

# SPP3407B

## DESCRIPTION

The SPP3407B 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.

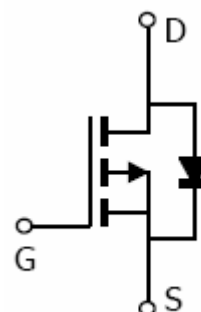
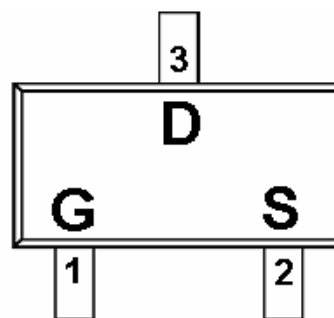
## FEATURES

- ◆ -30V/-4.0A, $R_{DS(ON)}=70m\Omega@V_{GS}=-10V$
- ◆ -30V/-3.2A, $R_{DS(ON)}=95m\Omega@V_{GS}=-4.5V$
- ◆ Super high density cell design for extremely low  $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ SOT-23-3L package design

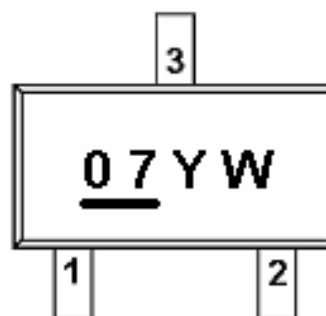
## APPLICATIONS

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

## PIN CONFIGURATION(SOT-23-3L)



## PART MARKING



Y : Year Code  
W : Week Code

# SPP3407B

## PIN DESCRIPTION

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

## ORDERING INFORMATION

Part Number	Package	Part Marking
SPP3407BS23RGB	SOT-23-3L	0ZYW

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

※ SPP3407BS23RGB : 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>	-30	V
Gate –Source Voltage	V <sub>GSS</sub>	±20	V
Continuous Drain Current(T <sub>J</sub> =150°C)	I <sub>D</sub>	TA=25°C	-3.6
		TA=70°C	-3.0
Pulsed Drain Current	I <sub>DM</sub>	-15	A
Continuous Source Current(Diode Conduction)	I <sub>S</sub>	-1.0	A
Power Dissipation	P <sub>D</sub>	TA=25°C	1.25
		TA=70°C	0.8
Operating Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature Range	T <sub>STG</sub>	-55/150	°C
Thermal Resistance-Junction to Ambient	R <sub>θJA</sub>	120	°C/W

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## ELECTRICAL CHARACTERISTICS

( $T_A=25^{\circ}\text{C}$  Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.8		-2.5	
Gate Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-24V, V_{GS}=0V$			-1	uA
		$V_{DS}=-24V, V_{GS}=0V$ $T_J=55^{\circ}\text{C}$			-10	
On-State Drain Current	$I_{D(on)}$	$V_{DS}\leq -5V, V_{GS}=-10V$	-10			A
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-4.0A$		0.062	0.070	$\Omega$
		$V_{GS}=-4.5V, I_D=-3.2A$		0.085	0.095	
Forward Transconductance	$g_{fs}$	$V_{DS}=-5.0V, I_D=-4.0A$		10		S
Diode Forward Voltage	$V_{SD}$	$I_S=-1.0A, V_{GS}=0V$		-0.8	-1.2	V
<b>Dynamic</b>						
Total Gate Charge	$Q_g$	$V_{DS}=-15V, V_{GS}=-10V$ $I_D=-3.5A$		10	18	nC
Gate-Source Charge	$Q_{gs}$			1.6		
Gate-Drain Charge	$Q_{gd}$			3.0		
Input Capacitance	$C_{iss}$	$V_{DS}=-15V, V_{GS}=0V$ $f=1\text{MHz}$		450		pF
Output Capacitance	$C_{oss}$			95		
Reverse Transfer Capacitance	$C_{rss}$			55		
Turn-On Time	$t_{d(on)}$	$V_{DD}=-15V, R_L=15\Omega$ $I_D=-1.0A, V_{GEN}=-10V$ $R_G=6\Omega$		8	18	nS
	$t_r$			8	18	
Turn-Off Time	$t_{d(off)}$			25	50	
	$t_f$			25	35	