



SPN2310

N-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPN2310 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.

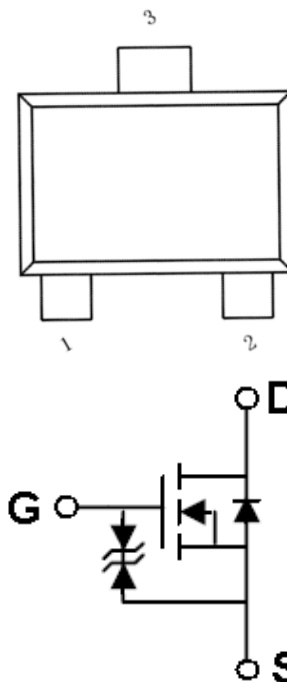
FEATURES

- ◆ N-Channel
30V/0.95A, $R_{DS(ON)}=380m\Omega@V_{GS}=4.5V$
30V/0.75A, $R_{DS(ON)}=450m\Omega@V_{GS}=2.5V$
30V/0.65A, $R_{DS(ON)}=800m\Omega@V_{GS}=1.8V$
- ◆ 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

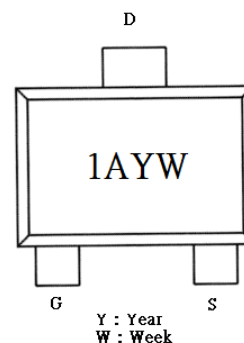
APPLICATIONS

- 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
SPN2310S23RGB	SOT-23	1A

※ SPN2310S23RGB : 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)	I _D	1.8	A
Pulsed Drain Current	I _{DM}	6	A
Continuous Source Current(Diode Conduction)	I _S	1	A
Power Dissipation	P _D	1.25	W
Operating Junction Temperature	T _J	-55/150	°C
Storage Temperature Range	T _{STG}	-55/150	°C
Thermal Resistance-Junction to Ambient	R _{θJA}	120	°C/W



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ELECTRICAL CHARACTERISTICS

(T_A=25°C Unless otherwise noted)

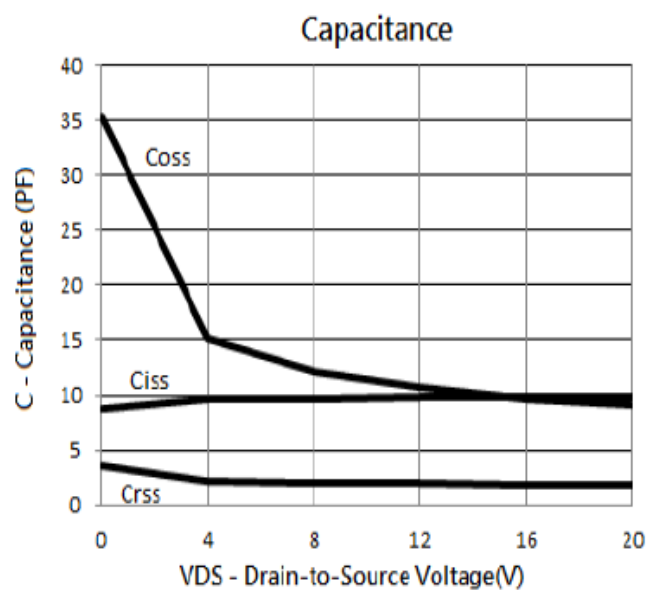
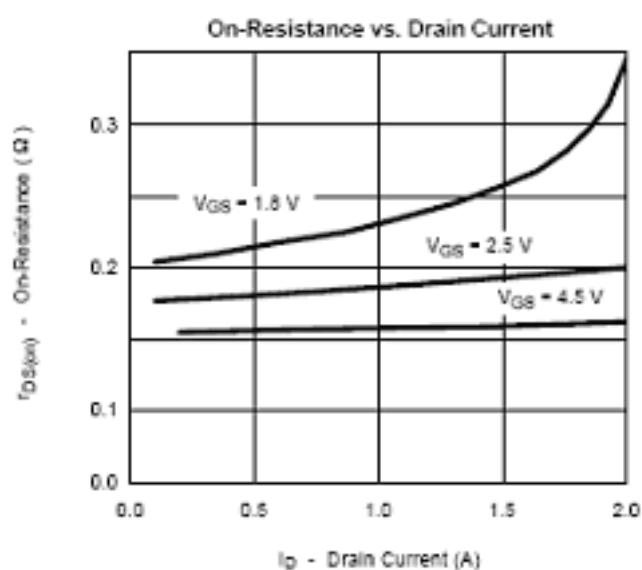
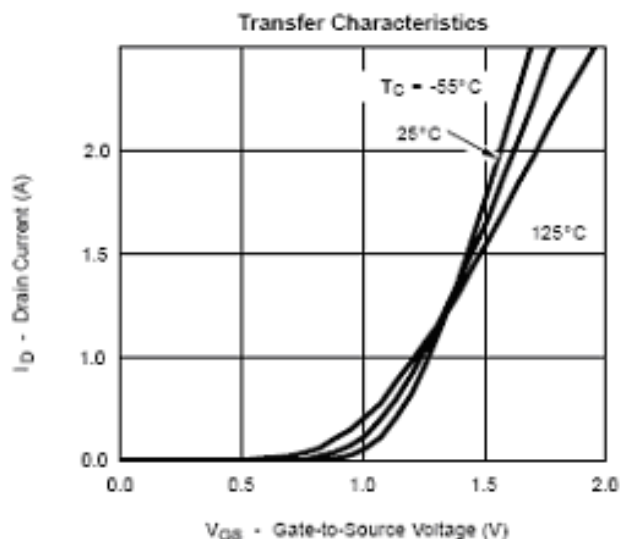
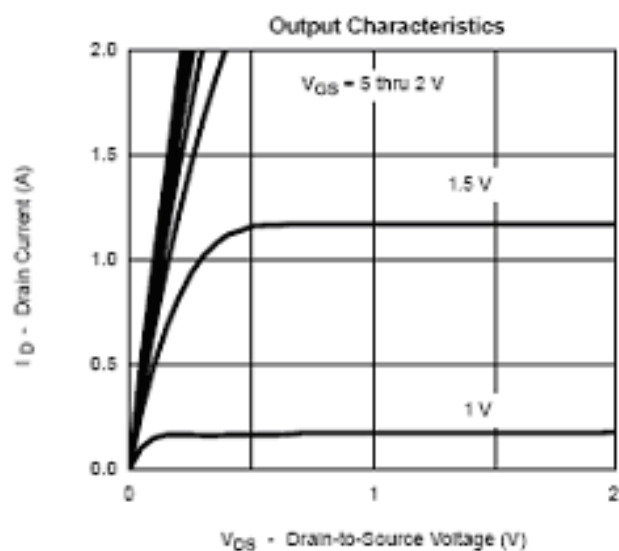
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D = 250uA	30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	0.35		1.0	
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±12V			10	uA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24V, V _{GS} =0V			1	uA
		V _{DS} = 24V, V _{GS} =0V T _J =55°C			5	
On-State Drain Current	I _{D(on)}	V _{DS} ≥ 4.5V, V _{GS} =5V	0.7			A
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =0.95A		0.26	0.38	Ω
		V _{GS} =2.5V, I _D =0.75A		0.32	0.45	
		V _{GS} =1.8V, I _D =0.65A		0.42	0.80	
Forward Transconductance	g _{fs}	V _{DS} =10V, I _D =0.4A		1.0		S
Diode Forward Voltage	V _{SD}	I _S =0.15A, V _{GS} =0V		0.8	1.2	V
Dynamic						
Total Gate Charge	Q _g	V _{DS} =10V, V _{GS} =4.5V, I _D =0.6A		1.2	1.5	nC
Gate-Source Charge	Q _{gs}			0.2		
Gate-Drain Charge	Q _{gd}			0.3		
Input Capacitance	C _{iss}	V _{DS} =10V, f=1MHz, V _{GS} =0V		7.2		pF
Output Capacitance	C _{oss}			13.5		
Reverse Transfer Capacitance	C _{rss}			1.6		
Turn-On Time	t _{d(on)}	V _{DD} =10V, R _L =10Ω , I _D =0.5A V _{GEN} =4.5V ,R _G =6Ω		5	10	nS
	t _r			8	15	
Turn-Off Time	t _{d(off)}			10	18	
	t _f			1.2	2.8	



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TYPICAL CHARACTERISTICS

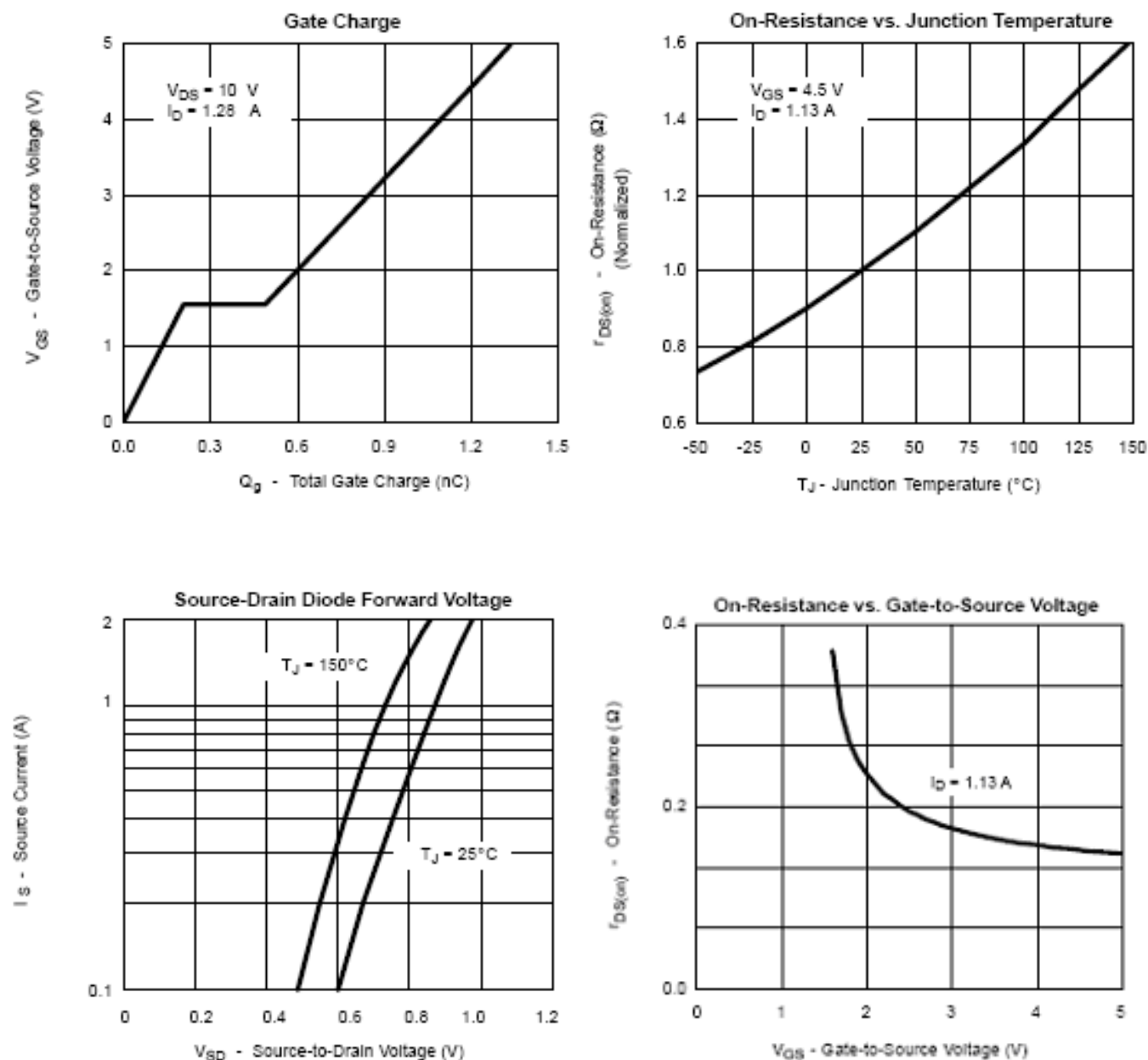




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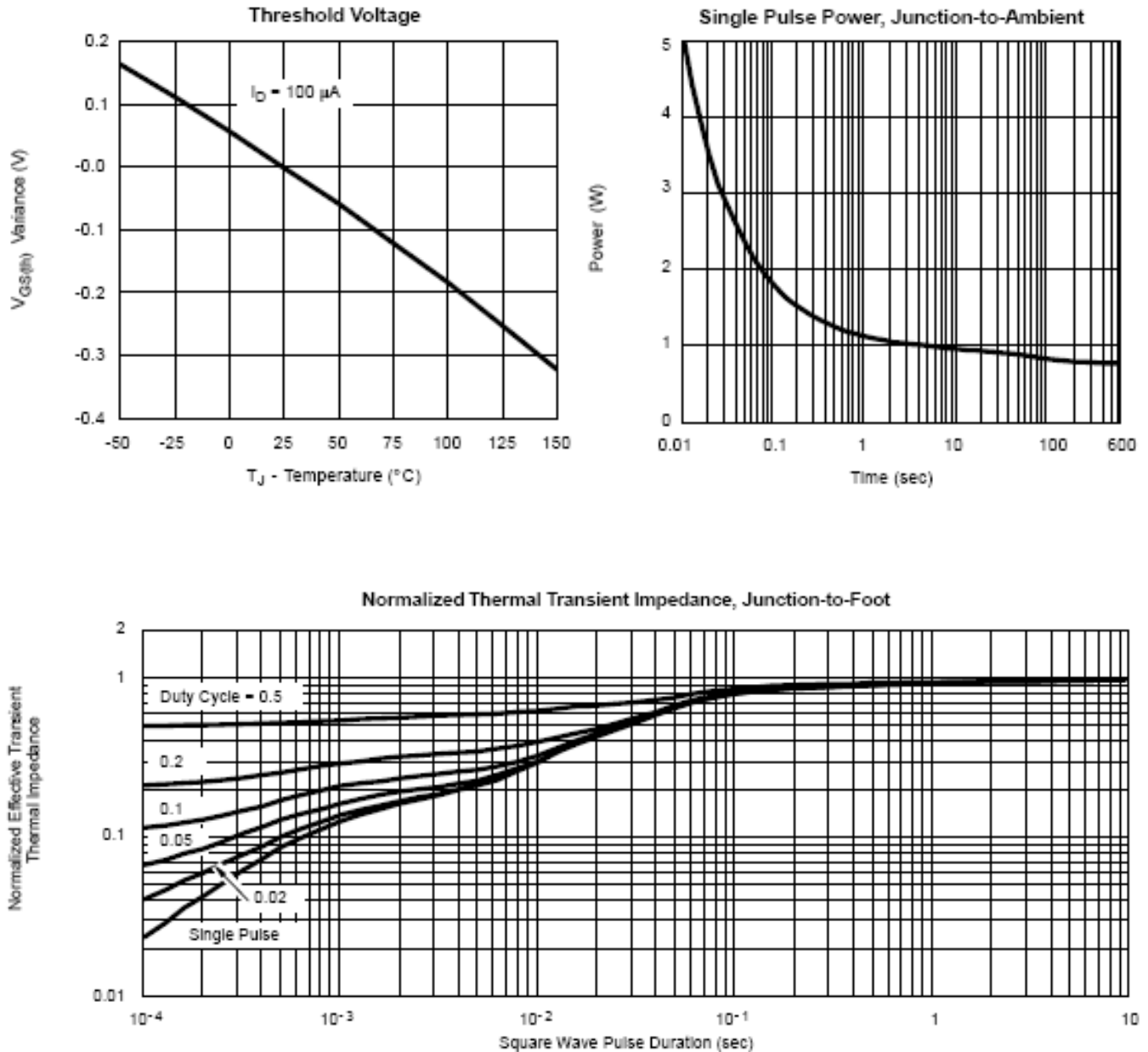




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TYPICAL CHARACTERISTICS





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