



SPN3402W

N-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPN3402W 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.

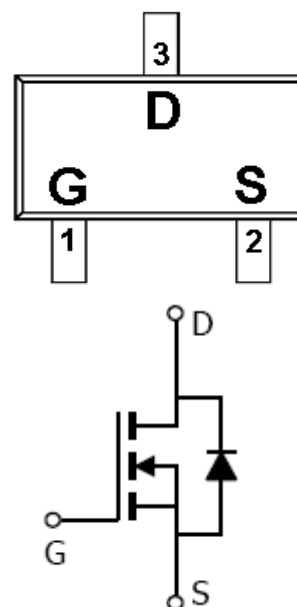
APPLICATIONS

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

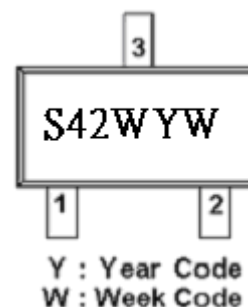
FEATURES

- ◆ 30V/2.8A, $R_{DS(ON)}=58m\Omega@V_{GS}=10V$
- ◆ 30V/2.3A, $R_{DS(ON)}=65m\Omega@V_{GS}=4.5V$
- ◆ 30V/1.5A, $R_{DS(ON)}=105m\Omega@V_{GS}=2.5V$
- ◆ Super high density cell design for extremely low $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ SOT-23 package design

PIN CONFIGURATION (SOT-23)



PART MARKING





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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
SPN3402WS23RGB	SOT-23	S42W

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

※ SPN3402WS23RGB : Tape Reel ; Pb – Free ; Halogen – Free

ABSOLUTE MAXIMUM RATINGS

(TA=25°C Unless otherwise noted)

Parameter		Symbol	Typical	Unit
Drain-Source Voltage		V _{DSS}	30	V
Gate –Source Voltage		V _{GSS}	±12	V
Continuous Drain Current(T _J =150°C)	T _A =25°C	I _D	4.0	A
	T _A =70°C		2.8	
Pulsed Drain Current		I _{DM}	10	A
Continuous Source Current(Diode Conduction)		I _S	1.25	A
Power Dissipation	T _A =25°C	P _D	1.25	W
	T _A =70°C		0.8	
Operating Junction Temperature		T _J	150	°C
Storage Temperature Range		T _{STG}	-55/150	°C
Thermal Resistance-Junction to Ambient		R _{θJA}	100	°C/W



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ELECTRICAL CHARACTERISTICS

(T_A=25°C Unless otherwise noted)

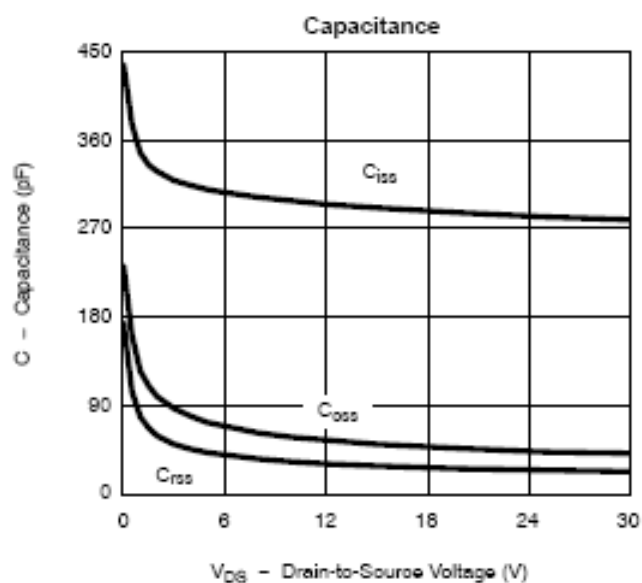
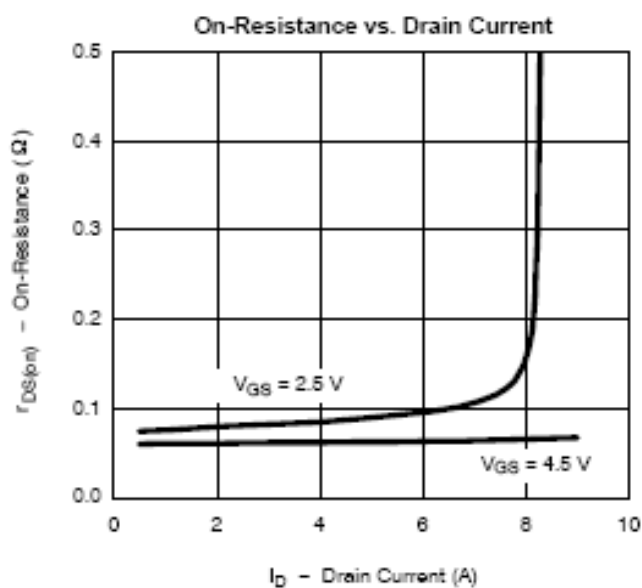
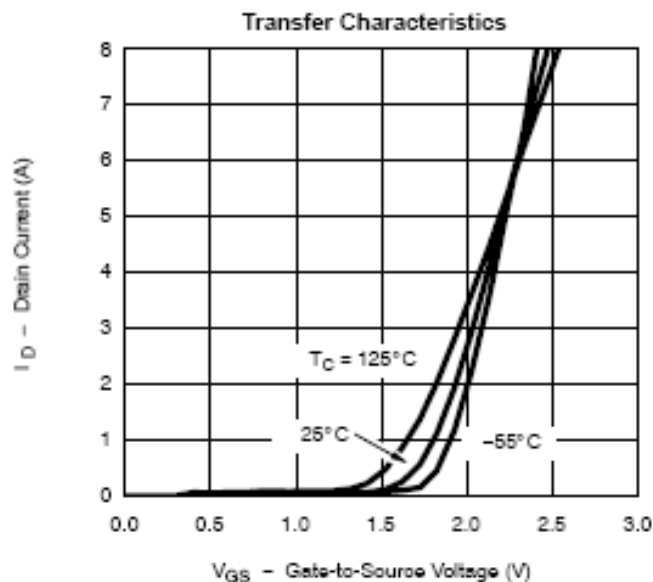
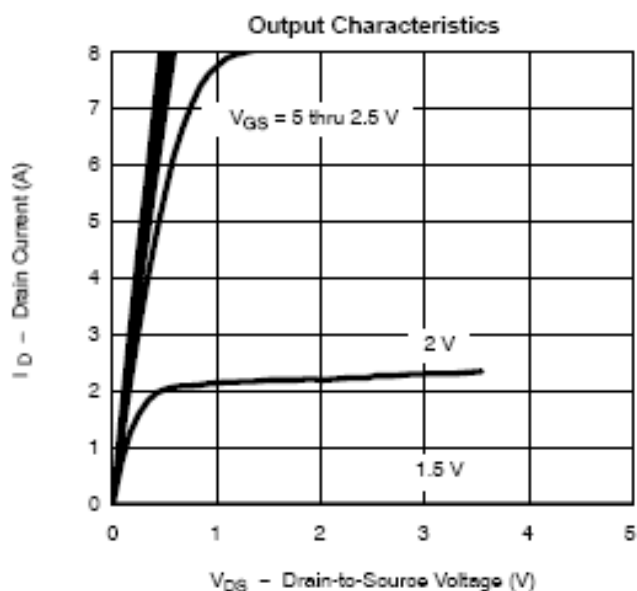
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.5		1.6	
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±12V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =24V, V _{GS} =0.0V			1	μA
		V _{DS} =24V, V _{GS} =0.0V T _J =55°C			10	
On-State Drain Current	I _{D(on)}	V _{DS} ≥ 4.5V, V _{GS} =10V	6			A
		V _{DS} ≥ 4.5V, V _{GS} =4.5V	4			
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10V, I _D =2.8A		0.048	0.058	Ω
		V _{GS} = 4.5V, I _D =2.3A		0.053	0.065	
		V _{GS} = 2.5V, I _D =1.5A		0.080	0.105	
Forward Transconductance	g _{fs}	V _{DS} =4.5V, I _D =2.8A		4.6		S
Diode Forward Voltage	V _{SD}	I _S =1.25A, V _{GS} =0V		0.82	1.2	V
Dynamic						
Total Gate Charge	Q _g	V _{DS} =15V, V _{GS} =4.5V I _D =2.0A		4.2	6	nC
Gate-Source Charge	Q _{gs}			0.6		
Gate-Drain Charge	Q _{gd}			1.5		
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V f = 1MHz		350		pF
Output Capacitance	C _{oss}			55		
Reverse Transfer Capacitance	C _{rss}			41		
Turn-On Time	t _{d(on)}	V _{DD} =15V, R _L =10Ω V _{GEN} =10V, R _G =3Ω		2.5		nS
	t _r			2.5		
Turn-Off Time	t _{d(off)}			20		
	t _f			4		



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TYPICAL CHARACTERISTICS

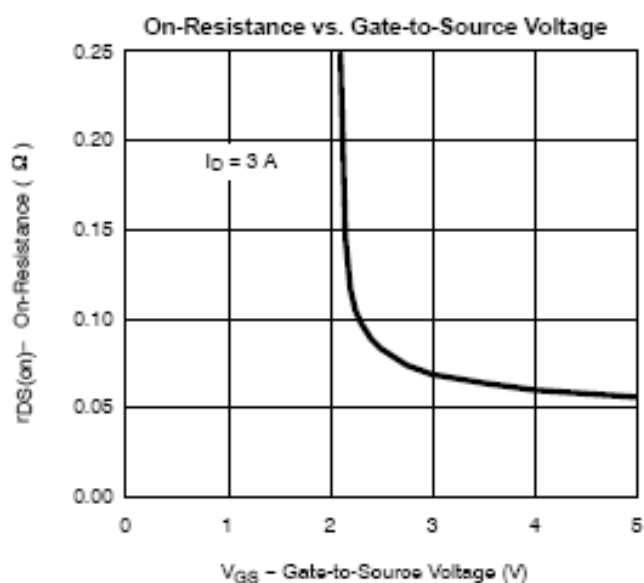
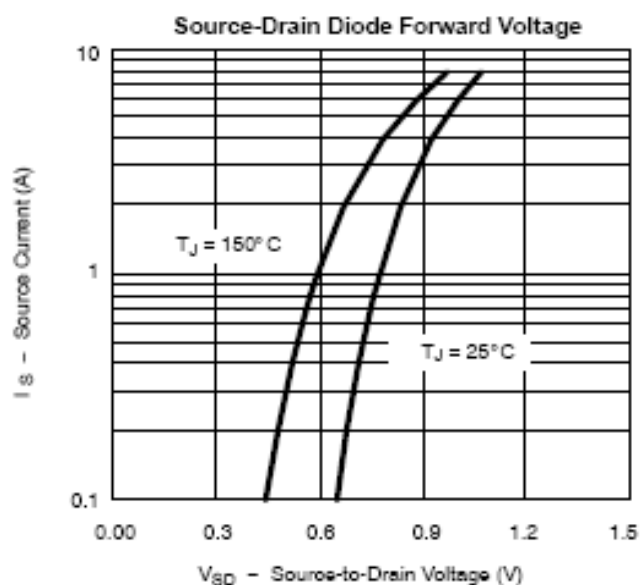
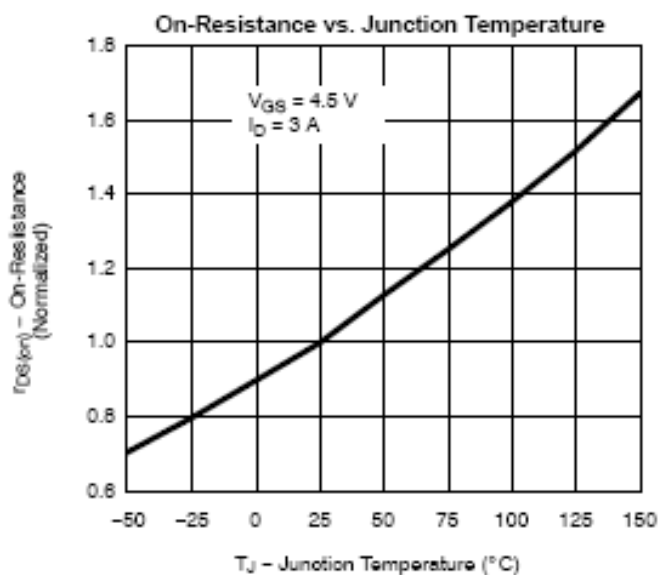
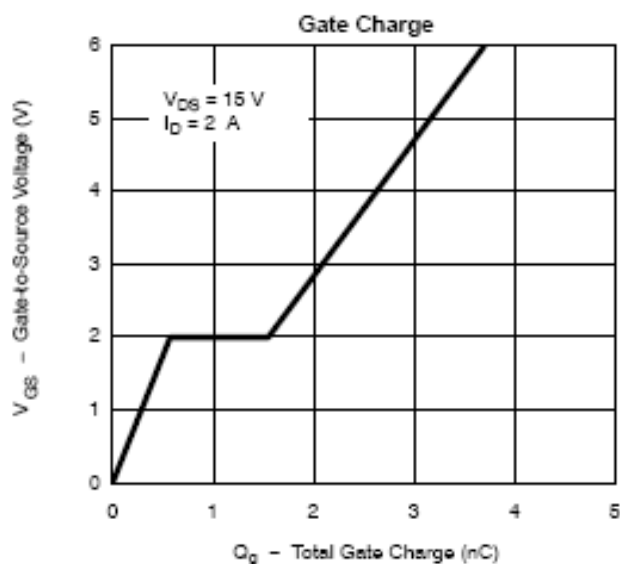




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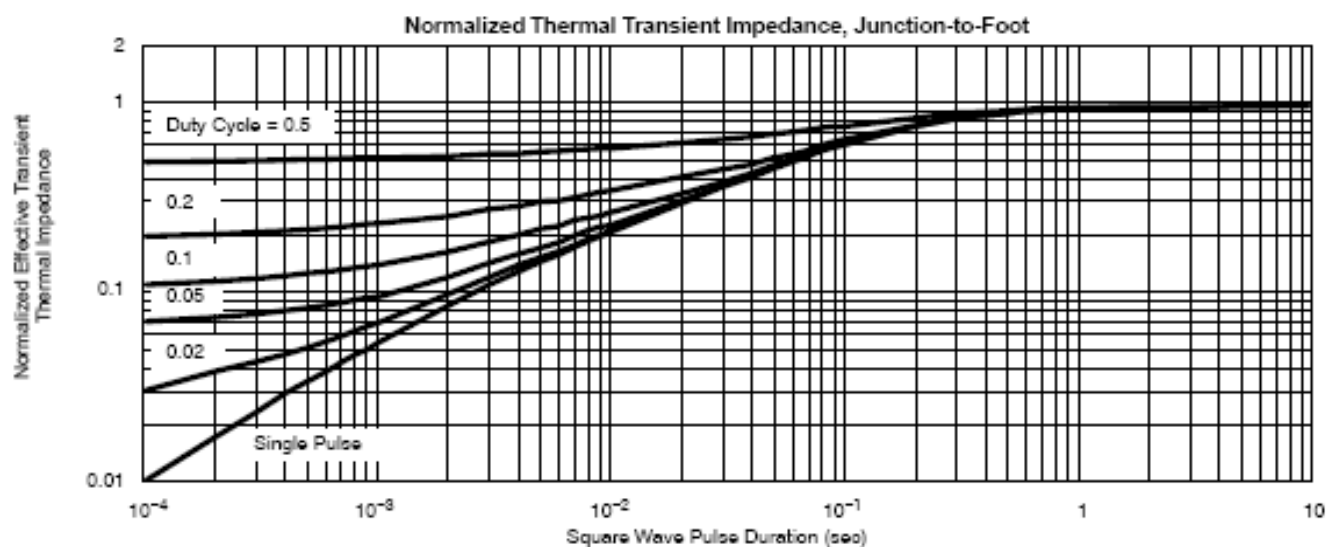
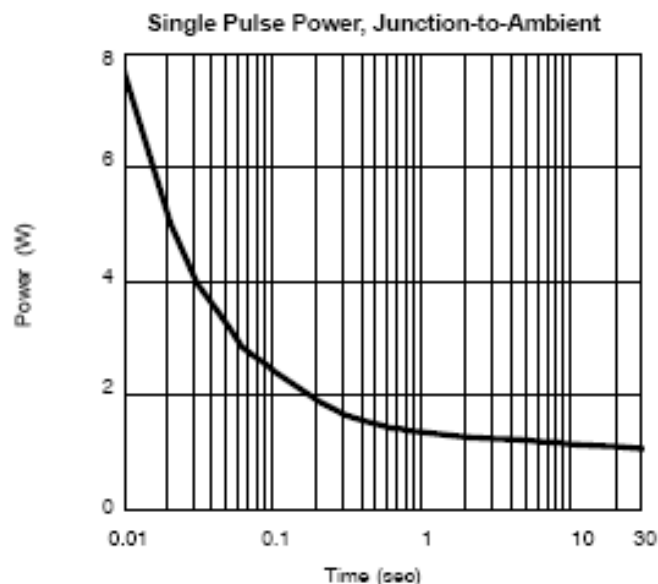
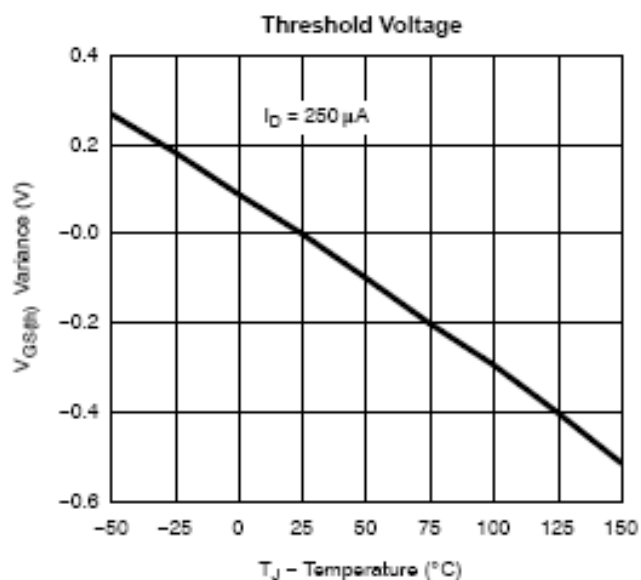




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TYPICAL CHARACTERISTICS





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