



# SPP6241

## P-Channel Enhancement Mode MOSFET

### DESCRIPTION

The SPP6241 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.

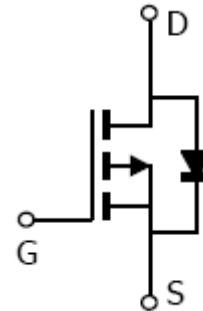
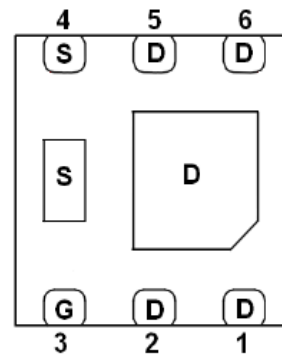
### FEATURES

- ◆ -20V/-3.3 A,  $R_{DS(ON)}=45m\Omega@V_{GS}=-4.5V$
- ◆ -20V/-2.8 A,  $R_{DS(ON)}=55m\Omega@V_{GS}=-2.5V$
- ◆ -20V/-2.3 A,  $R_{DS(ON)}=65m\Omega@V_{GS}=-1.8V$
- ◆ Super high density cell design for extremely low  $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ UDFN2X2-6L package design

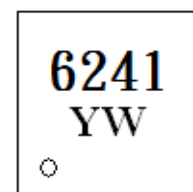
### APPLICATIONS

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

### PIN CONFIGURATION(UDFN2X2-6L)



### PART MARKING



**Y : Year Code**  
**W: Week Code**



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### PIN DESCRIPTION

Pin	Symbol	Description
1	D	Drain
2	D	Drain
3	G	Gate
4	S	Source
5	D	Drain
6	D	Drain

### ORDERING INFORMATION

Part Number	Package	Part Marking
SPP6241UDN6RGB	UDFN2X2-6L	6241YW

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

※ SPP6241UDN6RGB : Tape Reel ; Pb – Free ; Halogen – Free

### ABSOLUTE MAXIMUM RATINGS

(TA=25°C Unless otherwise noted)

Parameter	Symbol	Typical	Unit
Drain-Source Voltage	V <sub>DSS</sub>	-20	V
Gate –Source Voltage	V <sub>GSS</sub>	±12	V
Continuous Drain Current(T <sub>J</sub> =150°C)	I <sub>D</sub>	TA=25°C	-4.3
		TA=70°C	-3.8
Pulsed Drain Current*	I <sub>DM</sub>	-30	A
Continuous Source Current(Diode Conduction)	I <sub>S</sub>	-1.6	A
Power Dissipation	P <sub>D</sub>	TA=25°C	1.9
		TA=70°C	1.2
Operating Junction Temperature	T <sub>J</sub>	-55/150	°C
Storage Temperature Range	T <sub>STG</sub>	-55/150	°C
Thermal Resistance-Junction to Ambient	R <sub>θJA</sub>	65	°C/W

\*Junction temperature limited.



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### ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C Unless otherwise noted)

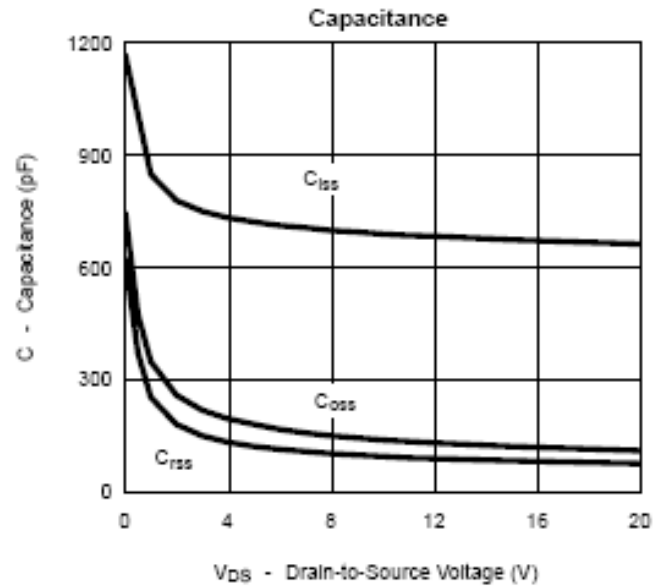
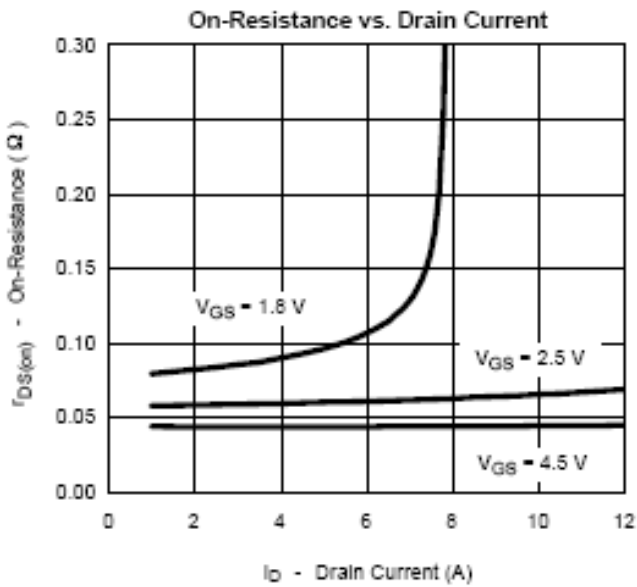
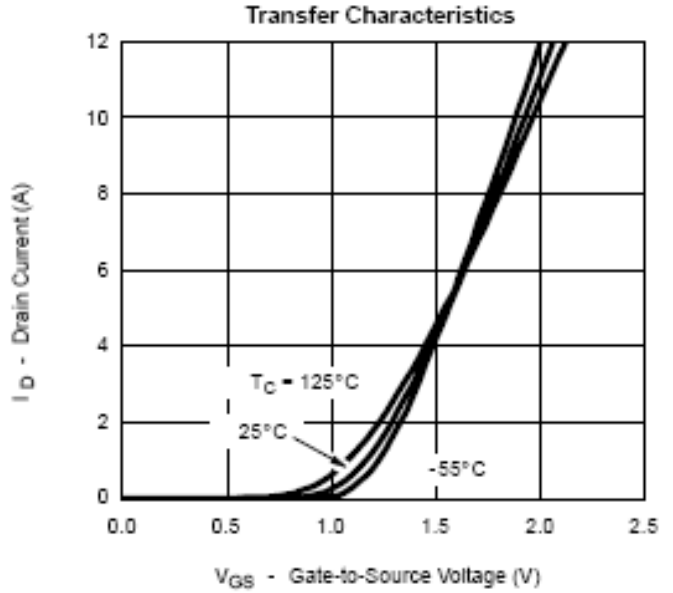
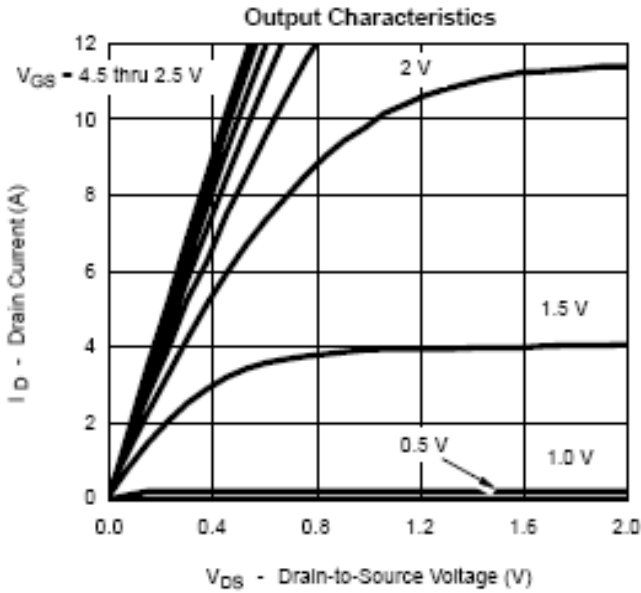
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =-250uA	-20			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250uA	-0.35		-0.9	
Gate Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±12V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-20V, V <sub>GS</sub> =0V			-1	uA
		V <sub>DS</sub> =-20V, V <sub>GS</sub> =0V T <sub>J</sub> =55°C			-10	
On-State Drain Current	I <sub>D(on)</sub>	V <sub>DS</sub> ≤ -5V, V <sub>GS</sub> =-4.5V	-6			A
Drain-Source On-Resistance	R <sub>DSS(on)</sub>	V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-3.3A		0.036	0.045	Ω
		V <sub>GS</sub> =-2.5V, I <sub>D</sub> =-2.8A		0.045	0.055	
		V <sub>GS</sub> =-1.8V, I <sub>D</sub> =-2.3A		0.055	0.065	
Forward Transconductance	g <sub>fs</sub>	V <sub>DS</sub> =-5.0V, I <sub>D</sub> =-3.3A		3		S
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-1.6A, V <sub>GS</sub> =0V		-0.8	-1.2	V
<b>Dynamic</b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-6V, V <sub>GS</sub> =-4.5V I <sub>D</sub> =-3.3A		8	13	nC
Gate-Source Charge	Q <sub>gs</sub>			1.2		
Gate-Drain Charge	Q <sub>gd</sub>			2.2		
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-6V, V <sub>GS</sub> =0V f=1MHz		700		pF
Output Capacitance	C <sub>oss</sub>			160		
Reverse Transfer Capacitance	C <sub>rss</sub>			120		
Turn-On Time	t <sub>d(on)</sub>	V <sub>DD</sub> =-6V, R <sub>L</sub> =6Ω I <sub>D</sub> =-1.0A, V <sub>GEN</sub> =-4.5V R <sub>G</sub> =6Ω		15	25	nS
	t <sub>r</sub>			35	55	
Turn-Off Time	t <sub>d(off)</sub>			60	90	
	t <sub>f</sub>			40	60	



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### TYPICAL CHARACTERISTICS

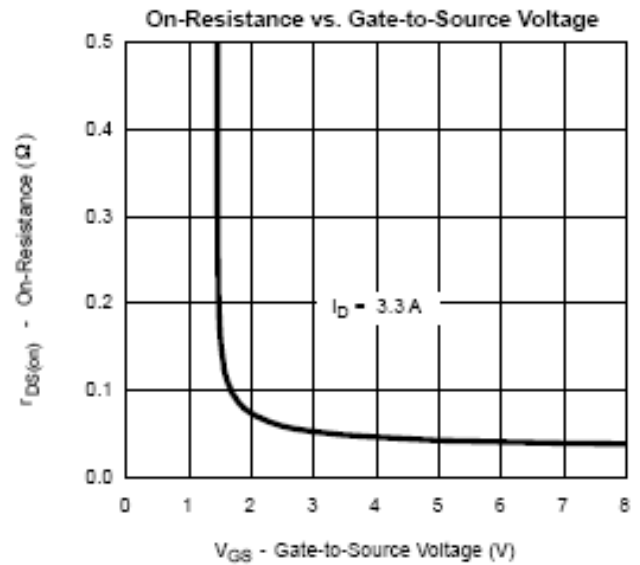
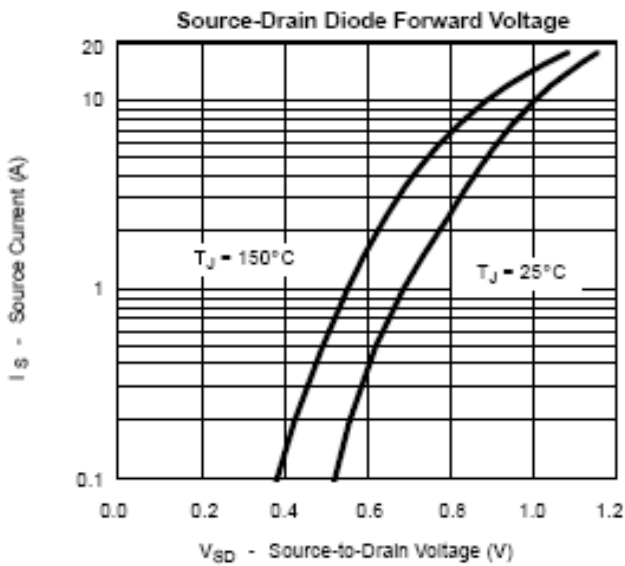
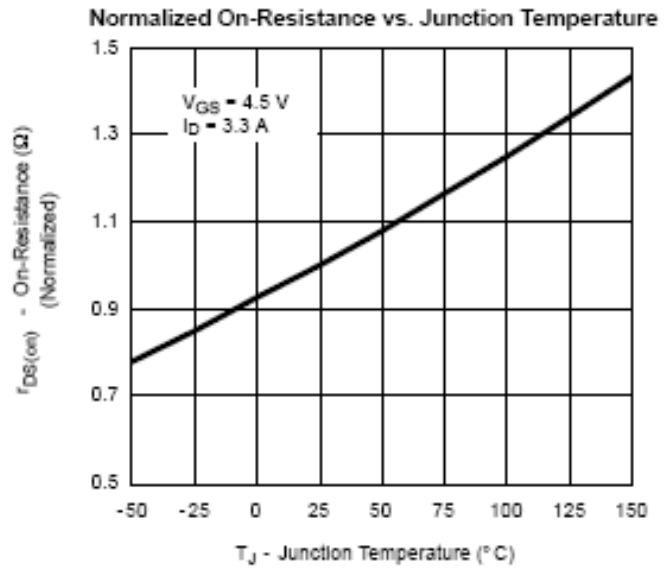
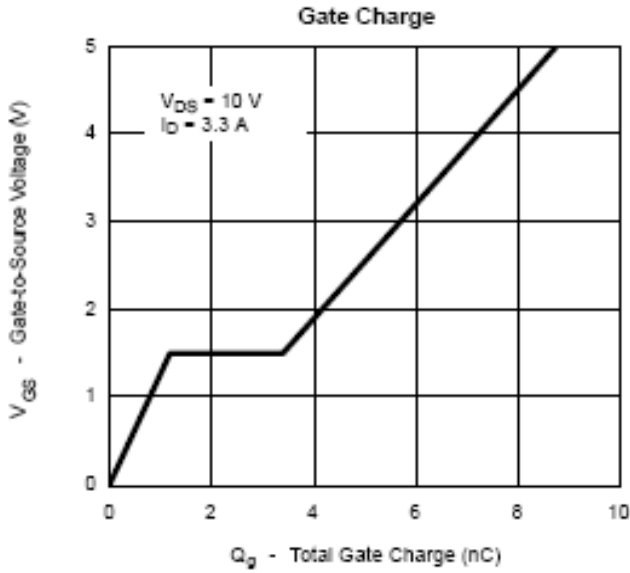




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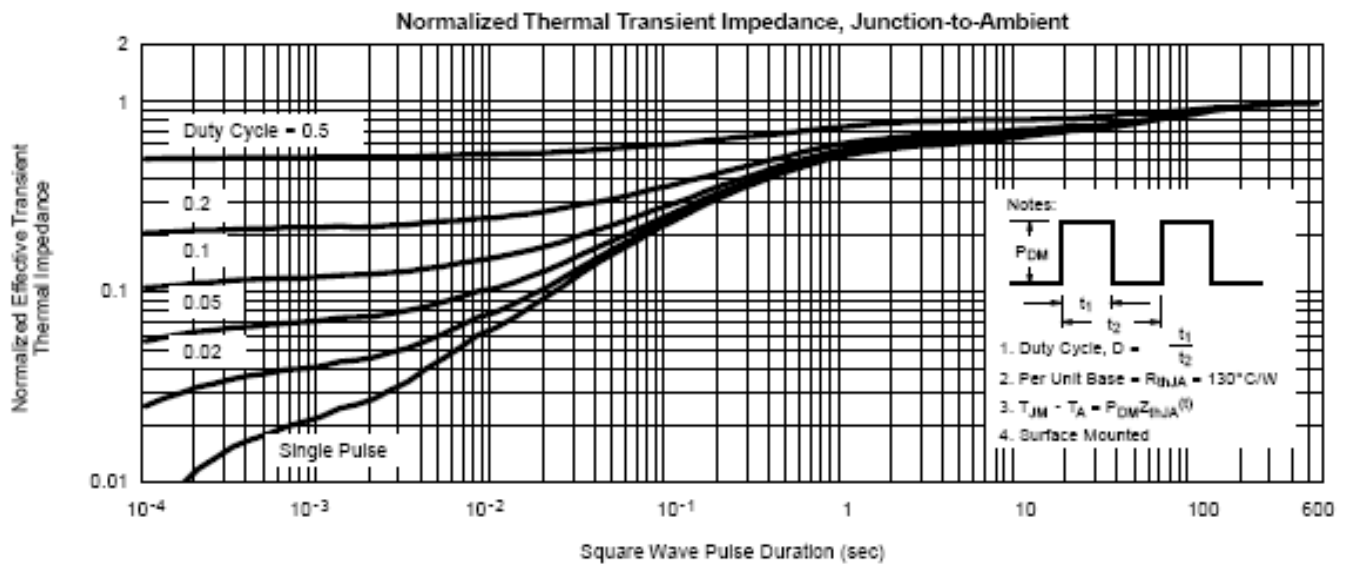
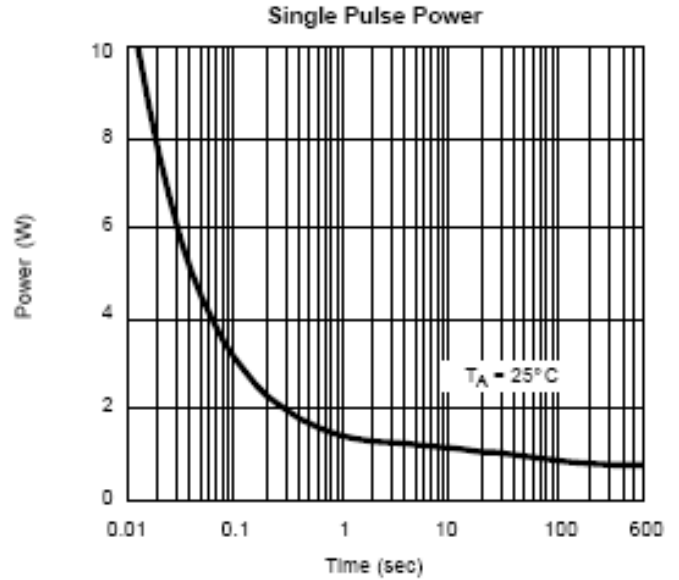
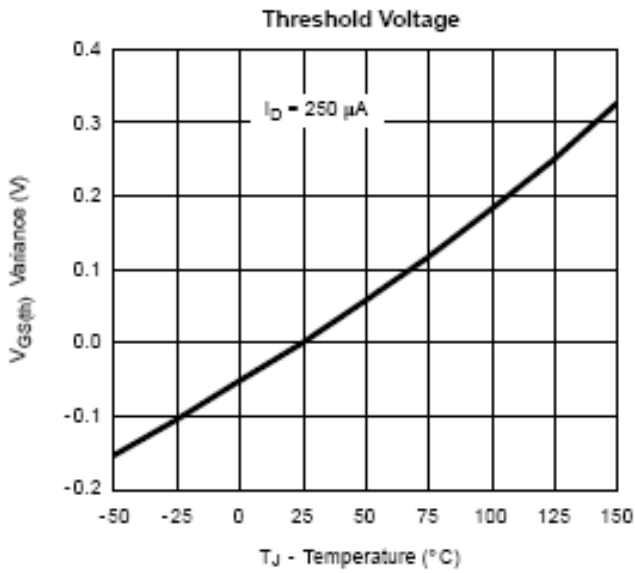
### TYPICAL CHARACTERISTICS





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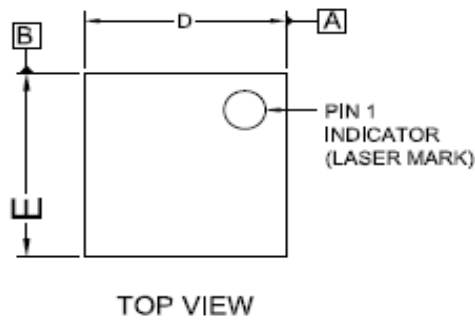
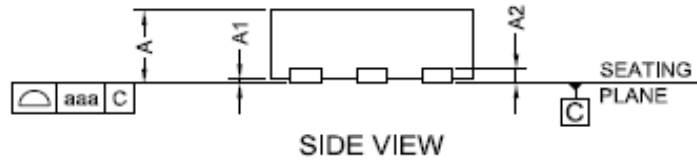
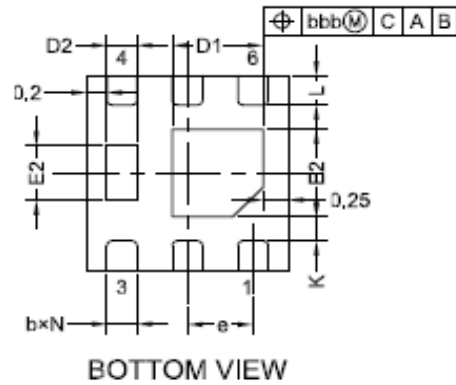
## TYPICAL CHARACTERISTICS





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## UDFN2X2-6L PACKAGE OUTLINE



SYMBOL	MIN	TYP	MAX
A	0,50	0,55	0,60
A1	0,00	0,02	0,05
A2	0,152REF.		
b	0,25	0,30	0,35
D	1,95	2,00	2,05
D1	0,80	0,90	1,00
D2	0,25	0,30	0,35
E	1,95	2,00	2,05
E1	0,80	0,90	1,00
E2	0,46	0,56	0,66
e	0,65BSC		
L	0,25	0,30	0,35
J	0,40BSC		
K	0,20MIN		
N	6		
aaa	0,08		
bbb	0,10		



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