SPP08T10
P-Channel Enhancement Mode MOSFET

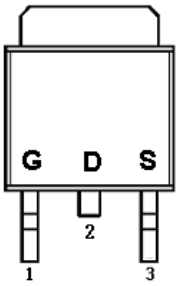
DESCRIPTION
The SPP08T10 is the P-Channel logic enhancement mode power field effect transistors are produced using super high cell density , DMOS trench technology. The SPP08T10 has been designed specifically to improve the overall efficiency of DC/DC converters using either synchronous or conventional switching PWM controllers. It has been optimized for low gate charge, low $R_{DS(ON)}$ and fast switching speed.

APPLICATIONS
- Powered System
- DC/DC Converter
- Load Switch
- Power Tool
- Motor Control

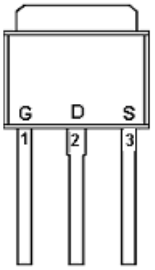
FEATURES
- -100V/-3A,$R_{DS(ON)}$=264mΩ@V_{GS}=-10V
- -100V/-2A,$R_{DS(ON)}$=324mΩ@V_{GS}=-4.5V
- High density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- TO-252-2L/TO-251S-3L package design

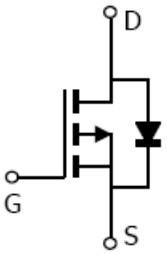
PIN CONFIGURATION

TO-252-2L

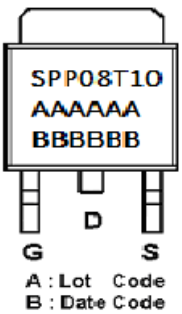


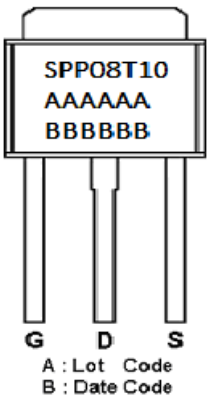
TO-251S-3L





PART MARKING





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PIN DESCRIPTION

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

ORDERING INFORMATION

Part Number	Package	Part Marking
SPP08T10T252RGB	TO-252-2L	SPP08T10
SPP08T10ST251TGB	TO-251S-3L	SPP08T10

※ SPP08T10T252RGB : Tape Reel ; Pb – Free ; Halogen - Free
※ SPP08T10ST251TGB : Tube ; Pb – Free ; Halogen - Free

ABSOULTE MAXIMUM RATINGS
(T_A=25℃ Unless otherwise noted)

Parameter		Symbol	Typical	Unit
Drain-Source Voltage		V_{DSS}	-100	V
Gate –Source Voltage		V_{GSS}	±20	V
Continuous Drain Current(T_J=150℃)	T_C=25℃	I_D	-8	A
	T_C=100℃		-5.5	
Pulsed Drain Current		I_{DM}	-20	A
Power Dissipation	T_C=25℃	P_D	35.7	W
Operating Junction Temperature		T_J	-55/150	℃
Storage Temperature Range		T_{STG}	-55/150	℃
Thermal Resistance-Junction to Case		$R_{\theta JC}$	3.5	℃/W

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ELECTRICAL CHARACTERISTICS
(T_A=25℃ Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=-250uA	-100			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250uA	-1.0		-2.5	
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-100V,V_{GS}=0V			-1	uA
Continuous-Source Current	I_S	V_D=V_G=0V, Force Current			-8	A
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-10V,I_D=-3A		223	264	mΩ
		V_{GS}=-4.5V,I_D=-2A		253	324	
Diode Forward Voltage	V_{SD}	I_S=-1A,V_{GS} =0V			-1.2	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=-50V, V_{GS}=-10V,I_D= -1A		20		nC
Gate-Source Charge	Q_{gs}			4.1		
Gate-Drain Charge	Q_{gd}			5.1		
Input Capacitance	C_{iss}	V_{DS}=-30,V_{GS}=0V f=1MHz		1029		pF
Output Capacitance	C_{oss}			68		
Reverse Transfer Capacitance	C_{rss}			39		
Turn-On Time	$t_{d(on)}$	V_{DD}=-30V, I_D=-1.5A, V_{GEN}=-10V, R_G=6Ω		10		nS
	t_r			9.5		
Turn-Off Time	$t_{d(off)}$			54		
	t_f			29		

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TYPICAL CHARACTERISTICS

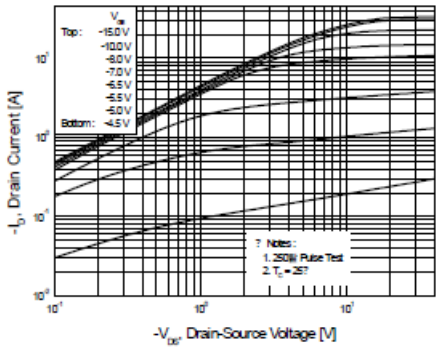

Figure 1. On-Region Characteristics

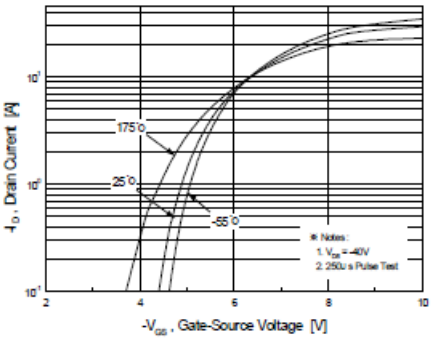

Figure 2. Transfer Characteristics

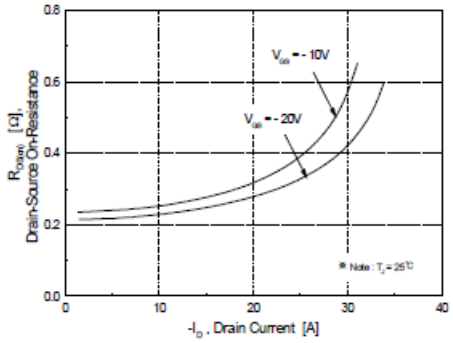

Figure 3. On-Resistance Variation vs. Drain Current and Gate Voltage

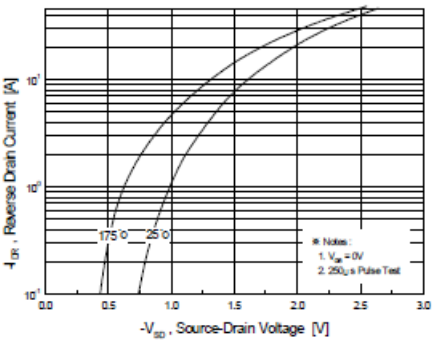

Figure 4. Body Diode Forward Voltage Variation vs. Source Current and Temperature

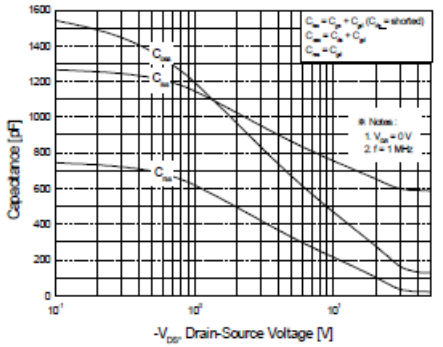

Figure 5. Capacitance Characteristics

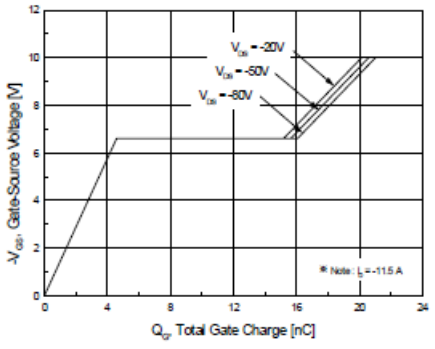

Figure 6. Gate Charge Characteristics

TYPICAL CHARACTERISTICS

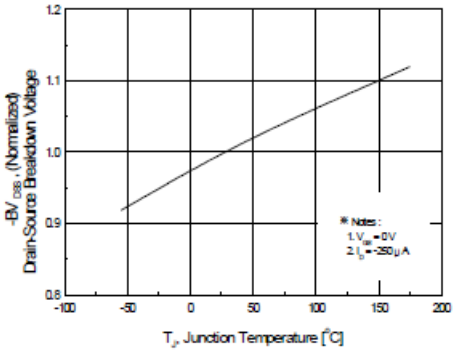

Figure 7. Breakdown Voltage Variation vs. Temperature

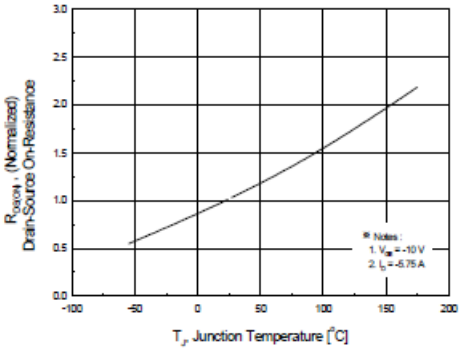

Figure 8. On-Resistance Variation vs. Temperature

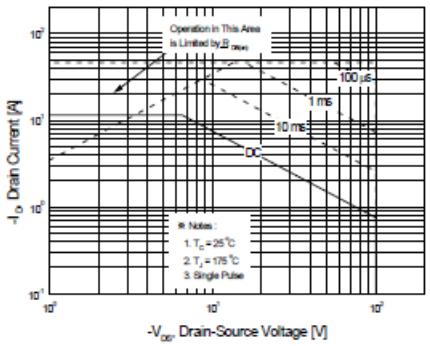

Figure 9. Maximum Safe Operating Area

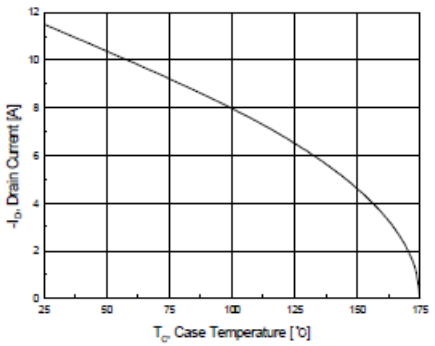

Figure 10. Maximum Drain Current vs. Case Temperature

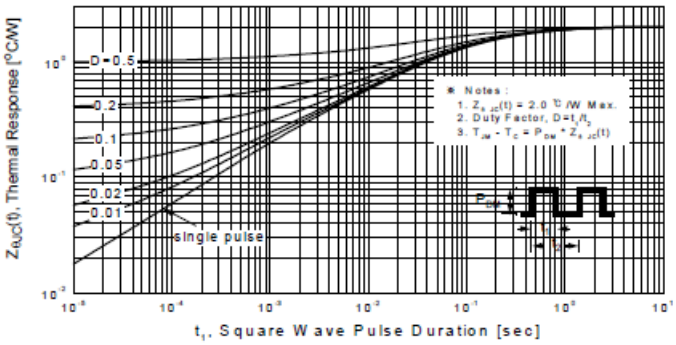

Figure 11. Transient Thermal Response Curve

SYNC Power Corporation
7F-2, No.3-1, Park Street
NanKang District (NKSP), Taipei, Taiwan 115
Phone: 886-2-2655-8178
Fax: 886-2-2655-8468
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