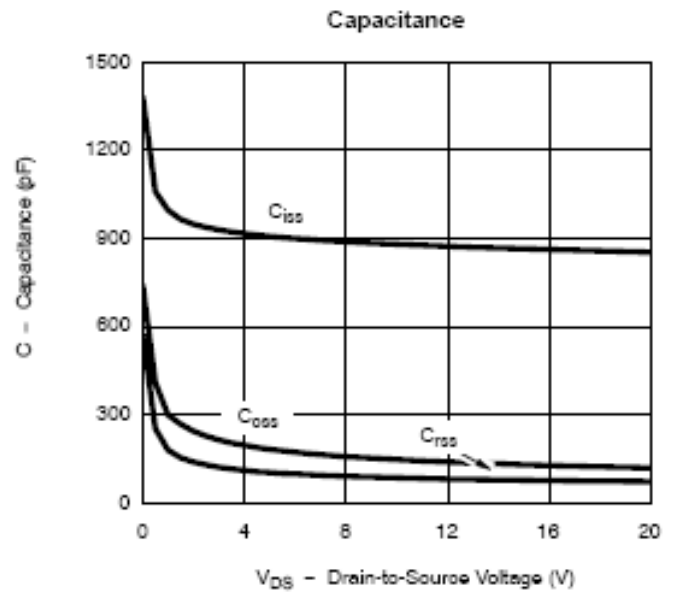
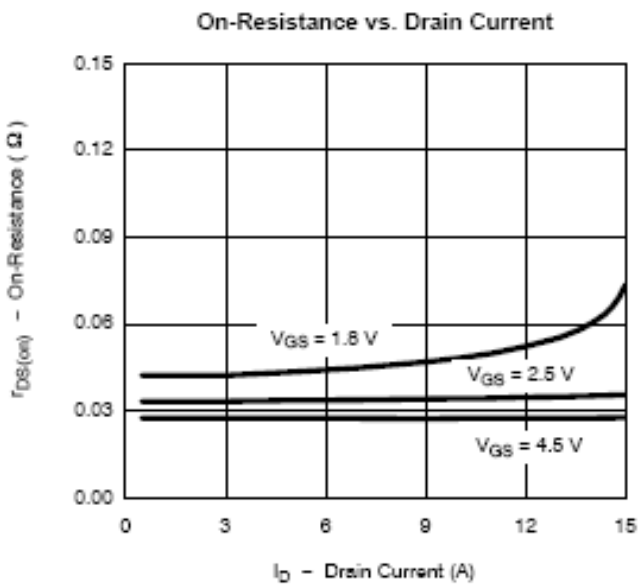
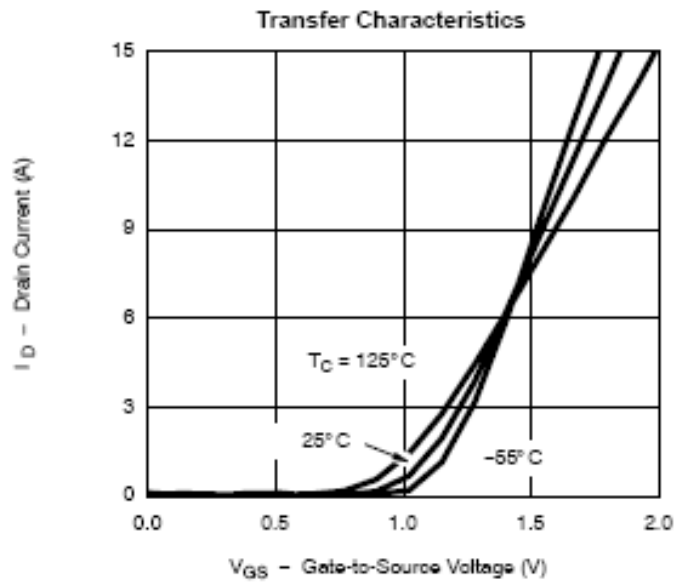
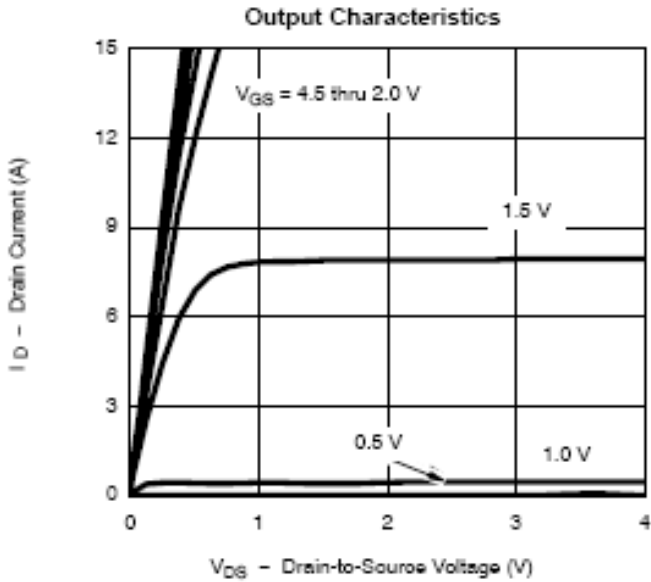
(TA=25°C Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.4		1.0	
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 12V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$			1	uA
		$V_{DS}=20V, V_{GS}=0V$ $T_J=55^\circ C$			10	
On-State Drain Current	$I_{D(on)}$	$V_{DS}\geq 5V, V_{GS}=4.5V$	6			A
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=5.0A$		0.026	0.035	Ω
		$V_{GS}=2.5V, I_D=4.5A$		0.029	0.040	
		$V_{GS}=1.8V, I_D=4.0A$		0.035	0.048	
Forward Transconductance	g_{fs}	$V_{DS}=15V, I_D=5.0A$		30		S
Diode Forward Voltage	V_{SD}	$I_S=1.0A, V_{GS}=0V$		0.8	1.2	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=4.5V$ $I_D=5.0A$		10	13	nC
Gate-Source Charge	Q_{gs}			1.4		
Gate-Drain Charge	Q_{gd}			2.1		
Input Capacitance	C_{iss}	$V_{DS}=10V, V_{GS}=0V$ $f=1MHz$		600		pF
Output Capacitance	C_{oss}			120		
Reverse Transfer Capacitance	C_{rss}			100		
Turn-On Time	$t_{d(on)}$	$V_{DD}=10V, R_L=10\Omega$ $I_D=1.0A, V_{GEN}=4.5V$ $R_G=6\Omega$		15	25	nS
	t_r			40	60	
Turn-Off Time	$t_{d(off)}$			45	65	
	t_f			30	40	



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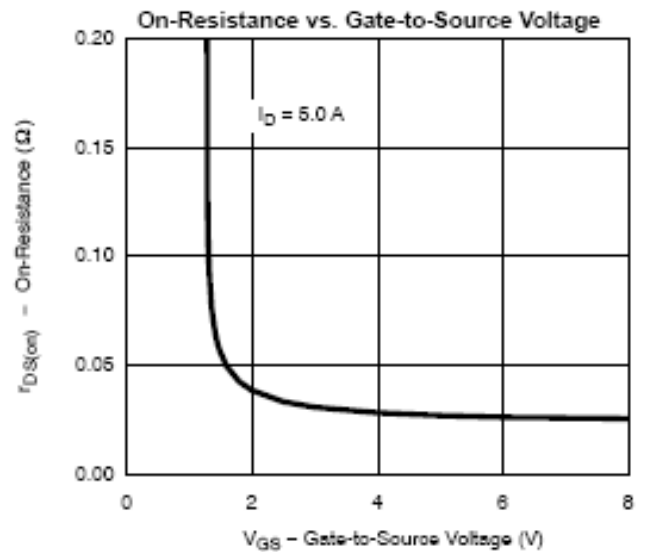
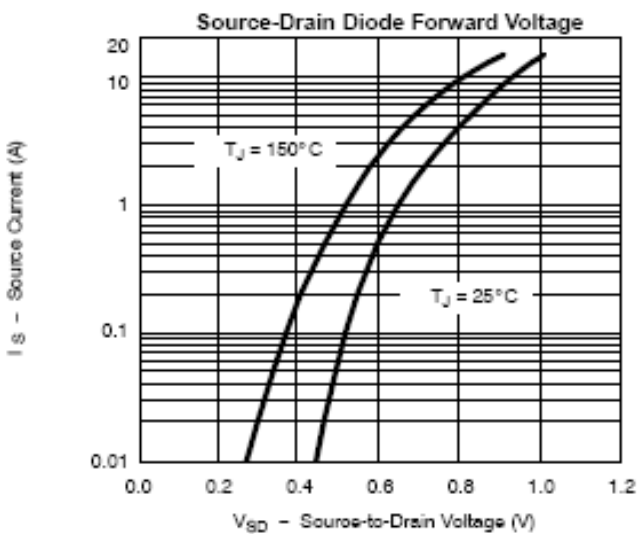
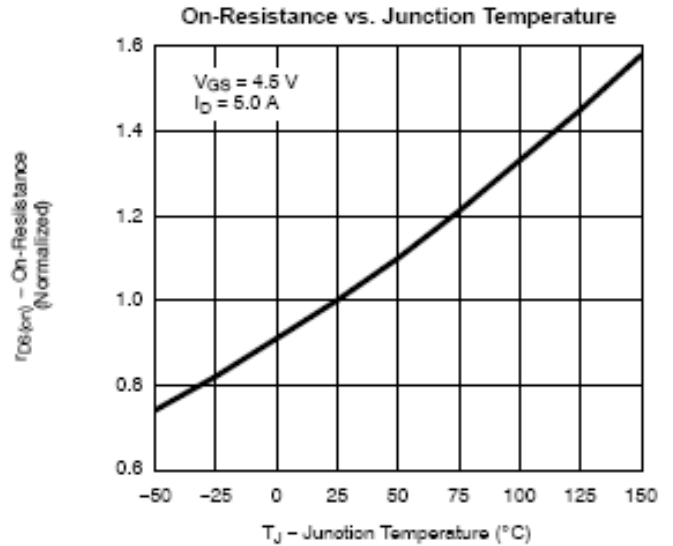
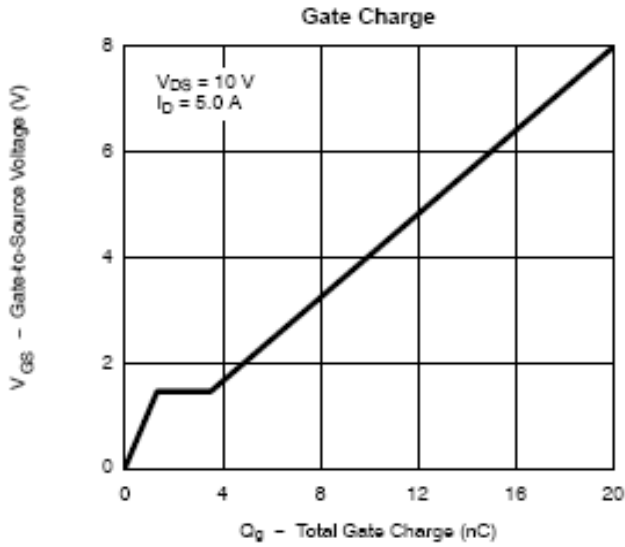
TYPICAL CHARACTERISTICS





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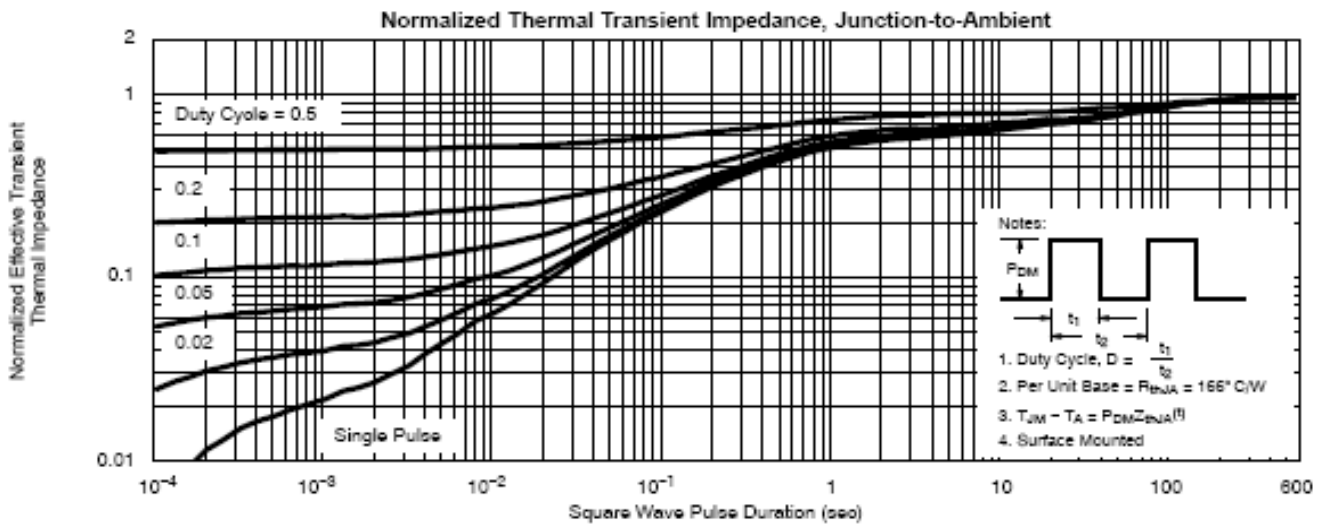
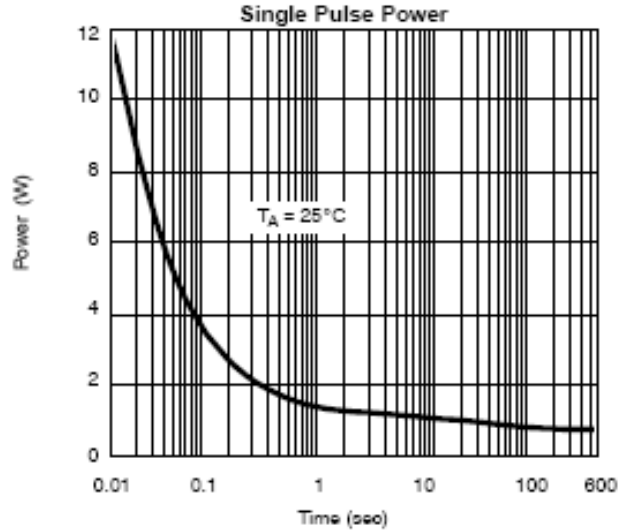
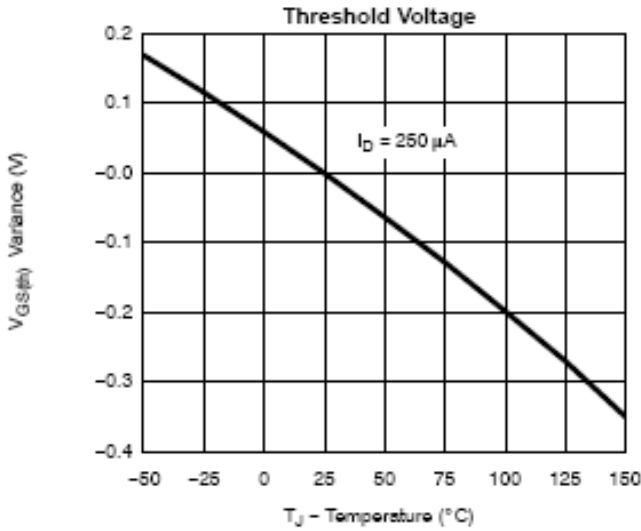
TYPICAL CHARACTERISTICS





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TYPICAL CHARACTERISTICS





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