



SPN2316

N-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPN2316 is the N-Channel 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 and provide superior switching performance. These devices are particularly suited for low voltage applications such as notebook computer power management and other battery powered circuits where high-side switching, low in-line power loss, and resistance to transients are needed.

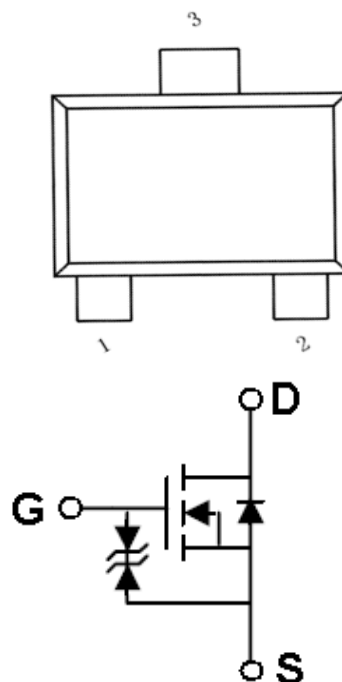
FEATURES

- ◆ N-Channel
30V/3.4A, $R_{DS(ON)}=60m\Omega@V_{GS}=10V$
30V/2.7A, $R_{DS(ON)}=70m\Omega@V_{GS}=4.5V$
30V/1.0A, $R_{DS(ON)}=100m\Omega@V_{GS}=2.5V$
- ◆ Super high density cell design for extremely low $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ ESD protected
- ◆ SOT-23 package design

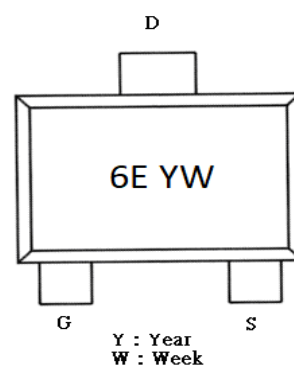
APPLICATIONS

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

PIN CONFIGURATION(SOT-23)



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
SPN2316S23RGB	SOT-23	6E

※ SPN2316S23RGB : Tape Reel ; Pb – Free ; Halogen – Free ; 3K/Reel

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

ABSOLUTE MAXIMUM RATINGS

(TA=25°C Unless otherwise noted)

Parameter	Symbol	Typical	Unit
Drain-Source Voltage	VDSS	30	V
Gate –Source Voltage	VGSS	±12	V
Continuous Drain Current(TJ=150°C)	ID	3.8	A
Pulsed Drain Current	IDM	15	A
Power Dissipation	PD	1.39	W
Operating Junction Temperature	TJ	-55/150	°C
Storage Temperature Range	TSTG	-55/150	°C
Thermal Resistance-Junction to Ambient	RθJA	90	°C/W



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ELECTRICAL CHARACTERISTICS

(T_A=25°C Unless otherwise noted)

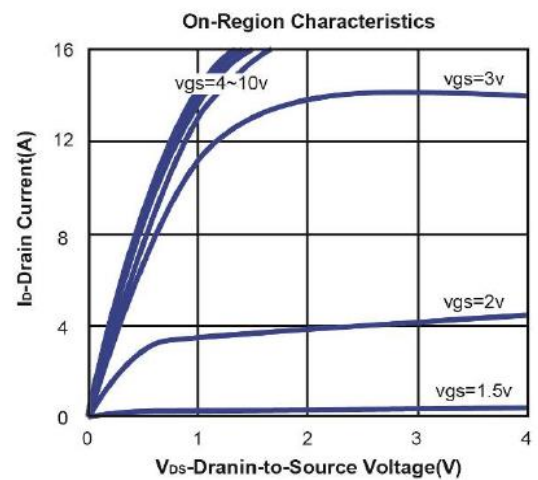
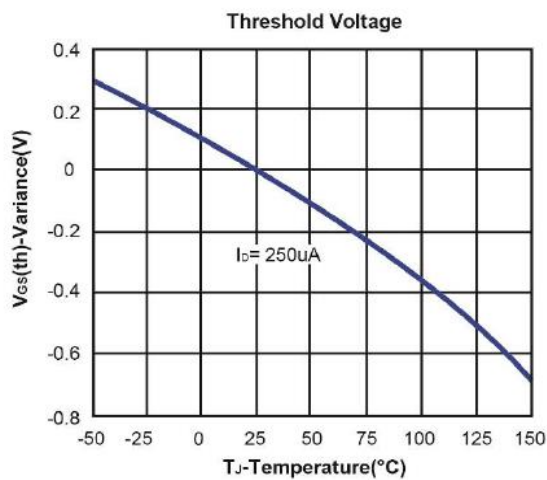
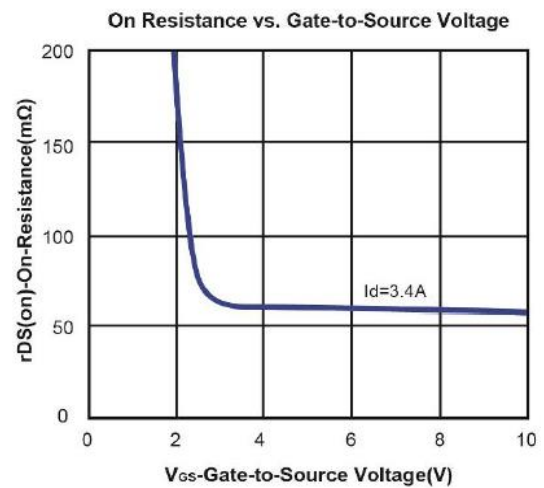
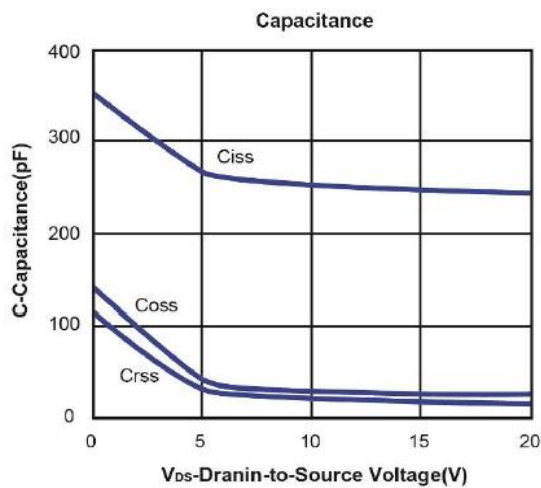
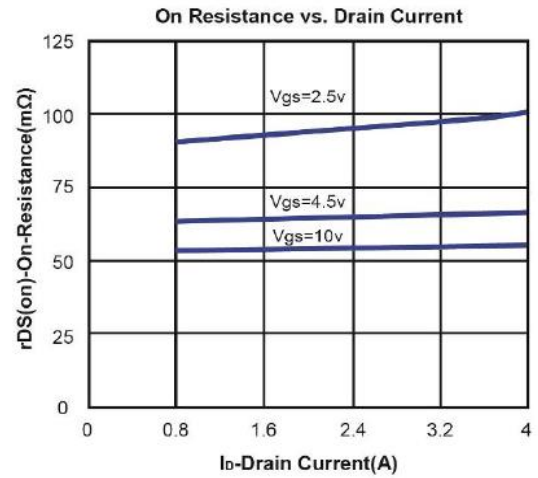
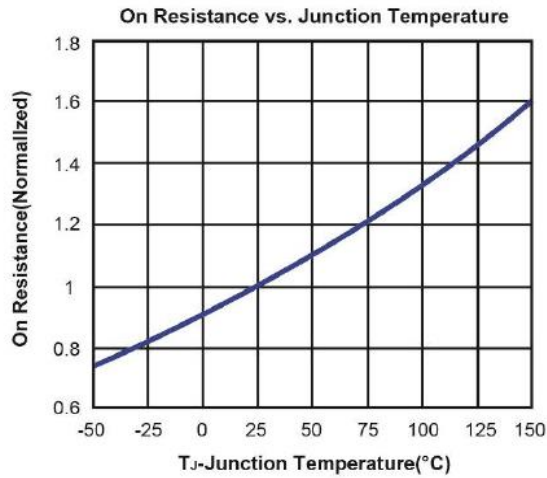
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D = 250uA	30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	0.6		1.5	
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±10V			±10	uA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24V, V _{GS} =0V			1	uA
		V _{DS} = 24V, V _{GS} =0V T _J =55°C			10	
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =3.4A		48	60	mΩ
		V _{GS} =4.5V, I _D =2.7A		54	70	
		V _{GS} =2.5V, I _D =1A		75	100	
Diode Forward Voltage	V _{SD}	I _S =3.4A, V _{GS} =0V			1.2	V
Dynamic						
Total Gate Charge	Q _g	V _{DS} =15V, V _{GS} =4.5V, I _D =2.1A		4.5		nC
Gate-Source Charge	Q _{gs}			1.4		
Gate-Drain Charge	Q _{gd}			1.3		
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V f=1MHz		249		pF
Output Capacitance	C _{oss}			27		
Reverse Transfer Capacitance	C _{rss}			20		
Turn-On Time	t _{d(on)}	V _{DD} =15V, R _L =4.4Ω , I _D =3.4A V _{GEN} =10V, R _G =6Ω		10.4		nS
	t _r			47.5		
Turn-Off Time	t _{d(off)}			70.1		
	t _f			62.3		



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TYPICAL CHARACTERISTICS

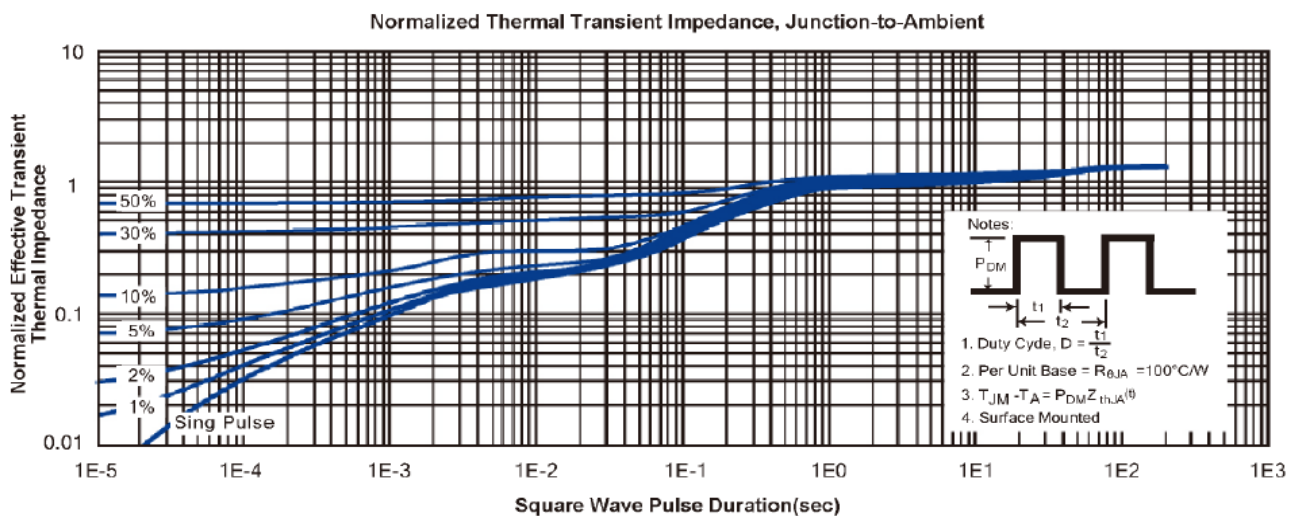
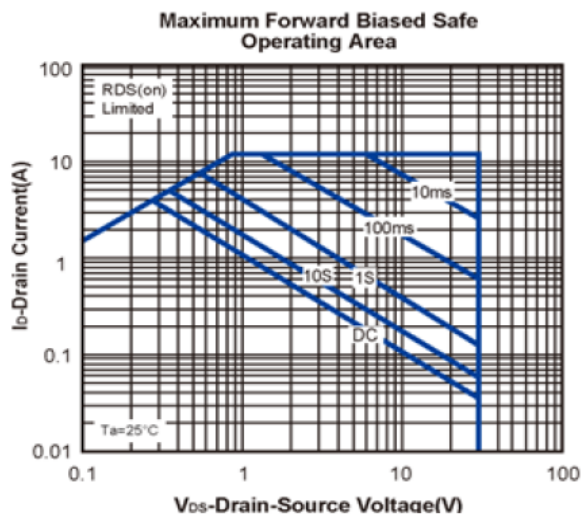
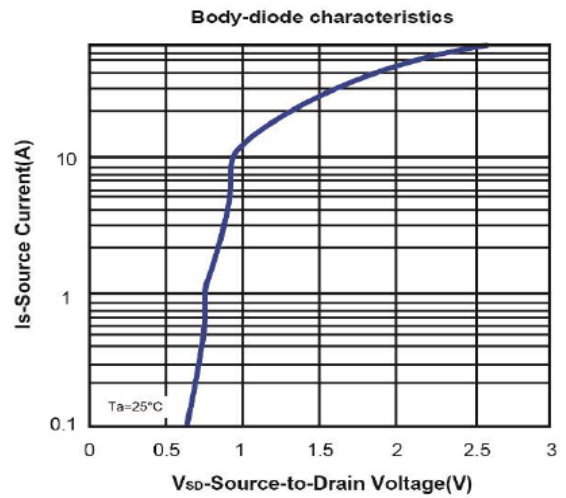
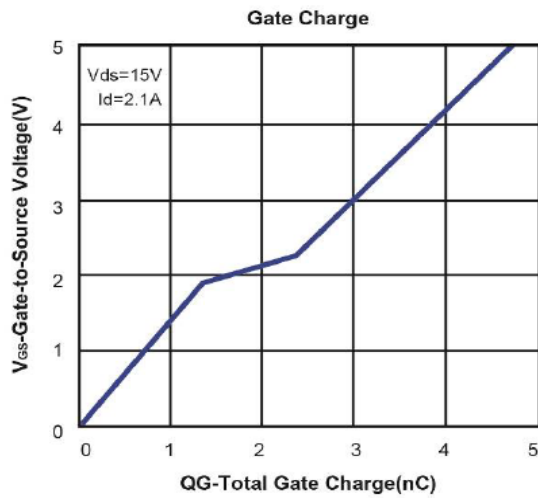




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TYPICAL CHARACTERISTICS





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