



SPP2309

P-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPP2309 is the P-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.

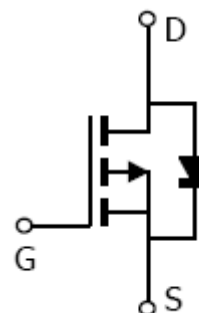
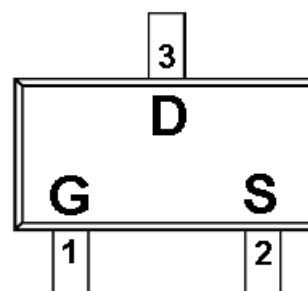
FEATURES

- ◆ P-Channel
 - 20V/2.5A, $R_{DS(ON)}=0.35\Omega @ V_{GS}=-4.5V$
 - 20V/1.5A, $R_{DS(ON)}=0.48\Omega @ V_{GS}=-2.5V$
 - 20V/0.7A, $R_{DS(ON)}=0.75\Omega @ V_{GS}=-1.8V$
- ◆ Super high density cell design for extremely low $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ SOT-23 package design

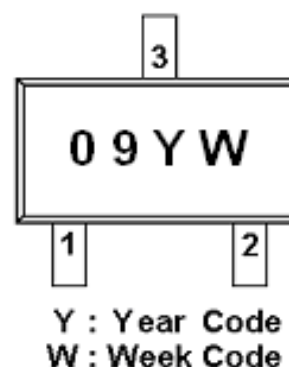
APPLICATIONS

- 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
SPP2309S23RGB	SOT-23	09

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

※ SPP2309S23RGB : 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)	T _A =25°C	I _D	-2.5	A
	T _A =70°C		-1.8	
Pulsed Drain Current		I _{DM}	-10	A
Continuous Source Current(Diode Conduction)		I _S	-2.0	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}	120	°C/W



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ELECTRICAL CHARACTERISTICS

(T_A=25°C Unless otherwise noted)

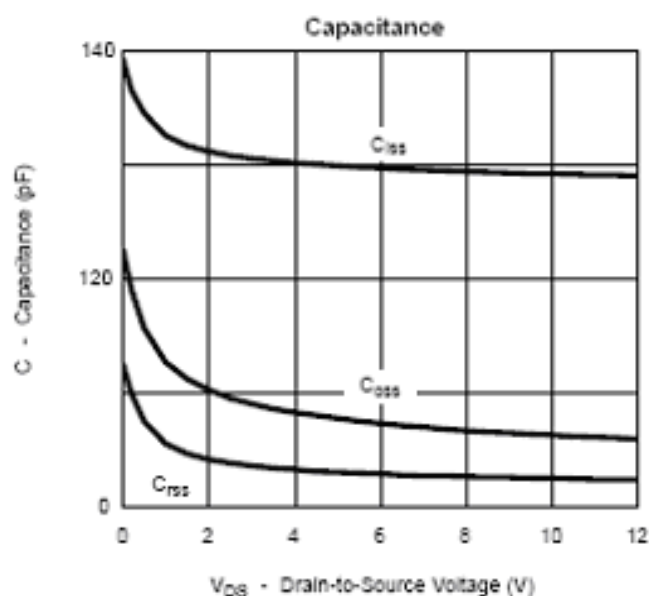
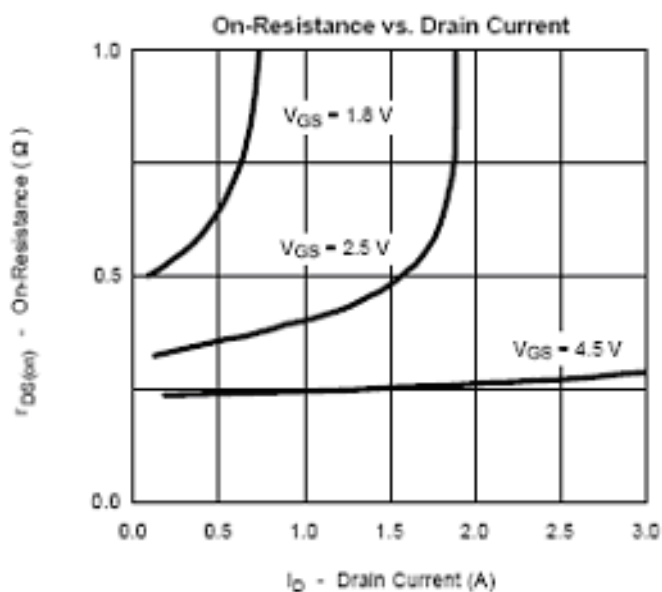
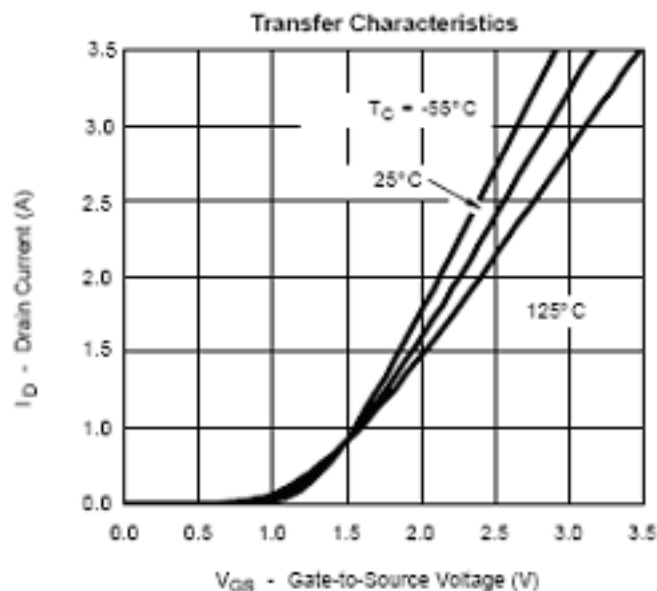
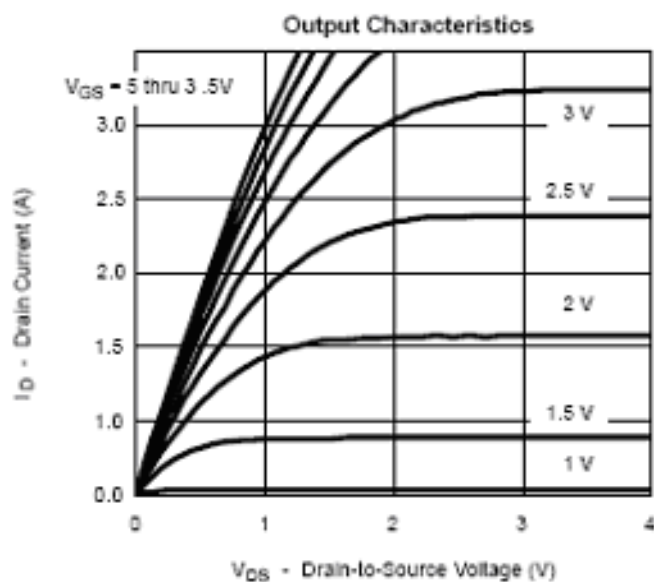
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =-250uA	-20			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250uA	-0.35		-0.8	
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±12V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V			-1	uA
		V _{DS} =-20V, V _{GS} =0V T _J =55°C			-5	
On-State Drain Current	I _{D(on)}	V _{DS} ≤ -4.5V, V _{GS} =-5V	-2.0			A
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-2.5A		0.29	0.35	Ω
		V _{GS} =-2.5V, I _D =-1.5A		0.40	0.48	
		V _{GS} =-1.8V, I _D =-0.7A		0.52	0.75	
Forward Transconductance	g _{fs}	V _{DS} =-10V, I _D =-1.2A		0.4		S
Diode Forward Voltage	V _{SD}	I _S =-0.5A, V _{GS} =0V		-0.8	-1.2	V
Dynamic						
Total Gate Charge	Q _g	V _{DS} =-10V, V _{GS} =-4.5V, I _D ≡-0.7A		1.5	2.0	nC
Gate-Source Charge	Q _{gs}			0.3		
Gate-Drain Charge	Q _{gd}			0.35		
Turn-On Time	t _{d(on)}	V _{DD} =-10V, R _L =10Ω, I _D ≡-1.0A V _{GEN} =-4.5V, R _G =6Ω		5	10	nS
	t _r			15	25	
Turn-Off Time	t _{d(off)}			8	15	
	t _f			1.4	1.8	



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TYPICAL CHARACTERISTICS

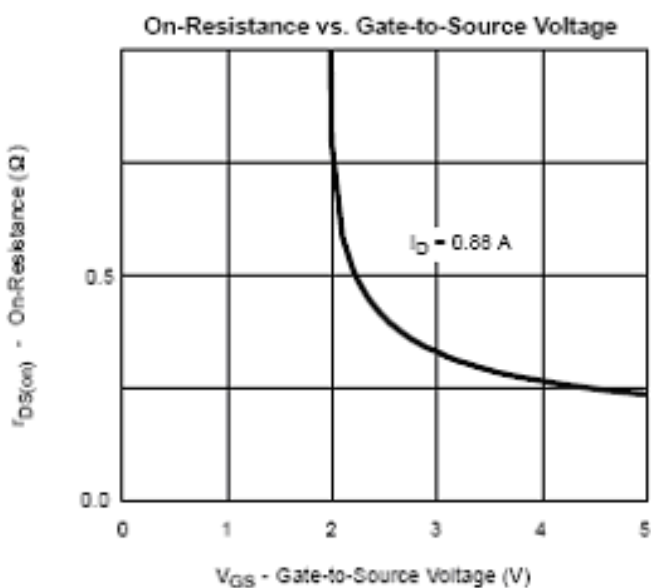
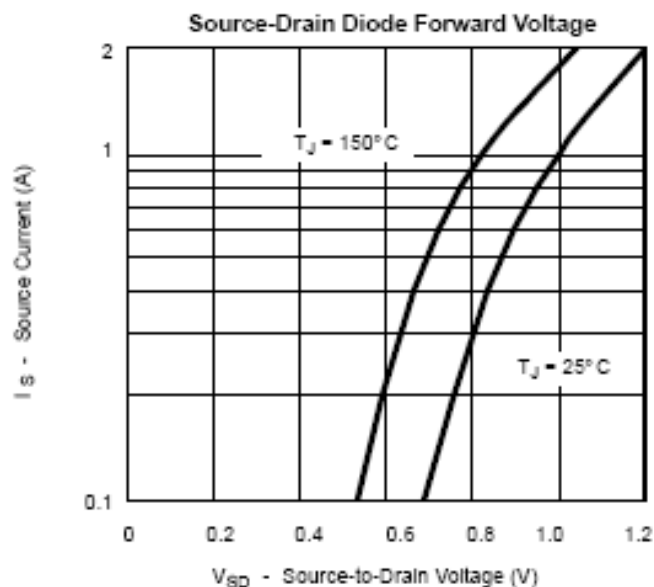
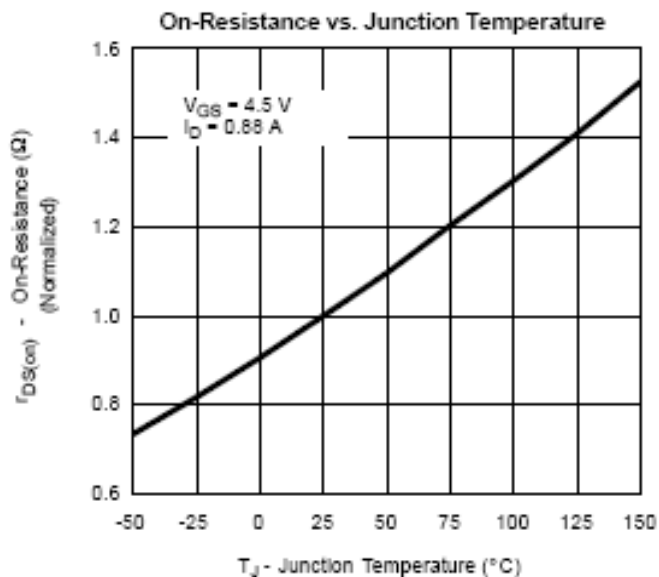
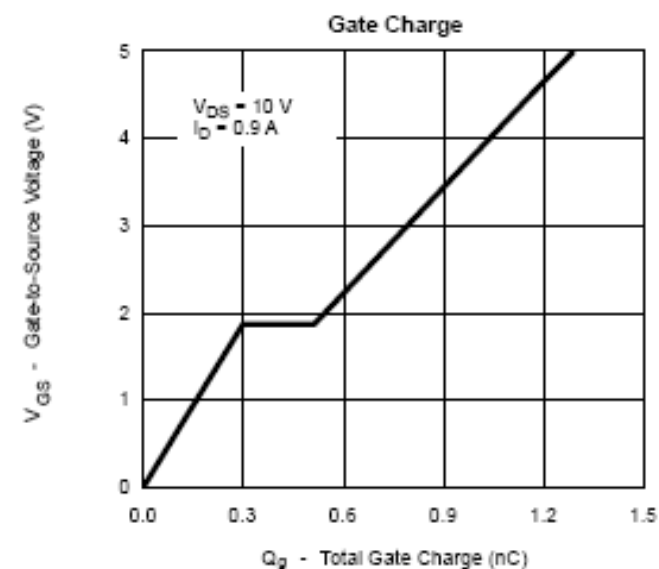




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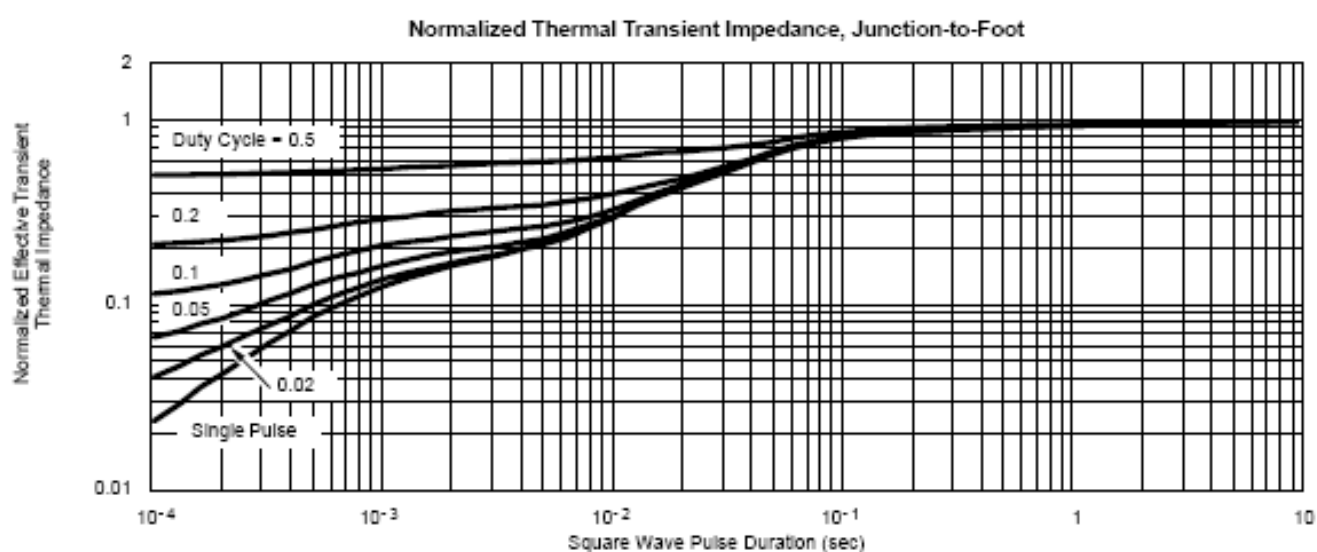
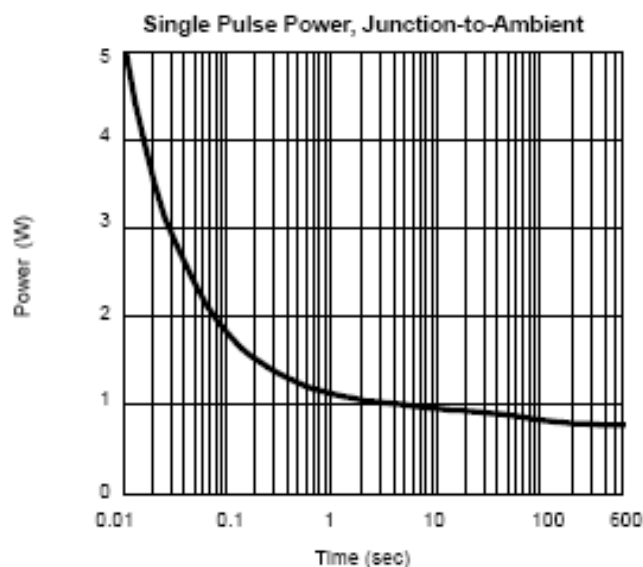
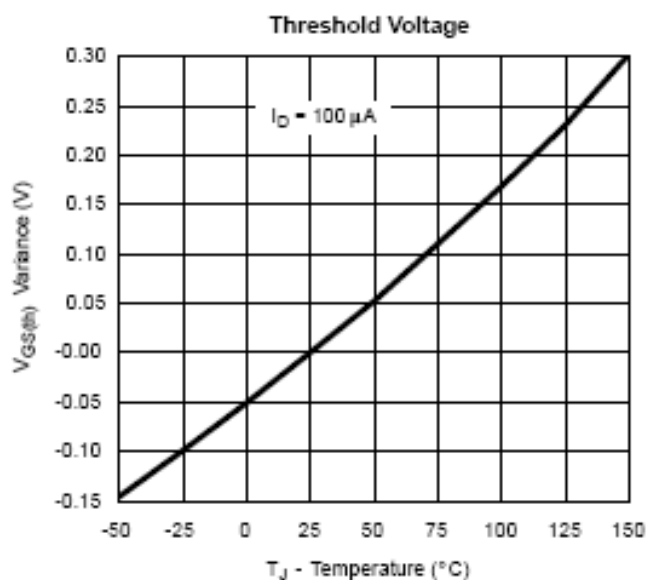




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TYPICAL CHARACTERISTICS





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