



SPP2301D

P-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPP2301D 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.

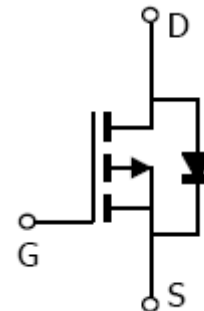
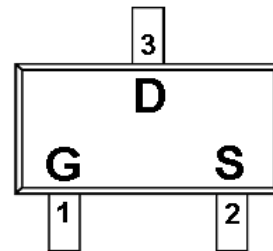
FEATURES

- ◆ -20V/-2.4A, $R_{DS(ON)}=128m\Omega@V_{GS}=-4.5V$
- ◆ -20V/-2.0A, $R_{DS(ON)}=188m\Omega@V_{GS}=-2.5V$
- ◆ Super high density cell design for extremely low $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ SOT-23 package design

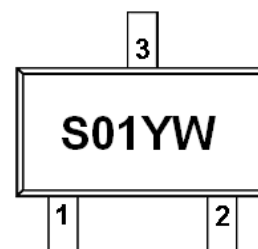
APPLICATIONS

- 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



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
SPP2301DS23RG	SOT-23	S01YW
SPP2301DS23RGB	SOT-23	S01YW

- ※ Week Code : A ~ Z (1 ~ 26) ; a ~ z (27 ~ 52)
- ※ SPP2301DS23RG : Tape Reel ; Pb- Free ;
- ※ SPP2301DS23RGB : Tape Reel ; Pb- Free ; Halogen -Free

ABSOLUTE MAXIMUM RATINGS

(TA=25°C Unless otherwise noted)

Parameter	Symbol	Typical	Unit
Drain-Source Voltage	VDSS	-20	V
Gate -Source Voltage	VGSS	±12	V
Continuous Drain Current(TJ=150°C)	ID	TA=25°C	-2.4
		TA=70°C	-1.8
Pulsed Drain Current	IDM	-10	A
Continuous Source Current(Diode Conduction)	IS	-1.6	A
Power Dissipation	PD	TA=25°C	1.25
		TA=70°C	0.8
Operating Junction Temperature	TJ	-55/150	°C
Storage Temperature Range	TSTG	-55/150	°C
Thermal Resistance-Junction to Ambient	RθJA	120	°C/W



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ELECTRICAL CHARACTERISTICS

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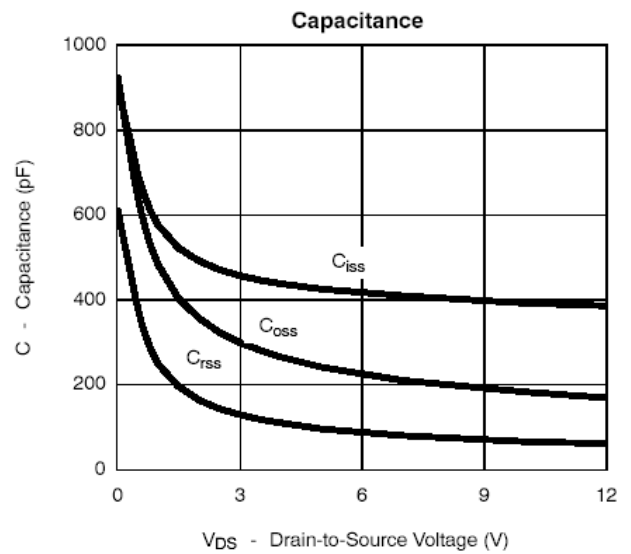
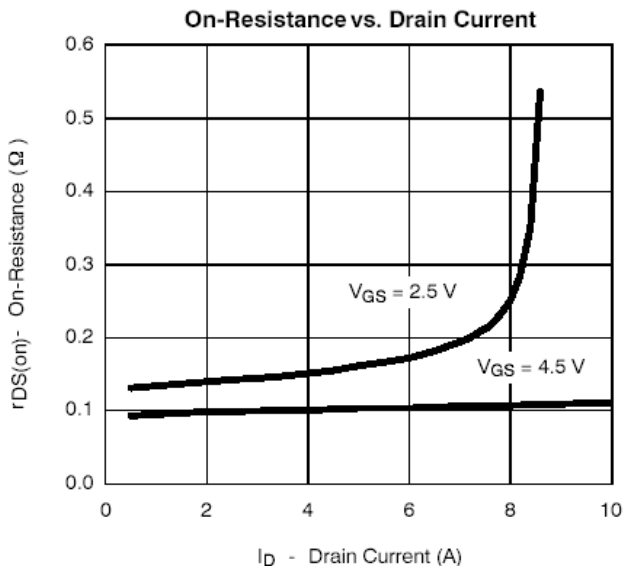
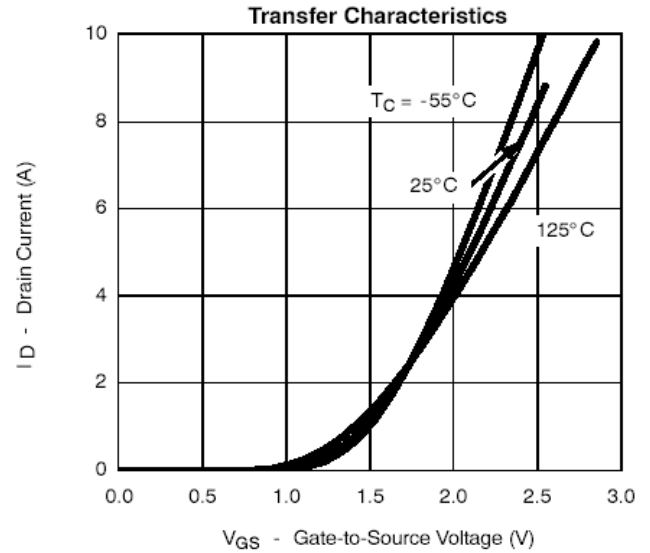
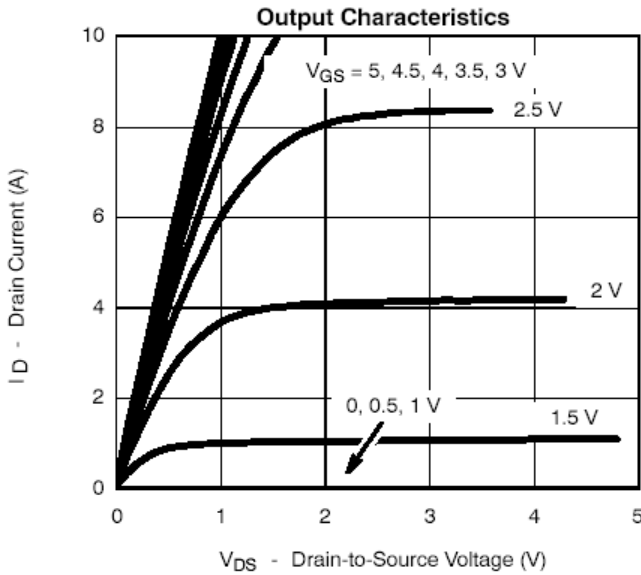
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =-250uA	-20			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250uA	-0.45		-1.5	
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±12V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V			-1	uA
		V _{DS} =-20V, V _{GS} =0V T _J =55°C			-10	
On-State Drain Current	I _{D(on)}	V _{DS} ≤ -5V, V _{GS} =-4.5V	-6			A
		V _{DS} ≤ -5V, V _{GS} =-2.5V	-3			
Drain-Source On-Resistance	R _{DSS(on)}	V _{GS} =-4.5V, I _D =-2.4A		0.115	0.128	Ω
		V _{GS} =-2.5V, I _D =-2.0A		0.165	0.188	
Forward Transconductance	g _{fs}	V _{DS} =-5V, I _D =-2.8A		6.5		S
Diode Forward Voltage	V _{SD}	I _S =-1.6A, V _{GS} =0V		-0.8	-1.2	V
Dynamic						
Total Gate Charge	Q _g	V _{DS} =-6V, V _{GS} =-4.5V I _D =-2.4A		4.8	8	nC
Gate-Source Charge	Q _{gs}			0.75		
Gate-Drain Charge	Q _{gd}			1.3		
Input Capacitance	C _{iss}	V _{DS} =-6V, V _{GS} =0V f=1MHz		35		pF
Output Capacitance	C _{oss}			150		
Reverse Transfer Capacitance	C _{rss}			60		
Turn-On Time	t _{d(on)}	V _{DD} =-6V, R _L =6Ω I _D =-1.0A, V _{GEN} =-4.5V R _G =6Ω		10	20	ns
	t _r			32	45	
Turn-Off Time	t _{d(off)}			38	55	
	t _f			30	50	



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TYPICAL CHARACTERISTICS

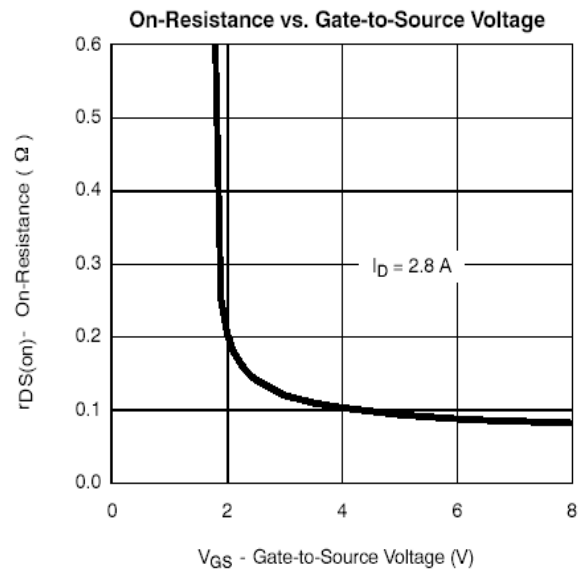
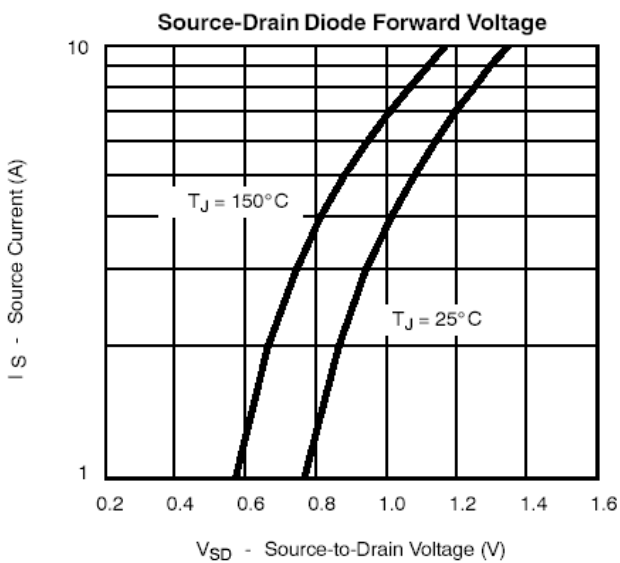
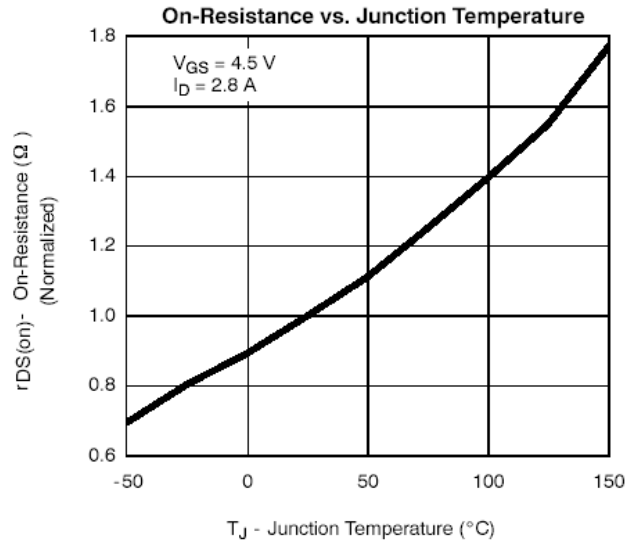
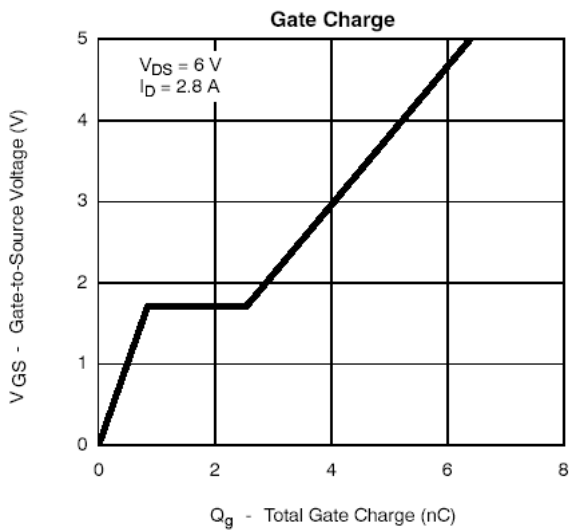




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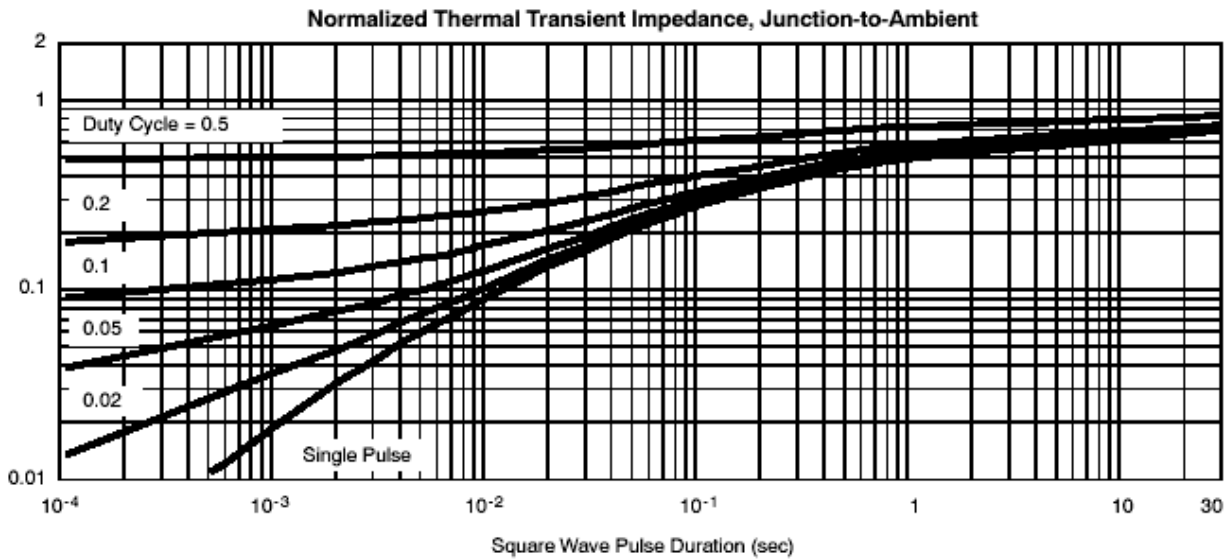
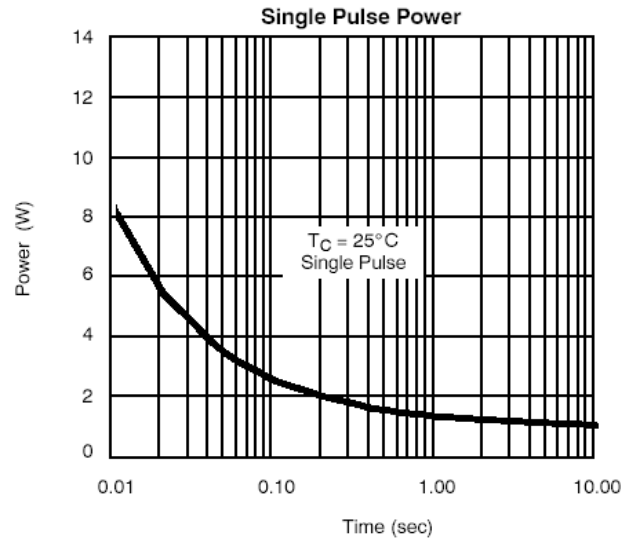
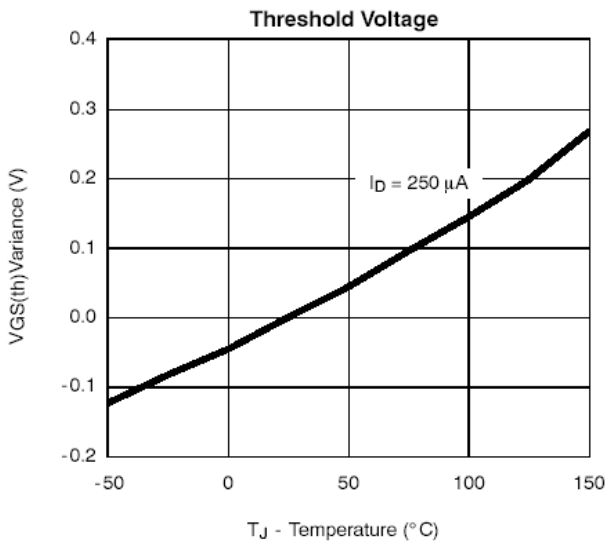
TYPICAL CHARACTERISTICS





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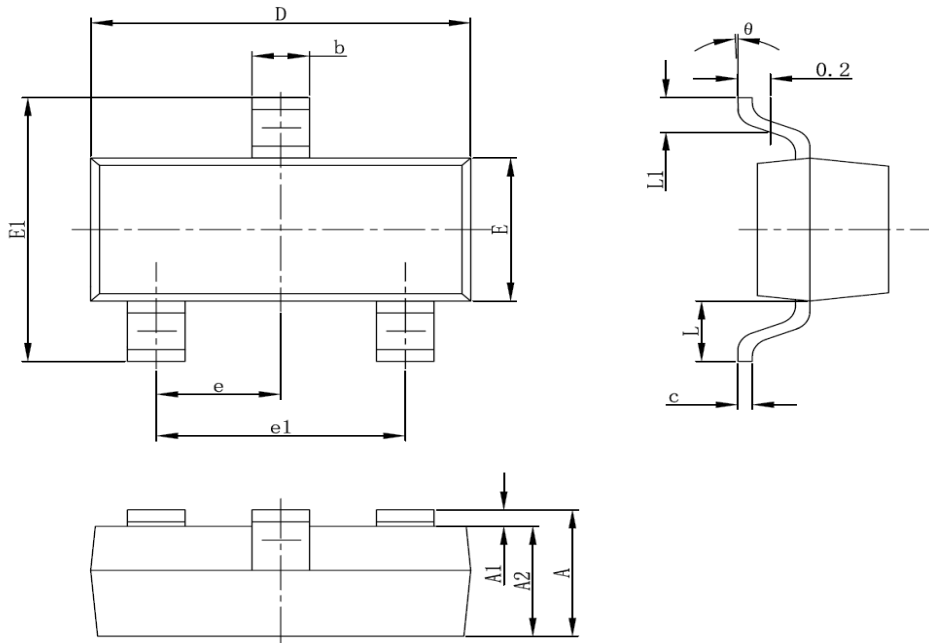




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SOT-23 PACKAGE OUTLINE



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°



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SYNC Power Corporation

7F-2, No.3-1, Park Street

NanKang District (NKSP), Taipei, Taiwan, 115, R.O.C

Phone: 886-2-2655-8178

Fax: 886-2-2655-8468

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